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The future's not what it used to be: the decline of technological enthusiasm in America, 1957-1970

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The future's not what it used to be:
The decline of technological enthusiasm in America, 1957-1970

by

Lester Louis Poehner Jr.

A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
DOCTOR OF PHILOSOPHY

Major: History of Technology and Science

Major Professor: Alan I Marcus

Iowa State University

Ames, Iowa

2000

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The future's not what it used to be:
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Modern America's manifestation of progress depended on widespread eagerness for technological and scientific solutions to social and cultural problems. During the decade of the 1960s, this system of beliefs, notions, and underlying values was attacked by detractors who offered a very different version of a better future. Using standard sources, underground press articles, and the song lyrics of Bob Dylan, the Grateful Dead, and The Doors, the work focuses on the fear of nuclear war immediately after Sputnik, which led people to build personal bomb shelters as a civil defense against atomic bombs and fallout. This fear spilled over into the Atoms for Peace program, as public protests stopped construction of a nuclear reactor at Bodega Bay in Sonoma County, California. The Free Speech Movement at U. C. Berkeley protested the dehumanization of the students in the "multiversity." A fuller realization of anti-technological attitudes originated in the Haight-Ashbury hippie counterculture, which first came to public attention through the Human Be-In and the Summer of Love, ushered in a short lived Age of Aquarius. The hippies promoted a new spirituality based on LSD, first advocated by

Timothy Leary. Ken Kesey, aided by his Merry Pranksters and acid by Owsley, sponsored public Acid Tests and Trips Festivals to promote the new experience. Feeling alienated from modern civilization and seeking a natural lifestyle, some hippies went back to the land, forming communes like Morning Star and Wheeler Ranch. The Whole Earth Catalog of Stewart Brand expounded technological self-sufficiency while proclaiming a vision of a holistic planet, brought home by the "Earthrise" pictures from the Apollo program. These natural and holistic expressions found form in the ecology movement with the apocalypse theme underlying it clearly illustrated by Rachel Carson in Silent Spring and Paul Erlich in The Population Bomb. Earth Day brought these concerns together, kicking off the ecology movement, the longest lasting achievement of the sixties rebellion, which focused on the end of unreasonable expectations and sought to promote appropriate technology with a view toward the limits of both progress and nature.

INTRODUCTION

*The pumps don't work 'cause the vandals took the handles*¹

Modern industrial America's particular manifestation of the vision and promise of progress, which was labeled technological enthusiasm, depended on widespread eagerness for technological and scientific solutions to social and cultural problems. This specific social notion, that all problems, or at least the only problems worth working out, are solvable through invention, production, and management, permeated American society and provided the intellectual heart of the Progressive movement and the overall promise that motivated the progressive faith in a better future. Emerging shortly after the Civil War and popularized and promoted by Edward Bellamy and other public thinkers, it envisioned a future utopia where technology freed humans from drudgery. King Camp Gillette and a wide number of other progressive planners at the *fin de siècle* advocated a wide variety of technological solutions and organizations as the chief means for resolving pressing social problems ranging from war to poverty. The technologies of electricity, and later, as the twentieth century progressed, the automobile, the airplane, and a growing chemical/pharmaceutical industry, were each in turn hailed as harbingers of a new and better age where specific technical developments would advance the greater common good.²

This enthusiasm for technological solutions continued unabated through the Second World War. Indeed, by the end of the war, many commentators hailed the victory over fascism as a technological triumph, a conquest of production, as much as a victory earned by our brave young men. The new inventions produced by wartime technology, radar, sonar, and the atomic bomb, certainly lent credibility to this interpretation, particularly in light of the rash of "now it can be told stories" published in the popular press following the war. "World War II reaffirmed America's technological strength" in a mighty and easily demonstrated manner but, in a manner just as powerful, the war reaffirmed Americans' social faith in that technology. This faith surged though the early postwar years, when there proved to be no shortage of experts extolling the efficacy of scientific and technological salvation and deliverance. One of the most prominent, Dr. Vannevar Bush, flatly and succinctly decreed that "science won the war, and science would win the peace."¹³

One widely regarded historian, Thomas Park Hughes, wrote extensively on the rise and triumph of technological enthusiasm. He described his 1989 work, American Genesis: A Century of Invention and Technological Enthusiasm, 1870-1970, as a book "about an era of technological enthusiasm in the United States, an era that is now passing into history." Summing up the historical trends in the nineteenth and twentieth centuries, Hughes concluded, "Historians looking back a century from now on the sweep of American history may well decide that the

century of technological enthusiasm was the most characteristic and impressively achieving century in the national history."⁴

Hughes described these social trends in sweeping fashion. Yet the demise of this "characteristic and impressively achieving" ideal in the decade of the 1960s lacks substantial development or deeper analysis. The generation of the 1960s ends American Genesis and with it, according to Hughes, technological enthusiasm, yet his study of the period comprises only 16 of his 472 pages. At that, much of this slim section was devoted to intellectual criticism, leaving the reader with the impression that a few social critics, primarily Jacques Ellul and Lewis Mumford, ended the era of American technological enthusiasm with a gargantuan thump of their weighty tomes, writings that for the most part were not even contemporary with the decade.⁵

Earlier in his career Hughes cited students in particular, and young people in general, the omnipresent "Youth" frequently referred to in the popular press, as the central players in fomenting this discontent. Aside from locating the root of the change, no further explanation was offered, nor were any arguments or examples cited. Still, this section rings truer than the Ellul and Mumford thesis Hughes offered at the conclusion of American Genesis.

College students of the late sixties and early seventies know well - even contributed to - the sharp reaction against American technology. This attitude was and is interesting in itself, but the interest is heightened for an older generation that recalls the enthusiastic commitment to technology that was widespread only decades ago. Those familiar with American history find an even more pronounced contrast if they compare the popular sentiments of

the present decade with those of a broad section of Americans from decades past.⁶

This decline in technological enthusiasm, or the loss of faith in the ability of science and technology to bring societal progress, lacks the concrete examples that Hughes cited in ably demonstrating its rise. If Hughes is correct then the decline of technological enthusiasm represented the greatest change in American thought since the Civil War. The effect of the decline of so defining and seminal an ideal would be profound. Indeed, the demise should occur on a scale as epic as River Rouge, TVA, the Manhattan Project, and the other examples Hughes cites as monuments to technological enthusiasm.

Well I used to love her / But it's all over now⁷

The system of beliefs, notions, and underlying values that supporting the American national faith in technological Progress were attacked by its detractors, who offered a very different version of a better future. The clash of cultures in the decade of the 1960s that historically typify the period were public manifestations of these two radically different visions of the future coming into direct conflict. Public reactions to this state of affairs was, by turns, epic and idiotic, senescent and surreal, and the resulting debate changed the discussions, arguments and positions for years to come, and, in the end, curbed technological enthusiasm as a primary social notion.

Three factors worked individually and in synergy to undermine the prevailing social notions of technological enthusiasm. First, public fear of the atomic age's real and imminent Apocalypse, and later similar catastrophic predictions of ecological disaster, created a rash of concerns, few of which yielded to feasible technological solutions. Added to this fear was a growing doubt, exacerbated by both the diminishing ability of science and technology to deliver on the more utopian promises made in its name. Fear and doubt were magnified by a seemingly endless parade of failures, large and small, each of them worried over by the press and social critics alike. The result was a widespread disillusionment with technological progress and with the price paid for accepting its consequences, which, in turn, fueled a relentless, occasionally reckless, search for alternatives.

Fear motivated, sustained, and fueled the initial public attacks on science and technology. The modern age of potential nuclear warfare left people feeling threatened by both the technology itself and the system that developed it. In fact few could, or did, bother to separate the two. Many in the nation lived in constant fear of atomic attack, not just among the general public but throughout entire branches of the government, where this fear provided either a prime motivation or a *raison de etre* for their funding and operation. Despite this intense focus, the nation's best advertised efforts to deal with the threat of nuclear weapons amounted to little more than lists of suggested survivalist tactics and endless doomsday scenarios. A lavishly funded arms race of truly surrealistic dimensions intensified

the fear of those who could only build shelters and prepare for their eventual, and apparently inevitable, use. The most frightening aspects of these preparations lay in their thoroughly mundane nature, most obvious in civil defense drills that occurred with the regularity and precision of fire drills in schools across the nation. The atomic bomb fueled a growing sense of nihilism and illustrated to many the final absurdity of technology's promise of a bright and happy tomorrow. This proved to be a major factor in the sixties countercultures' wholesale rejection of prevailing values and their adoption of the "Live for today / We want the world and we want it now" attitude that characterized so much of their demeanor.⁸

American technological failures and the negative publicity which followed them also created widespread doubts in the American psyche. Sputnik offered the first, and in many respects, the worst blow to Americans' national faith and confidence in technological solutions. The small metal ball hurled into orbit by the Soviet Union shattered the public's faith in innate American technological supremacy, as the crux of United States foreign policy in the escalating arms race was based on the nation's ability to "stay ahead of the game." Though many attempted to use the incident to stir up a still greater public effort, disappointment and despair overwhelmed others. That the focus of American fear was a creation of scientific and technological enterprise, our own atomic Frankenstein, was an irony not lost on many commentators.

This situation built steadily throughout the twenty years following World War II, as the American research enterprise and its defense department sponsors, driven primarily by national security considerations, presumed nuclear confrontation and worked to win rather than prevent a nuclear conflict. The cold war, though based on ideology, reached its apex as a war of technology where both sides pursued quantum leaps in armaments. Vannevar Bush's perception that science won the war and would win the peace extended logically to the conflict with the Soviet Union which, rather than an actual shooting war (a "hot" war in the parlance of the time), was mostly a technological arms race, a cold war, in which weapon stockpiles multiplied and nuclear yields increased by orders of magnitude. Science won the war, only to lose much of the public trust and faith that comprised technological enthusiasm. The decline of technological enthusiasm and the loss of America's faith in progress gained impetus from the fear of science and technology, brought into sharp focus through the lens of atomic warfare and magnified by missiles and a shrinking world.⁹

From Hiroshima onward, there was a growing fear of all things atomic. Sputnik both amplified and focused these fears, as it reduced the warning of, and possible response to, an atomic attack to mere minutes, placing Americans in constant danger of instant annihilation. The launch of Sputnik immediately changed the scope and magnitude of atomic warfare, instantly negating the historical advantages that had bolstered American complacency. Following the launch, a

steady current of panicked commentary raised profound doubts about technology's ability to guarantee security.¹⁰

Civil Defense became a prime exemplar of nuclear fear and demonstrated the corrosive effect of such fear on traditionally accepted values. The civil defense debate brought the apocalypse "home," and demonstrated the ability of technological imperatives to overwhelm and eclipse basic values, such as the sanctity of human life. Shelters also demonstrated to many the final insane and surreal world created by a technology divorced from humanity.

This doubt was further fostered by the mounting evidence that scientific and technological solutions only created problems greater than those they were intended to solve in the first place. By dint of near universal adoption, their combined effects created large-scale problems owed not to intrinsic design flaws, but an excess of success. Technological advances led to an unprecedented and unanticipated complex of controversies. Pollution problems in particular arose, not out of minor inadequacies in the new technologies, but out of their very success. The ecology movement effectively used scientific and technological successes as one proof of their inevitable failure: "In sum, environmental pollution is not to be regarded as an unfortunate, but incidental, by-product of the growth of population, the intensification of production, or of technological progress. It is, rather, an intrinsic feature of the very technology which we have developed to enhance productivity."¹¹

In the twilight of technological enthusiasm, the environmental consequences of the technological lifestyle and a general disenchantment with the scientific world view would equal, and even surpass, the Vietnam War as the central focus of attention for American protesters. The ecology movement borrowed from the countercultures both their tactics and their values, particularly a unique set of new ethics that were part Native American and part the result of a strange side trip fueled by psychedelic enlightenment. The critics of various scientific and technological problems used the public's fear and doubt and built into the ecology movement a disillusionment with the values of science and technology, and in particular with the increasingly dire ramifications of "the price of progress." Many felt overwhelmed by bleak acknowledgment that, despite the triumph of individualism, few individuals felt powerful enough to do much of anything about the issues that most affected their lives, issues increasingly divorced from the decisions that mattered on a human level.

The powerlessness is the feeling which I share with so many of my neighbors that we cannot stop what in America is called the March of Progress, the cement trucks coming toward us any day from across the hill: the knowledge that our voices, our votes, our appeals, our petitions amount to near-nothing at a time when people have become accustomed to accepting the decisions of planners, experts and faraway powerful agencies. It is a sickening inward feeling that the essence of self-government is becoming more and more meaningless at the very time when the outward and legal forms of democracy are still kept up.¹²

*When logic and proportion have fallen softly dead*¹³

Despite an inability among Americans to agree on what constitutes progress, and how it was best accomplished, a widespread faith in progress nevertheless consistently infused and informed American social notions. Postwar American culture rested firmly on a foundation of technological progress. In both the vision and the phenomenal reality of technological enthusiasm *progress*, accomplished by a program of growth and change, had become the standard tool and universal goal of American society. One clear illustration of the decline in technological enthusiasm occurs in the changing rhetoric of progress. Like race, war, and politics, progress provides a lens through which larger issues can be clearly perceived.¹⁴

The substance of this specific style of progress arose from the Progressive ideology. To the Progressive mindset, the primary value of science and technology lay in their ability to bring about an unendingly higher standard of living and, within a democratic context, provide that standard in varying degrees to everyone, thus generating ever greater happiness and goodness in society. Standards of living did indeed improve throughout the century by any objective measurement, and that success brought about a widespread belief in the soundness of this approach, to the extent that it became a social standard and a pillar of America's national faith. In speeches, advertising, and editorial pronouncements, the American Establishment chanted a mantra of growth, development, and progress while contemplating an increasingly intricate mandala of gadgets.¹⁵

Progress lay at the heart of the promise of science and technology, and no other single topic so infused the national debate. Progress appeared at the knottiest juncture of every national problem, particularly where the goals and assessment of that progress were concerned. In the sixties, the emerging social conflict centered on the means and ends of progress, tenets so obvious to the early Progressives that they never felt the need to state them and so intangible to their postwar counterparts that they consistently failed to articulate them.¹⁶

By examining the shifting notions of progress and the general breakdown in technological enthusiasm, at least a few of the more confusing dilemmas of the decade can be confronted. There is no doubt that, as the Temptations harmonized, the world was "a ball of confusion," and that confusion has permeated many of the histories of the period which fail to adequately explain the contradictory nature of the times. By relying on the labels that various groups tagged themselves with, most sixties historiography is caught in a series of apparent problems. This inconsistency deserves thorough explanation, as such policies created a national government that, whether labeled liberal or conservative, advocated constant dynamic innovation with the intended and professed goal of propelling sweeping social shifts.¹⁷

On one hand, self-styled conservatives, members of the "establishment," understood themselves to be the guardians of the American heritage, but as a group they held to a truncated vision of that heritage, one that, not coincidentally,

rarely looked back further than the birth of technological enthusiasm. The mythologies of American greatness embraced by the postwar American establishment culture receded only as far as the modern industrial age and the beginnings of Progressive ideology. It was a vision of American history that encompassed only industrial grandeur. It was Carnegie's steel mills, Morgan's financial empires, and Edison's invention factory, and not the pastoral ideal of the early nation. The modern American legend embraced electricity over Emerson and favored industrial capitalism over Jefferson's agrarian democracy as its preferred end. In aligning themselves with this vision of progress, America's conservatives intentionally took on a commitment to the new rather than to tradition. This strange alignment deeply affected conservatives, leaving them in the conflicting roles of responsible agents for change in their roles as executives, managers, developers, and salesmen, and the standard-bearers of a traditional values backlash as churchmen, VFW, and American Legion members, and most of all as parents. The Establishment pursued this course despite the fact that, as conservative elements in society and politics, they often deeply resented, and frequently sought to stifle, the results of the very changes they originated and promoted. This is a historical problem that traditional explanations fail to illuminate. William O'Neill remarked on this basic inconsistency, noting that "conservatives were against change and in favor of what caused it," but he too failed to explain the origins of this conundrum,

nor did he deeply examine the profound ramifications of this unique form of mass cognitive dissonance.¹⁸

Nor was it just the establishment, politicians, and parents that were confused. Similar conflicts bedeviled the "New Left" student protesters, whose original goals also were wildly inconsistent with their public perception. Despite the best efforts of detractors and advocates alike to tie the New Left to older American socialistic and communistic movements, the students consistently refused to comply. The students in "the movement" treated their elders in "the struggle" with a thin range of expressions that ran the gamut from bored indifference to outright contempt and hostility. They cared even less for the traditional politics of the left, their arrogance and antipathy towards the labor movement and unions being only the most glaring example. What these histories fail to explain was that, even though conservatives openly detested the student protesters, the left's main battles were waged against an "establishment" whose political orientation was liberal and socially progressive as a matter of course.¹⁹

Even a cursory examination of the social revolution the students sought to promote must show that the changes it demanded were best labeled as retrograde. The Establishment in Berkeley embodied the progressive ideals of growth and change, not the radicals. The powerful head of the University of California at Berkeley, Clark Kerr, and not radical student leader Mario Savio argued that new and different were *de facto* better. In Berkeley and on the campuses of the

multiversities, the students encountered not a stodgy, musty, hidebound institution, but a brazenly new operation, one far removed from any nostalgic picture of college life that they might once have held. The students fought an ineffective counterrevolution against the modern university and the postwar realities of its operation. If *revolution* implies turning over, the student movement sought rather to turn *back*, to move away from the bold innovation of the multiversity and return to a much older vision of higher education, closer to world of Bedtime for Bonzo than the future governor of California ever realized. Throughout this turmoil, the guardians of the Western scholastic tradition attempted to defend the massive changes underway at the schools they governed, alterations they themselves had instituted. Changes which, among other calamities, stripped them of the very authority they now desperately needed in order to maintain some modicum of control.²⁰

Traditional American social and political divisions hardly do justice to the very real inconsistencies surging through postwar America, and there was little or no traditional explanation for what followed and eventually supplanted the student movement, the countercultures of the 1960s. Not identifiable as right or left by any previous definition or framework they were, in fact, not a political but a social and (as the name implies) cultural reaction to the Progressive establishment. They revolted against the omnipresent reality of a technologically-based lifestyle, an existence once exalted as utopian. Arising specifically from the postwar generation, the baby boomers, the new humanist countercultures devoted themselves to all that

Technological Man had minimized for the sake of efficiency: nature, emotion, intensity of personal relationships, fantasy, the exploration and expansion of consciousness, the radical reform of existing institutions, and the furtherance of naturally human as opposed to purely technical values. In general, the countercultural dissatisfaction with the Progressive viewpoint was poised halfway between the Berkeley Free Speech movement's attempt to stop the machine by "throwing their bodies on it" and the hippies' outright rejection of it by attempting to "turn on, tune in, and drop out."²¹

Strong, sustained attacks on the subtler, internal values that held the system together were also raised during the sixties. Questions about the price of progress, both in its creation and its results, were propelled by specific events as cascading failures of technology, science, and the large systems they created began to undermine individual projects as well as general values and social notions. As the sixties advanced, science and technology, and their handmaidens production, invention and management, seemed increasingly unable to produce their promised results. To the American public the gleaming technological heaven-on-earth they had been sold looked much less appealing up close than it had from afar.

Because technological enthusiasm had become so intertwined with the cultural order, attacks on technological systems and values served to undermine the system as a whole and vice versa. American society in the 1960s was affected deeply by the erosion of several of these fundamental social and cultural notions.

As technology and science were discredited by increasing social criticism, the proponents of a wide variety of alternatives rushed to fill the void left by technological enthusiasm's demise. Others simply lost faith in the future in general. The concept of progress appeared contradictory, the future bleak. The overall attitude was best summarized by a writer who conveyed the "gloomy litany" of the events and rhetoric of the previous decade, recalling a piece of 1970 California restroom graffiti that read, "the future's not what it used to be."²²

CHAPTER 1

IMPENDING APOCALYPSE

The Sputnik Crisis: *Everyone's gone to the moon.*²³

Despite the detonation of two generations of atomic bombs by the Soviet Union in the late forties and early fifties, Americans in early 1957 generally felt secure in their nation's overall technological competence and scientific superiority. This comfortable mixture of arrogance and conceit emerged from several distinct considerations, not the least of which was the truth of the matter. The Soviet Union's failure to develop an intercontinental missile system for its nuclear weapons that could directly and unequivocally threaten the United States kept Americans complacent. Domestically, a culture of abundance and affluence discouraged dissent. Indeed, by 1957, social conditions had reached such a static state that some debated "The End of Ideology" in America. Lastly, a mania for secrecy on the part of the military, described by one well-known writer as a "fetish," prevented the acquisition of knowledge needed for full public debate. Events, like the Soviet testing of a hydrogen bomb raised apprehensions, and concerns were expressed about the atomic age, but complacency generally held sway throughout most of 1957.²⁴

On Friday, October 4th, The national's complacency ended abruptly with the Soviet Union's launch of Sputnik, a small artificial satellite about "the size of a beach ball." Sputnik delivered a body blow that effectively penetrated layers of

nationally held notions. In its wake, Americans, ascertaining the profound consequences of the launch, scrutinized national priorities, leadership, schools, and consumerism in order to ascertain the root cause of the American defeat in the race to space. While this soul-searching progressed, the launch of another satellite, Sputnik II, added the "drama of an orbiting dog" to the public debate. "Muttnik" advanced the possibility of "further Soviet excursions into space" and demonstrated clear Soviet superiority to those who hoped the first launch proved irreproducible blind luck or simply some sort of small American oversight.²⁵

Together, the launches triggered an avalanche of anxiety for the American people. Time found the first launch a frightening combination of "dazzling technology and cutthroat politics," an event that "represented an epochal threat to the free world." The news of the week, simply stated, was "apocalyptic." The press sternly warned that "the Soviets were making giant strides with new weapons." The voices of commentators, many already shrill, approached hysteria. Science and technology's fall from grace began with the mainstream adoption of these apocalyptic visions and a widespread disillusionment resulting from the United States being caught "blissfully unaware" by these Russian efforts.²⁶

A plethora of commentators and publications raced to cover every angle of the Soviet space triumph, reinforcing the impression that the United States had lost its technological edge. Ironically the journalistic campaign of reactionary misinformation elevated Soviet accomplishments far beyond their real, immediate

significance, casting doubt on America's long-range efforts. Though technically incorrect to categorize the press coverage as lies, it did generate and disseminate a great deal of incorrect assessment and faulty analysis that, at the very least, proved extremely misleading.²⁷

This fear continued to mount following the Sputnik launches and the subsequent manned flight of Yuri Gagarin, all of which were accompanied by detailed coverage of American shortcomings and incompetence. One historian noted: "Americans also felt humiliated as they read of reports of foreign journalists claiming the USSR had overtaken the United States," but no one needed to go as far as le Monde or Isvestia to encounter a constant litany of American failures or overt signs of "our national fallibility," as The New Republic put it. Closer to home, Newsweek described the flights as "defeat in three fields: In pure science, in practical know-how, and in psychological cold war." Presumably all three defeats were of equal importance, as American predominance in research, application, and public relations suddenly and clearly lagged. The image projected from the Sputnik debate was of America losing its technological edge overnight.²⁸

Sputnik's repercussions created a "crisis of confidence" that permeated American culture. Political impact was sharp and swift, particularly in the White House and Department of Defense. Dwight D. Eisenhower, widely perceived as the very essence of stable governing by playing on his kindly grandfather image, suddenly seemed to be old and out of touch. One writer, gravely disappointed with

the administration's initial response, opined that Eisenhower ranked with the era's leading example of presidential incompetence, declaring the statements of the administration as "deadly reminiscent of poor, dear Herbert Hoover in 1930."²⁹

True, the initial reaction of the Eisenhower Administration, aptly labeled "tepid" by one magazine, was to dismiss Sputnik as unimportant. The president's knowledge of the real goals and true progress of the United States aeronautics programs assured him, as did his advisors, that Russia's launch was a "neat technological trick," one with modest scientific payback for the Soviet Union but few serious defense implications for the United States. Without publicly giving actual reasons why he felt so, Ike appeared sanguine in the face of this threat, stating that the launch of Sputnik failed to raise his apprehensions "one iota."³⁰

Toasting the Queen of England a few days after the launch, the president proclaimed the free world to be so far ahead of Russian scientific accomplishment that any comparison was "ridiculous" and that, in any event, there existed little need to "grow hysterical" about the satellite. Ike then took his annual ten-day November golf holiday in Augusta, Georgia, meeting with some criticism for his lackadaisical performance in the face of the grave risk the Soviet accomplishment appeared to pose. Eisenhower, for the first time in his presidency, profoundly misread the American public who, despite his reassurances, had grown hysterical.³¹

The one solid and realistically based reason for this growing public fear lay in Russia's apparent lead in the development of intercontinental ballistic missiles, the

preferred delivery platform for nuclear weapons. Newsweek stated that the most important "meaning" attached to the satellite lay in its "dramatic evidence to underscore [the Soviet Union's] claims of having test-fired several 5,000 mile ICBM's." One commentator lamented a mere ten days after Sputnik that "one watches and waits - till now in vain - for the American response to the Soviet economic, scientific and technological challenge."³²

Another concern, voiced largely by the defense industry, was a pressing need for more basic research. Such a belief fit easily into the Progressive notion that more is usually better and initial failure could always be overcome with more hard work. In what the publication described as "a storm of criticism," Time quoted one unnamed defense contractor who ventured, in a manner echoed frequently in years to come under a number of different circumstances, that "the basic reason we're behind the Russians is that we haven't gone all out." The speaker blamed this shortcoming largely on the "casual attitude" of former Secretary of Defense Charlie Wilson, who frequently scorned demands by defense contractors and the scientific community for expanded funding for basic research by responding "basic research is when you don't know what you're doing," or that basic research "is about what makes grass green and fried potatoes brown." Like Eisenhower, Wilson cautioned against funding solutions that only exacerbated the public's fear but, as his retirement and replacement occurred during the crisis, his caution received little attention.³³

A multitude of other solutions and a sudden bumper crop of experts abounded in the press and throughout the country, as the director of Project Vanguard noted the "disgraceful spectacles" created by "grown men cavorting about the countryside from space flight meetings to symposia, pouring out a maelstrom of breast-beating, half-baked options and forecasts." Calls arose for America to appoint a "missile czar" or create a rocket-science centered Manhattan Project. Either way, Big Solutions whether Big Science or Big Government ruled the day. (Such a reaction, by itself, does not suggest anything unique. Postwar America frequently threw large sums of federal money at a problem, the standard response to every challenge.) Big money crash programs with stupendous breakthroughs or scientific revolutions as their goal had "won" the last war, so why not the next one?³⁴

What stands as unique was the rush to implement such programs over the repeated objections of the administration. Sputnik's clarion call for increased government spending, both on basic research and applied development, dramatically reordered budgetary priorities despite the Eisenhower Administration's steadfast attempts to hold the line. These demands for substantial support for the scientific community date largely from the Bush thesis, and reached a crescendo following the Sputnik launch, notwithstanding the fact that such spending already flowed at its historically highest level, peacetime or wartime. One commentator speculated the administration's real plan aimed to meet any Russian attack "on the shore with a balanced budget." The fact that Eisenhower quickly found himself

overruled underscores both the level of public concern and the growing power of the vested interests in the defense establishment. Budgetary constraints and interservice rivalry both came under heavy attack and, though the imbedded calcification of the military proved capable of withstanding the atomic shock wave, the budget did not fare as well, and the United States aggressively stepped up the most expensive and massive arms program in history.³⁵

This response proved particularly ineffective. In fact, many commentators believed that duplication of efforts and the repeated creation of redundant layers of bureaucratic management were in large part responsible for America's technological shortcomings in the first place. The creation of additional committees and government agencies to administer and oversee all this freshly flowing money resulted in yet more proposed solutions and overlapping of responsibilities. No less an authority than Vannevar Bush stated that the one thing we needed to "catch up to the Russians" was "unified military planning," and cautioned against creating more agencies and projects: "This country is too prone to try to solve everything by creating another agency or board."³⁶

Fear Awakens Dissent: *One push of a button / And a shot the world wide / And you never ask questions / When God's on your side.*³⁷

Had its effects remained a political argument centering on defense issues, basic budgetary considerations at that an all out attack on technology would not have occurred, but Sputnik's fallout quickly spread far beyond the political arena. As one commentator noted, "a national emergency is always a playground for

opportunists." The launches quickly emerged as an icon for a problem so severe and all encompassing that only the deepest and most penetrating review of each and every aspect of American society and culture would suffice. But it was in the areas of national notions and perceptions about technology that the most profound questions and issues arose. Time decreed that the launch demanded no less than a total "reexamination of free-world technological progress." To the degree that the United States depended on technology to both define and produce its particular brand of progress, both the society and the culture became vulnerable to a redefinition of progress. Specifically, technological enthusiasm depended on a good and benevolent technology, the perception of technology as a threat undermined those notions.³⁸

Sputnik portended a world where the achievements of science and technology were no longer automatically hailed as progress or met with instant acclaim, but rather produced an escalating mixture of fear, anxiety, and hostility. Indeed, Newsweek found little to celebrate in the beginnings of "Man's Awesome Adventure" since this achievement originated in the minds of "the controlled scientists of a despotic state." Time, not to be outdone in the hyperbole department, crowned Sputnik a "Red triumph - over nearly all of the inhabited earth." News accounts frequently stressed the implied deadliness of the Sputnik launches. One quoted a leading engineer's matter-of-fact appraisal that unless we catch up, "we're dead." By the media's own accounts "the news brought simple

fear," providing an "ominous reminder" of what "could prove a turning point in human history."³⁹

Sputnik frightened America, launched as it was by a "state which had already given the word 'satellite' the implications of ruthless servitude." The "crushers of Hungary" now held power "whose implications no man could measure." America had lost its special "corner on technological knowledge," the pundits cautioned. Political leaders and other high-ranking government officials entered the public relations fray with guns blazing, issuing public statements that exacerbated the fears and drove the panic to greater levels. Following Sputnik, Senator Henry Jackson demanded that the nation proclaim a "week of shame and danger." In a manner Time characterized as "frenzied," Senator Stuart Symington publicly called for a special session of Congress.

Joining in the chorus of panic, a Newsweek article ceded to the Russian "conquest of space," a foregone conclusion apparently, "all the mastery that it implies in the affairs of men on earth." The news of Sputnik left the "American people numbed by the realization that our security is only second best." More to the bitter point, "for the first time in its history, the Western world finds itself mortally in danger from the East." One might almost add "again," as Time did when it noted "the continent stands today almost as naked as it did in 1946," a pointed reference to Pearl Harbor understood well by the generations which experienced it. Time underscored that concern by noting that the Colorado Springs based North

American Radar Defense (NORAD) system had been rendered virtually obsolete by Sputnik, a remarkable fact because it had been state-of-the-art up to that very moment, but there was no doubt of "the cold fact: it cannot detect missiles."⁴⁰

"Frenzied" described not only calls for special sessions of Congress but also the pace of events themselves. The national tempo was disruptive and generated its own discontent with the "modern a go-go world" represented by Sputnik and the resulting race for the moon. Even people of good will and high levels of enthusiasm for technological progress wished for a slightly slower pace, one that at least allowed for some digestion and accommodation of change. The perceived slippage of American power and security was not gradual but happened literally overnight, and from an apex that had been dizzying in and of itself. Americans struggled with the knowledge that the nation's scientific and technical institutions, lofty and unchallenged as little as a week before, were now obviously second rate, forced to play "catch up" to close an oft-cited four-to-five-year gap, a figure based on paltry information, outright speculation, and guesswork. Even when shortened, the public was told, "we must assume that the Russians will stay well ahead of us in the space contest until well into the 1960's."⁴¹

Despite Eisenhower's cautions that without information on the accuracy of the Russian effort, the defense implications could not be fully appraised, this fear and panic was spread by the nation's scientists, intellectuals, and other lofty thinkers, changing the debate from the strictly political to one that encompassed a

much broader critique of American cultural notions. A corps of vested interests, including a familiar group of professional pessimists, began a relentless drumbeat on the general theme of American inadequacy. Edward Teller, known as "The Father of the H-bomb," pointedly cited his constant warnings before the launch that the United States faced a diminishing capacity relative to Soviet science. The press constantly warned the American public that the USSR was not going to rest. The United States lagged far behind, while "the moon may not be out of Russia's reach." This prospect was typified by one of Teller's more absurd speculations over the possibility of Russia sending a rocket loaded with red paint to crash on the moon, thus leaving a permanent mark in the heavens attesting to America's technical incompetence.⁴²

One of America's leading social critics issued a long (published in two parts) condemnation of the nation's failures. Hans J. Morgenthau's mid-December think piece, entitled "The Decline of America," assessed diminishing American power in a manner that was both "sweeping and gloomy." Spinning an argument laced with fear and doubt, Morgenthau opined that current national problems, for which Sputnik functioned as an archetype, demonstrated a systemic "crisis of American power, and of the American system of government itself." The Sputnik launches not only "dimmed both the prestige and material power" of the nation, but illustrated that the Soviet Union was "now superior to the United States in almost every department of warfare." To Morgenthau, Sputnik proved more than just a stinging loss, it was a

defeat so overwhelming the nation might not ever recover. The United States faced a "predicament, diminishing our greatness and impairing the military ramparts without which not only the greatness but the very existence of America will become a recollection of history."⁴³

Such speculations fed a larger doubt about the idea of "America" writ large. In a subtler and less documented way, Sputnik and the commentary that followed cast doubt on fundamental assumptions and ideals. How could one be enthusiastic about a technology that set up the doomsday of Morgenthau's vision, where the United States faced "the probable consequences of all-out war ... tantamount to its ability to survive as a civilized society." "Technological excellence," identified as one of the four qualities by which the world judged American supremacy, was rendered by Sputnik "impaired, and in the eyes of the world, destroyed." Sputnik, far from being a mere satellite launch, demonstrated "American technological inferiority," signaling a loss of face, prestige, and eventually of power.⁴⁴

Morgenthau did not consider in the article, focused as he was on the international public relations war, that technological excellence was measured not just by how the world judged America, but also by how America judged itself. Newsweek drew attention to "the dawning realization that supposedly backward Russia had somehow beaten the U.S. at its own game of science, technology, and know-how." The new missile czar, James F. Killian remarked in his memoir's that America "had no serious rival" in the area of "technological capacity." This belief

was "so fundamental that it was almost heresy to question it" before the launch. A French diplomat offered the following reason for the profound effect of Sputnik in terms slightly more poetic than Killian's.

Of all the nations in the world this one more than any was conditioned by the flood of science fiction. Only in America do children wear space suits in the streets. Now it's somebody else who has delivered the goods. That's why the shock is so great.⁴⁵

For Morgenthau, Sputnik cast doubts so deep that they undermined the public's ability to support social and cultural institutions that could no longer be trusted to win, or even to tell the simple truth. Sounding more like a disenchanting sixties radical than the head of a prestigious think tank, Morgenthau noted that, in the current situation of "not knowing and unable to rely on official statements, one must doubt and can take nothing for granted."⁴⁶

A growing negative image of science naturally had an impact upon the public image of the scientists themselves, so the loss of enthusiasm was not restricted to machines but also extended to the men who created them. A group of mental health experts noted the shifting image of science and technology, commenting on how the atomic age "aroused 'irrational fears'" that date to "the oldest myths and legends shared by mankind since the dawn of history."

Yet today, millions of people throughout the world have come to have a strikingly different image of the atomic scientist and his work. To them he is a Pandora prying into forbidden boxes, a Salem witch or a Dr. Faustus in league with the devil, a mad scientist bent on destroying the world. His persistent research into the structure of the atom is viewed as certain to bring down the terrible wrath of the gods.

This climate of fear permeated the Christmas message in Newsweek, which trumpeted a banner headline declaring "Fear not," but reviled a strange mixture of "fear and anxiety" so deep and profound that they "threaten to blight the bright optimism of American life." All three of the leading religious figures interviewed for the article stressed this fearful mood, ascribing it to Sputnik and quoting prominent Protestant theologian Reinhold Niebur, who saw Sputnik as a "symbol of the fact that we have lost a superiority we thought we had."

A deeper sense of loss permeated the coverage. The presumed and frequently touted infinite capacity for expansion promised by both scientific investigators and technologic developments suddenly became vulnerable to a single critical thought which underlay much of the resulting discontent and protest: that of limits. Sputnik prompted among Americans "the depressing suspicion we could go no further."⁴⁷

Doubt and fear spread to consumerism, and the consumer society quickly fell into some disrepute. Newsweek attacked the consumer mentality, exclaiming, "The U.S. may have more cars and washing machines and toasters, but in terms of the stuff with which wars are won and ideologies imposed, the nation must begin to view Russia as a power with a proven, frightening potential." These critiques represented a clear shift in attitude from previously held assertions, such as those of the legendary Kitchen Debate, where the expressed belief of the United States

was that, given free choice, our system would be chosen by, not imposed upon, the world.⁴⁸

Despite that criticism, the launch of Sputnik revealed that consumerism was one area of American society and culture with boundless ability to accentuate the positive. Sputnik may have been a Russian effort, but the marketing of the space race was All-American. Space toys proved to be the hot items for Christmas, and Time proclaimed 1957 "the year of the scientific toy." While the army may have had problems getting their missiles airborne, Macy's windows were quickly converted to the space race. The American commercial establishment worked overtime and "turned the satellite's ethereal beep-beep into the merry jingle-jingle of hard-cash sales." The Ideal, Revell and Marx toy companies projected sales in the hundreds of thousands of units for their respective toy satellite launchers. These items were closely followed in sales by other scientific items, notably chemistry sets and microscopes. Rich's in Atlanta planned a whole "scientific center," while others added "space sections" in their toy departments or at least brought Santa in on a rocket-powered sled. 1958 would prove an even bigger year, though "those lucky enough to have a 'spacenik' of any kind" were "cashing in" in 1957. Changing tastes in toys and Christmas gifts offer only a glimpse of Sputnik's impact on American youth, yet they are not a trivial topic. Toys are made to teach, and a generation raised with microscopes and telescopes learns to see the universe, both in the micro- and macrocosm, in a very different way. Academically, it may have

only amounted to a smattering of information, or a broad but shallow knowledge, but the lessons imparted by these toys were acquired early and substantially differently from those of previous generations. This emphasis in science and technology was not confined to toys, but signaled a much deeper cultural permeation.⁴⁹

Though no actual hard data linked Sputnik to the general performance of Soviet schoolchildren, the satellite nonetheless threw a "chill into Americans about education." The "beep, beep" of Sputnik announced that America was no longer winning the race to technological supremacy; the evidence flew overhead, just out of reach, taunting us. One author noted that Soviet schools graduated "roughly twice as many new scientists and engineers as we are. The result? Look up in the Sky!" Beyond the political fallout, the primary target of criticism resulting from the Sputnik controversy was the military or the American research enterprise, but rather the American school system. Curriculum reform took on the full range of American education, from kindergarten through graduate school.⁵⁰

One publication noted how "engineers lashed out at the slovenly ways of the American high school and college." In their estimation, the "harsh fact" was that our schools were not "preparing youngsters for the entrance requirements which must be maintained by our institutions training scientists and engineers." So what were American children doing in school? According to Rear Admiral H. G. Rickover, American students were not even doing an hour's worth of "uninterrupted serious work." Instead, students were spending time on "assemblies, errands to be run,

trips to survey various adult activities, checking on the fire department or the bakery and much time goes into preparing the school play."⁵¹

Few heeded the warnings of MIT professor Norbert Weiner, who cautioned that all this increased attention to science exemplified little more than "a growing attitude of worship of the gadget," one that could eventually destroy the real key to scientific discovery, as Weiner saw it: "the individual scholar working alone." Such sane and sober advice fell on unsympathetic ears, and sank without much notice in the wake of the resulting crisis. Sputnik appeared to be a triumph of Soviet "brains, skill and energy," and the American school system was found lacking in its ability to produce comparable citizens. As early as October 21, 1957, Time wrote, "never before has the U.S. scientist been so important to government and industry."⁵²

"Ivan and Natasha" were used as examples of fictional students studying English in Russian schools, with the clear implication that they were better at languages than their American counterparts; "most of them [American students] will not even speak English very well", said Ivan laughing." But the deeper crisis in scientific education was underscored by the Soviet teacher's reply, "to say nothing about the blueprints." American parents concurred, at least in Tacoma, Washington, where a special Adastra School (rough translation, "the sky is the limit") was started by parents of children with a 135 or higher IQ level, whose goal was to shoot for the stars.⁵³

Eisenhower, bowing to public pressure, finally addressed two problems as arising from Sputnik, "scientific education" and "basic research." Even Eisenhower placed greater value on educational reform than he did on actual research. In his view, educational issues formed "the most critical problem of all." In order to boldly meet the challenge the Russian launches presented, Eisenhower proposed to focus on high school and college education. First, nationwide testing of all high school students would help identify those who possessed scientific aptitude, followed by incentives for those students to enter science and engineering fields. Further, "good-quality teaching" of mathematics and the sciences would be provided for through moneys for additional laboratory facilities, as well as new fellowships targeted to increase the output of teachers. Dr. Alan Waterman, director of the National Science Foundation (NSF), concurred with Eisenhower's plan, envisioning a total restructuring of the American school system. Such sweeping changes were required because the training of scientists and engineers could not be "done in a vacuum" and, thanks to Sputnik, "America now needed a strong educational system with adequate facilities and competent teachers in all subjects from the elementary grades on up."⁵⁴

To further this goal, Eisenhower appointed a special assistant to the president for science, MIT's George Killian, described as "one of the country's leading scientific statesmen," to act as a mini-czar. In his first public speech, Killian stated "at this point in the evolution of our schools the highest priority should be

given to intellectually gifted young people." He rapidly narrowed the entire Sputnik issue to an exclusively educational focus, stressing that fundamental changes in the school curriculum would be needed to combat our "technological shortcomings." Essentially, the federal government got into the business of education in order to "speed up the training of young scientists."⁵⁵

As a direct consequence of the Sputnik launch, massive changes in the educational system followed in curriculum, funding, and federal oversight. As early as 1958, the Eisenhower Administration increased funding of the U.S. Office of Education to \$325 million, and increased funds for the National Science Foundation from \$40 million to \$140 million, with most of the increase intended for scientific education. The culmination of this effort was the 1958 Defense Education Act, which followed later that same year.⁵⁶

Not all concurred with these actions. The head of the National Science Foundation questioned the effectiveness of any sort of "crash" program designed solely to produce more scientists. He was joined by the secretary of Health, Education and Welfare, who cautioned against setting up science as an *uber-curriculum* above and isolated from the "broad community of educational interests." HEW head Marion Folsom protested the use of special funding for the education for scientists to the exclusion of other disciplines. This new curriculum war embraced a monolithic notion, as the sudden exigency which had emerged demanded "more and better science" for all students, "not just those who plan a

career in science and engineering." Across the board, America needed "to get better students, as well as better teachers" into every "valid element" of the "educational structure." Since science alone could not win the effort, victory was needed on all fronts simultaneously.⁵⁷

Nor was this a simple matter of reforming curriculum; America needed a whole new social structure for science and scientists. Edward Teller criticized the American system, where scientists and science teachers were "relativity underpaid," and worse, "under respected," predicting that, within ten years, "the best scientists in the world would come from Russia." This was an interesting concept, considering that most of the leaders on the rocket projects both here and in the Soviet Union were, like Teller, from Germany or German-educated. One comedian at the time quipped, "Their Nazi scientists were better than our Nazi scientists." More revealing was Tellers observation that America provided "few incentives for the brightest youngsters to take up scientific careers." In stark contrast to the appalling American situation, Russian society treated "science as a religion." The New Republic simply referred to it as "the triumph of the egghead," and writer Gerald W. Johnson argued the case to "raise the prestige of learning," repeatedly citing the example of professors in France being saluted by the police when they crossed the street.⁵⁸

A strong case against this line of thought was made by Karl Shapiro, who wondered why America suddenly needed to "Out-Russia Russia." Terming the

changes "a new revolution" it was, nonetheless, a revolution "boring and dreary beyond endurance." Shapiro noted how the changes were "forced upon us from the outside, for the wrong reasons, and by the most perilous elements in modern society." He gloomily assessed the end result as "the end of all humanistic culture throughout the world."⁵⁹

Shapiro's critique of the post-Sputnik changes in education reviled the triumph of scientific education, ending the study of humanities in general and enslaving people to the "the provincialism of the scientific mind." In this view, these critics of American education longed for "an artless world, a world in which feeling is reserved for state occasions and wars, the scientists need not bother their heads about distinctions between good and evil, beautiful and ugly, physical and metaphysical, natural and supernatural." Shapiro left little doubt that the result would be "a first step toward scientific government" which would proceed gut the schools of "literature and the arts" and conform to Rickover's complaints. A scientific education, correctly labeled a "retreat into the Sciences" by those who advocated it, would make our students just like those in the Soviet Union, where "most students were confident that science would ultimately provide all the answers to all the questions that could be meaningfully asked," and where the guiding philosophy was based on an "attitude that everything that could not be measured and quantified was bunk."⁶⁰

This massive criticism of the American educational system and the near veneration of its Soviet counterpart opened up the schools to critiques from other quarters. Several writers questioned the competence of our teachers and the worth of our schools. Sputnik's challenge to the schools proved short lived, but criticism of the educational system and the subsequent urge to tinker with it permeated the sixties. Early in the decade, Time recanted some of its earlier criticism: "Sputnik I triggered a storm of criticism for U.S. education, which was accused of turning out used-car dealers and basketball players instead of scientists. Indeed, Soviet education was even touted as a model that the U.S. should try to follow." By 1961 even Time was forced to admit, "that attitude looked pretty silly."⁶¹

*Some time ago a crazy dream came to me / I dreamt I was walkin' into World War Three.*⁶²

The decline of technological enthusiasm in America arose from a deep and realistic fear of an impending nuclear apocalypse designed by science and realized through technological applications. Every age, society, and culture experiences such fears, but the atomic age featured several new and unique components. Nuclear Armageddon threatened not just humanity, but the continued existence of all life on Earth, not by supernatural forces or inexorable acts of God, but by human design and implementation. The basis for this horrific vision were the same scientific principles and rational management whose optimistic promises provided the foundation for technological enthusiasm in the first place.

This particular critique of nuclear weapons (and, by implication, both direct and indirect critique of the people and technologies that created and ran them) reached popular audiences through a number of cultural avenues, movies and books in particular, as "thinking the unthinkable" became a cottage industry for everyone from academic Herman Kahn to film maker Stanley Kubrick. A market existed for Armageddon, as these artistic works and the wide range of war and scientific toys aptly demonstrated. Two successful critiques, Fail-Safe and Dr. Strangelove, dealt with roughly similar scenarios of accidental nuclear holocausts. The works harshly denounced the current state of Progress while reinforcing the image of the fragile state of human existence in a world of nuclear weapons and the larger idea of technologies increasingly removed from human control. Their clear, underlying message depicted a surreal and irrational end point of such progress, a world where technology, logic, and planning dehumanized the people, governments, and cultures that employed them.⁶³

All of these lavish, expensive, and complex preparations for nuclear war could be summed up in two words: The Bomb. The overarching image of the day, The Bomb became the singular symbol of the nuclear era, encompassing all the dread, worry, and fear of the modern age. The Bomb as a symbol provided a wide-ranging and extremely flexible iconography for a modern Armageddon. This new war did not necessitate huge armies in the field: It needed only a finger on The

Button. The incredible quickness of modern war, allegedly one push of a button away, created a new, modern fear, the fear of an accidental war.⁶⁴

Had this technological anxiety remained confined to the debate about weapons and defense, its effects might have been limited, but fears about technology's usurpation of culture, its eclipsing of democratic values, and its dehumanizing nature based on fear of impending apocalypse first carried over to other atomic issues (particularly nuclear power) and gradually spread to most discussions of the problems of the day. The Sputnik launches created a platform for the Radical critique, as it demonstrated the failure of the progressive promise. With Sputnik Americans began to question the technological premises and institutions of the age, as both the price of such achievements and their ultimate dead end became apparent.

Apocalyptic fears spread as doubts arose about the efficacy of science and technology. If a horror this large was produced in the name of freedom and liberty and even peace, might not other technological advances prove to be Trojan horses? Disillusionment with the price of progress led to doubt about the thinking of the experts who created, managed, and drove that progress. Conditions were perceived to be worse after solutions were implemented than they had been in the first place, with the new problems viewed as even larger, more complex, and more dangerous.

Concerns about nuclear technology expanded from the political arena to other aspects of American society where technology had made an impact, exaggerating the potential negative outcomes, limiting the range of possible solutions, and usually polarizing the debate in the process. Progress became tainted with a bitter pessimism. The price attached to progress via technology became onerous to many and gave impetus, urgency, and energy to countercultural movements. These sentiments coalesced around the atechnological attitudes and values that characterized the sixties reconceptualization of - and reconnection to - the natural world. A leading historian of the space race summed up Sputnik's greatest domestic achievement as the conversion of the Cold War into a total war extending into every aspect of American life.⁶⁵

CHAPTER 2

NUCLEARMITOPHOBIA

*Goodness, Gracious, Great Balls of Fire!*⁶⁶

A general feeling of gloom and doom spread over the beginning of the sixties decade. Time, though it sensed no concrete link between nuclear hysteria and the nation's growing mood of unease, still commented that in the modern age the "whole world has bad dreams." As a way of illustrating the decade's newfound anxiety Time, on the cover of the March 31, 1961, issue, featured a reprint of *The Scream* by the Norwegian painter Edvard Munch.⁶⁷

Even the ever optimistic industry spokesmen began to sound a bit strained. Dandridge Cole, identified as a "high-level" engineer with General Electric, argued at a meeting of the American Astronomical Society that "the best hope for humanity is to desert the earth entirely." Though he felt sanguine about the prospect, the grim reality imbedded in such a statement must have depressed many.⁶⁸

The fears that the Bomb symbolized permeated the culture, particularly children's culture, owing to the routine everyday nature of preparation for atomic war in the schools. While parents digested the implication of these new threats and worked to integrate them into their world view, their children grew up accepting it as a surrealistic, yet mundane, fact in their everyday lives. This manner of thinking was most evident in the routine nature of atomic drills, held in schools as part of the normal course of life, practiced with the regularity of fire drills. The school reform

campaign worked to instill the fear of atomic attack in the children, making Armageddon an accepted and inevitable eventuality.

Atomic fears occasionally bordered on hysteria, demonstrated by the recall of an A.C. Gilbert Company toy. Gilbert was a company widely praised for stimulating an interest in engineering among American boys through its popular Erector Sets. But Gilbert removed its Atomic Energy Science Kit from the market after publicly expressed fears that "boys would make atomic bombs," which, boys being boys, they no doubt attempted.⁶⁹

Public concern with the nuclear threat continued into the sixties, with grim stories frequently casting nuclear programs in a frightening light. Time reported that an explosion at the Atomic Energy Commission's (AEC) Idaho Falls test site killed three persons. Since this reactor was "equipped with every built-in safeguard, every 'fail-safe' device known to science," the explosion was hard to accept. "What went wrong with SL-1?" the headline slug demanded. Attributing the problem to an unexplained "runaway atomic reaction," Time grimly noted that because of radioactivity the bodies were buried at sea in lead-lined coffins.⁷⁰

As American faith in nuclear weapons evaporated so, too, did public regard for the scientists and technicians that put such weapons together. Moreover, the public at large seemed to be tiring of the ancillary "better life" discoveries that were usually a byproduct of nuclear research. "To public harassed by headlines, atom-age scientists sometimes seem little more than laboratory soldiers. H-bombs

and missiles explode out of their abstruse equations; the products of their most esoteric research are used to refine the practical arts of war."⁷¹

Americans "in the anxious atomic age" were constantly also reminded that "the normal human array of senses is no longer enough." As one way of demonstrating this, Time featured a development of the Oak Ridge National Labs, a "personal radiation monitor" about the size of a fountain pen which gave off a high-pitched chirp and flashed an orange neon light when it detected radiation. The device was only "slightly less complicated than the average pocket radio" and promised enhanced safety, though the one worker Time quoted soberly reflected that the primary use for such a warning was to tell us "when to run like hell."⁷²

The Sheltered Life: *Last night I was dreaming / I dreamed about the H-bomb / Well the bomb went off and I was caught / I was the only gal around / Well there were 13 men and me the only gal in town.*⁷³

The intense fear brought about by the marriage of space and atom was most clearly evidenced by "civil defense" planning, particularly the short-lived rush to build personal fallout shelters. Shelters had been a subject of some conversation and a modicum of planning since the end of the Second World War, but following the launch of Sputnik, the debate took on an aura of immediacy. Fallout shelters shifted civil defense from a widespread social program to an individual level. Family-sized bomb shelters brought the reality of nuclear war down to a mundane plane that evoked visions of apocalypse on an family level.⁷⁴

At the dawn of the atomic age, several commentators speculated that civilization faced a stark crossroads between a life above ground or one below it. One representative article, "Spires or Tombs?" made clear reference to the choice between aspiration and obliteration, between the splendor of cathedrals reaching for the heavens and the terror of the underground shelters, which could be little more than mass graves in the event of an all-out war. In many respects, no other event in the early sixties better illustrates the growing fear about the future than the bomb shelter program yet, with all the nostalgia about the early years of the decade as a time of lost innocence, the shelter program remains largely forgotten.⁷⁵

Prior to Sputnik, shelters attracted only moderate attention. A few organizations debated the efficacy of shelters and a smattering of articles were published, usually in specialty journals. For example, a debate raged briefly in architectural journals in the early 1950's, involving the best design methods and materials for the atomic age. The topic faded until the issue came to national attention at the decade's end. Until Sputnik, articles on shelters were listed in the Reader's Guide to Periodic Literature under "air raid shelters." With the increased hysteria about the possibility of atomic war after the launch the editors decided to change the heading "atomic bomb shelters." As America entered the atomic age, the number of articles written about shelters rose significantly. And, so too did the number of civil defense detractors raising their voices in opposition to them.⁷⁶

The public concern with civil defense escalated immediately after Sputnik. Edward Teller noted, even more grimly than he had intoned the decline in American science, the existence of a gap, one "even more pertinent to the day of H-bomb attack," a day which, to judge by the language chosen, he felt to be not merely possible, but probable, and even likely. The United States, Teller intoned, lacked sufficient underground shelters. Without shelters "deep enough to withstand the impact of the heaviest bombs," America would lose the capacity to "not only hurt an enemy that attacks us, but destroy him."⁷⁷

Embraced by both the public and the government as a home front, Victory Garden-flavored technological solution to the Russian menace, fallout shelters precipitated a crisis of morality that starkly illustrated the eroding effects of the Nuclear Age on traditionally held values. Shelters and the training and drilling for their eventual use were seen by some as the last gasp of a violent society, while others viewed them as the works of a society beyond redemption. Even the most rational planning for a nuclear attack took on an absurd character, with numbers of "acceptable" casualties being discussed with an air of surrealism. To those unfamiliar with nuclear planning the clean efficient modern system of war appeared totally irrational.

The crisis of civil defense, which blossomed in the media immediately following the launch of Sputnik, continued into the early years of the sixties, propelled by a domestic need to fulfill Kennedy's inaugural promise to "pay any

price, meet any hardship . . . to assure the survival and success of liberty." Shelter mania peaked in 1962, not coincidentally, as international tensions made the prospect of nuclear war seem more likely, if not inevitable, and international leaders made it seem imminent, from the grim days of the Berlin Crisis through the Cuban Missile Crisis of October 1962. The decline of shelters, precisely at the time of the most imminent atomic exchange, demonstrates both the decline of technological enthusiasm into a fatalistic resignation and the opening of a broader debate on the efficacy of technological solutions in general.⁷⁸

On the surface, protection of the American nuclear family from atomic attack suited several aspects of our national social character, particularly the individualistic suburban vision. The shelter program stressed individual self-reliance and appealed to middle-class domesticity by defining the family as the basic unit of American survival. The critical aspect of bomb shelters and the incessant training in their use was that they portended an ominous future for America's youth, one where atomic holocaust destruction was portrayed as imminent and basic survival was by no means assured. This of course was not the goal, merely the result. This imminent holocaust created a reservoir of apocalyptic images, themes and visions that would be drawn from repeatedly during the following decade in a wide variety of situations.⁷⁹

Though fear created, propelled, and would outlive the shelter fad, middle-class domestic values provided the standard sustaining image, a unique

version of bringing the war back home. Dad, mom, and the kids, listening to the radio or contentedly playing a board game while safe in their shelter, were frequently the centerpiece of popular articles and, in particular, of the photos of what a good shelter looked like. Designers, decorators, and art directors did their best to make shelters appear to be just another family room or den, although a somewhat cramped one, owing to the canned food stores stacked up against the wall. Obvious problems like sanitation were rarely addressed, or simply glossed over, which is to say that most of the technical problems attendant with surviving nuclear attack were left unattended. Unsolved, they were simply left hanging. Despite these apparent shortcomings, shelter displays graced state fairs, housing exhibits, and popular magazines. In planning to survive an atomic war America sought to preserve the basic elements of its middle-class, domestic way of life as much as it sought to protect the individual lives of middle-class citizens. The national goal sought to create the necessary prerequisites needed to survive, and thereby win, an all-out nuclear war.⁸⁰

Though preparations for civil defense were made prior to Sputnik, they lacked the urgency and, oddly, the comfort and glamour that the late fifties and early sixties efforts seemed to exude, though some of this aura was no doubt intended to dispel qualms about the exponentially extended stay that these nuclear-age shelters demanded. These early efforts were primarily technical in nature, where the post-Sputnik debate shifted away from purely technical issues, particularly as the

efforts and responsibility shifted from the society to the individual. Early in 1960, led in part by New York governor Nelson Rockefeller, who touted the issue in his unsuccessful campaign for the Republican presidential nomination, the bomb shelter and civil defense efforts took on a sense of imperative need. Everyone from Ann Landers to John F. Kennedy promoted the All-American goal of atomic self-reliance. Noted failures in governmental efforts spurred government programs to aid citizens in building private, individual family bomb shelters. Though it took a national effort to bring the country to the brink of nuclear destruction, apparently federal protection from said devastation was out of the question.⁸¹

By the summer of 1959, bomb shelter hysteria was in full bloom. The optimistic pitch increasingly received a pessimistic reaction, though not from major publications. Life featured a strangely enthusiastic human interest piece about a young Florida couple who spent their July honeymoon in a fourteen-by-eight-foot fallout shelter in Miami. Though this choice seemed to lack the traditional allure of Niagara Falls or the Poconos, the happy couple assured reporters, as they kissed before entering, that "fallout is fun." Stressing the routine, they stayed in the shelter for fourteen days, which the article termed the "crucial period of fallout danger." The newlyweds recounted that they did not experience any claustrophobia "till near the end," though the constant temperatures in the high 80s forced them to "dress lightly" for the duration. In this respect, at least, the couple followed the pattern of more pedestrian honeymoons. What appeared to be fun portended a grim future.⁸²

Time's cover story "The Sheltered Life" is perhaps the most perfect example of the attempt to make the surreal seem normal and routine. Time implied that bomb shelters were not merely a simple means to save your life, they were tools for preserving your entire way of life. Properly stocked and decorated, a shelter provided all the creature comforts of home, except outdoor recreation. Families might even grow closer through the shared experience of waiting out toxic radioactivity. Average Americans around the country, Time assured its readers, were living with The Bomb and actively planning for Armageddon.⁸³

"Living with The Bomb" represents the attempted normality of the thinking at the time. Leading experts like Virgil Couch, the industrial specialist at the Office of Civil Defense featured on the cover, pleaded with Americans to stand up and accept it "like smallpox vaccinations" and make bomb shelters "part of the normal way of life." In the same way that "the bathroom has moved inside" from the outhouse days, and "garages used to sit on the edge of the lot: now many garages have been built into the home. The next room to follow this pattern is the family fallout shelter." Indeed it was just another technological advance that added convenience to modern life. America needed to embrace the atomic as routine and "build it into the normal fabric of our lives." Americans proved up to the task in an amazing number of ways. And since the "federal government has no immediate plans to build new public shelters," they pretty much had to.⁸⁴

If the thought of living for two weeks, a frequently cited number, in a small box proved upsetting, one might take comfort in the knowledge that Lone Star Steel sold a \$2,500 (plus freight and installation) shelter that featured a "window painted on the wall," a shelter extra Time cheerfully termed "a nicety to gladden the heart of any claustrophobe." In true do-it-yourself style, Pat Smith of Salt Lake City was pictured painting a mural of an woodsy outdoor scene on the wall of her family's shelter. For that extra homey touch, the mural featured lace curtains, and the patio furniture in the background completed a scene almost like summer camp.⁸⁵

A lucrative market for post-Armageddon supplies developed and manufacturers and retailers sought to cash in. First aid kits were popular, as were air pumps and canned and preserved food. One operator of a Los Angeles survival store sold half his merchandise prior to his grand opening, zestfully declaring, "sandbags are a must." Regional customizations were available. Residents of New Orleans, for example, needed waterproof shelters, due to the high water table. Since a nuclear blast would destroy the levees, residents of the Crescent City should also equip their shelters with "conning towers to assure ventilation" and to provide for "surveillance of the outside." A well-prepared family might even have a burial bag, priced at fifty dollars, to provide for a death in the shelter. The bag "contains chemicals to keep odors down" and in a pinch, Time notes, it could "be used as a sleeping bag by the living." Burial bags were not the only dual use item,

the article also pointed out that sanitary napkins were handy because they could "double as bandages."⁸⁶

In suburban neighborhoods, the 'keeping up with the Joneses' approach to nuclear survival proved particularly popular. Because "residential fallout shelters are essential to the nation's total defense," a California promoter of new subdivisions in the San Fernando Valley promised to upgrade your \$29-31,000 home investment by adding a bomb shelter under the garage for only \$1,100 more. These shelters measured eight-by-ten-feet, with six inch walls, a steel ceiling and a hand-operated air pump. Properly stocked, the builder promised that a family of six could hold out for up to six weeks. Of the twenty-six buyers in the upscale Thousand Oaks development that were offered the option, twenty took it.⁸⁷

If individual fallout shelters seemed to excite middle-class citizens more than public shelters, it was in large part because there were well-founded reasons to doubt the ability of government (be it local, state or federal) to protect them in the event of an atomic attack. In in early 1960's, a much-maligned civil defense drill was staged in New York City that demonstrated both the legendary complacency of native New Yorkers and, far more problematic, the total inability of the Office of Civil Defense to protect the majority of them. The evacuation of Manhattan's population was not even attempted, but even a more modest drill presented problems which doomed the hopes of the planners. Not only was the drill met with overwhelming nonparticipation but, many who acknowledged the drill used the opportunity to

protest the very idea of civil defense. The New York drill portended a failure of planning and inability to cope with either the scope or the full measure of the problem.⁸⁸

Time again covered the growing hysteria in September 1961, noting that the new fear even had an official sounding name: "nucleomitophobia - fear of the atom," moving from fear of the bomb itself to a fear of all things nuclear and implying an even larger field of all things technological. The article found average Americans concerned "about their chances of survival." Proof of the rising concern was the ascent to best seller status of a thirty-two page booklet published by the Department of Defense, The Family Fallout Shelter, which had been averaging a quarter million copies a month and, in August, had skyrocketed to almost two and a half million copies. Time reported a wide variety of organizations planning for Armageddon by stocking survival supplies such as food, water, and other items, "chiefly morphine and burn medications," as a matter of routine.⁸⁹

Neighbors Shooting Neighbors: *Where black is the color / Where none is the number / Its a hard rain a'gonna fall*⁹⁰

One particular aspect of the debate clearly illustrates the challenge to values that accompanied the strange new atomic world. Even a cursory analysis points to a culture gone mad, the hollow victory of progress, and the creation of a hyper-rational world, where in the final analysis the most rational of choices seemed

bizarre, ludicrous, insane. In its stark simplicity, it perfectly illustrates the critique of the dehumanizing effect of technological advances.

A string of articles in late 1961 articulated many of the social and cultural issues raised by life with The Bomb. In August of that year Time, pursuing various story leads on shelters, interviewed several leading theologians for their collective insight on the issue. Time, of course, wrote briefly and concisely, and in this case at least, attempted only the most superficial analysis. Jesuit L. C. McHugh, however, felt the topic demanded serious, in-depth treatment and analysis and, as associate editor of America, the largest circulation Catholic weekly in the United States, he possessed a ready forum.⁹¹

McHugh began by sketching a portrait of American attitudes toward the Bomb which revealed a fear of atomic attack so profound it overturned long-standing American traditions and raised disquieting questions. Americas were "burrowing underground in a grassroots movement for survival." Civil defense officials noted that private citizens were "furtive" when they were questioned about their survival preparations, often "to the extent of passing off shelter construction workers as furnace repairmen." Such secrecy not only contradicted the very idea of a civil defense, but more to the point, revealed that the secrecy was generated by worries about being "troubled by panicky neighbors." Pondering the problems caused by troublesome interlopers, as the people next door were now to be viewed, the article explored the central issue of "essential morality at the shelter hatchway."⁹²

The article ignited a firestorm of controversy in the nation, one that illustrated the moral complexities the atomic age. Often incorrectly summarized as, "Should you shoot your neighbor if he tries to get in to your bomb shelter?" the actual text took exception to several of the theologians Time interviewed who blithely assessed that a Christian's duty demanded letting others use the shelter. McHugh specifically objected to the implication that one is obliged to love one's neighbor more than oneself, which he deemed a flagrant misreading of the New Testament. Leaving little room for misinterpretation, he came down squarely on the side of "gunning one's neighbor at the shelter door." Time's original assessment postulated that "most Christians would probably recall the Biblical parallel of the wise and foolish virgins - and draw their own conclusions." The most obvious conclusion would be that, come the apocalypse, the wise virgin would come not only armed with extra oil for the lamps but also with lethal firepower and intent.⁹³

Such speculations were not unique in the emerging climate of fear. Time pointed out and McHugh reiterated the story of one Chicago area resident who planned to mount a machine gun atop his shelter in order to deal with panicked citizens. One Texan prepared to evict unwelcome guests with tear gas. True to the growing irrationality brought on by the atomic age of terror, Time failed to note the absurdity of clearing a ten-by-ten-foot shelter with tear gas as a preparation to staying in it for weeks on end. Far more corrosive of democratic values and American ideals, Nevada residents planned to form a militia in order to protect

themselves from the expected flood of refugees from California, just as residents of Riverside County braced themselves against an expected flood of refugees from Los Angeles, leaving little doubt that their fellow American citizens would be met with a hail of lead, not a Christian hail and well-met. A similarly inclined emerging militia movement practiced survival techniques and guerrilla war tactics through militaristic activities and preparations. Said one minuteman, "We'll be better off than those folks buried under radioactive ash in their concrete coffins." In a little more than a decade and a half, America drifted from the national unity of World War II into a strange, alienating world of individual survival where Dad stood at the shelter door, gun in hand, prepared to kill his barbecue buddies, his wife's coffee klatch friends, and his children's playmates. This then was the ultimate end also of individualism; one man, a pistol in his hand, standing alone against the world.⁹⁴

In late November Father McHugh felt compelled to augment his original argument with a full-page reply to several critics who found fault in his pronouncements, agreeing these new arrangements threatened to "relax normal social bonds" and caused profound upset in a "national community in panic." Even Look magazine, rarely cited for penetrating spiritual analysis, took note of this emerging "moral debate with few parallels in American history." Look wondered if every American would be reduced to a "lone effort to escape the lethal radiation," surviving by clawing out and defending "his own hole" in the ground. The end of

individualism, run full course, and exhausted in the profound loneliness of a personal war for basic survival.⁹⁵

The demands of this new morality, starkly different from its predecessors, bothered McHugh for several reasons. His first objection was the fallacy of protection, and McHugh enunciated a grim and pessimistic litany of questions:

Are all forms of fallout shelter a cruel government hoax foisted upon our people? Are they a fraudulent type of insurance against what must be an unbounded catastrophe? Does reliance on shelters encourage acceptance of nuclear war, even though such a war involves the death of civil society and the survival of no more than a barbarous tribe of mutants for whom life is short, brutish and raw?⁹⁶

McHugh, in questioning both the efficacy and the basic premise of the shelters, also wondered if such preparations would actually hasten the war, a thought seconded by Science News. Despite such intense publicity, or quite possibly because of it, public apathy about chances of human survival grew, despite all efforts to maintain optimism. The "public yawns whenever civil defense is mentioned," stated Kennedy's choice to head the Office of Civil Defense, Frank Ellis. As one way of advocating civil defense, Ellis sought to write "in a clause to include mandatory bomb shelters in every FHA loan contract" and also tried to involve churches in civil defense. Moreover, he asked for a \$300 million budget, up from Eisenhower's "paltry" \$104 million.⁹⁷

Fallout shelters fell from grace quickly. The problems of postatomic survival seemed insurmountable, and planning such an effort was well beyond the ability of

most. The scientific community was divided on the shelter program and several critiques of civil defense were published in various science magazines. Notable observers, Norman Cousins prominent among them, issued similar condemnations. Also interesting, particularly in light of how the shelter program was sold as peace-of-mind for middle-class domesticity, were the less-than-enthusiastic responses from the major women's magazines, Better Homes & Gardens, Good Housekeeping and Redbook.⁹⁸

Nuclear war did not happen but, true to the diminished expectations brought on by the decline of technological enthusiasm, the payoffs did not accumulate as expected either. Both the promise and the terror seem overstated. In 1967, Time found that "the hope of the atomic age, when it dawned, was that if radioactivity did not kill mankind, it would cure it. It has done neither." But the problems of atomic hysteria did not limit themselves to weapons and fallout shelters. The perceived problems of nuclear power proved even more damaging to the dream of technological optimism than the weapons had been.⁹⁹

Defeating Nuclear Power: *Blues Over Bodega*¹⁰⁰

Fear of atomic warfare contributed to an expanding technological trepidation about all things atomic, *nucleomitophobia*, as Time dubbed it. This fear was effectively harnessed by the radicals in the expanding campaign against technological progress, extending the public's nuclear fear from the bomb

exclusively to issues of the environment in general. From the first commercial nuclear power plants, radicals used the safety issue to turn people against nuclear power. They formulated a set of tactics and an overall strategy that opposed progress in general, while working to defeat and/or delay individual projects.

The postwar vision of a bright future was nuclear powered. "Power from the Atom" was touted as clean, efficient and modern. Unique to the postwar world, nuclear power embodied the rapid decline of technological enthusiasm as few other technologies could. In an effort to ameliorate the fear of atomic war the Atoms for Peace program sought to develop nuclear energy's civilian applications and solve a critical problem; the exponentially expanding demand for electrical power. Balancing the atom's destructive potential with potentially unlimited social good also appealed to the Progressive belief that science itself was neutral, and that all developments could be used for good as well as evil. The Atoms for Peace program, based on the promise of power flowing in such abundance that it would be "too cheap to meter," drove the postwar nuclear industry's hopes and satisfied the military planners' needs for nuclear reserves. Preparation for nuclear war was always dramatized by a dichotomous mix of enthusiasm and fear, rational or not.¹⁰¹

Several key aspects of technological enthusiasm were strained or corrupted in the process of fighting nuclear power. In particular, the campaign promoted a growing notion that the price of progress might well be too high. Other key notions also found themselves under attack. The value of expertise, once seen as the

rational way to run a democratic system, now came to be portrayed as elitist and increasingly removed from the values and dictates of nonscientific thought and the experts themselves depicted as remote and passionless, acting contrary to the public good. The claims of the new priesthood, the engineers and scientists and managers, were attacked for both their findings and decisions. But also, at the heart of the matter, people attacked the very concept that required expertise as a prerequisite for competent decision making in the first place.¹⁰²

The first successful battle to stop nuclear power out of fear of its potential for catastrophic failure was fought over a stretch of rugged coastline in Northern California. What began as an attempt to use "atoms for peace" ended in a bitter fight, pitting huge corporations against little old ladies and generating recall elections amid charges of imperial antidemocratic local governments. More importantly the debate brought to the foreground the issue of decreased personal safety as a primary consequence of growth and progress.

Sonoma County, California, lies at the northern end of the San Francisco Bay. Its western boundary comprises sixty miles of rugged Pacific Ocean coastline, which, in the fifties, was populated by only a few small fishing villages. Though historically a sleepy rural area, Sonoma's proximity to San Francisco brought parts of the county into the general boom in California that began during the war and rapidly expanded, particularly the inland valleys surrounding Santa Rosa and stretching down the Valley of the Moon. In 1957 Pacific Gas & Electric, the state's

power monopoly, began to look around Sonoma County for a site for a power plant. They settled on Bodega Head, a barren, windswept spit of land that curved into the Pacific. The local town supported a small fishing fleet in an area popular with marine biologists, particularly those from the University of California.¹⁰³

The supervisors of Sonoma County in the late fifties and early sixties shared the general American enthusiasm for progress through technological development, finding nature improved more aesthetically pleasing than nature preserved. Increased revenue from additions to the tax roles aided this booster spirit. Well in advance of the power plant controversy, the supervisors had undertaken two separate Bodega development studies. A number of public statements demonstrate this belief that every place, no matter how naturally scenic, looked better after it had been developed. E. J. "Nin" Guidotti, the Sonoma County supervisor who drew the brunt of public criticism in the clashes over development, said he failed to comprehend why anyone would want to take a "beautiful area and just leave it undeveloped."¹⁰⁴

Local opposition to the PG&E plant began immediately in 1957 when one of the landowners, Rose Gaffney, resisted the power company's pressure to sell and forced the company to seek her land under eminent domain proceedings. "A born fighter" who loved Bodega Head and "guarded it with a fierce passion," Gaffney described herself as "one angry gal" over the proceedings. Though she argued her case on the basis of certain riparian rights granted under the Treaty of Guadalupe

Hildrigo, she nonetheless became a focal point for others opposed to the plant for less personal reasons.¹⁰⁵

Other initial objections were varied. A few came from fishermen and marine biologists who worried about the effects of thermal pollution on the local ecology. Local fisherman also expressed concern about a road leading to the plant that would be built over tidelands. Several local residents did not want to see the area developed at all. Taken separately, none of these problems would have been insurmountable. As often happens though, public awareness and concern were heightened not by any single problem but by a cascade of failures, each more serious than the last. The Bodega opponents successfully shifted from a failed scenic preservation argument to a general antinuclear argument based on health and safety concerns. By 1963, a full fledged reevaluation of technology and the environment was underway. Anti-PG&E forces created a climate of fear about radiation and raised concerns for public safety, focusing on fallout entering the food supply and adversely affecting human health. Milk, even mother's milk, seemed particularly susceptible to this side-effect, and Bodega opponents played up the fact that dairy cows were a major enterprise in Sonoma County.¹⁰⁶

In October of 1959 PG&E changed its plans slightly, requesting a one-thousand yard shift in the plant's location, from Horseshoe Cove on the Pacific side of the head to Campbell Cove on the leeward side. According to PG&E's land agent, the San Andreas Fault ran too near the first site to obtain AEC approval.

When earthquake safety became the prime concern regarding Bodega in later years, PG&E would have only itself to blame for raising the issue in the first place, though the subsequent course of events would certainly have revealed this flaw, even if PG&E had not.

Local residents took their fight to the state's Public Utilities Commission (PUC), where they argued for scenic preservation. This effort was unsuccessful, largely because aesthetics were not a factor California's regulatory board, the powerful PUC, needed to consider. In March 1960, without public hearings, the Sonoma supervisors approved PG&E's original plans.¹⁰⁷

In July of 1961, PG&E announced the Bodega site would house a 325-megawatt nuclear reactor, double the largest plant then in operation. This ambitious upgrade for the state's first commercial nuclear power plant made it the flagship project in PG&E's plan for cheap, clean atomic energy. This announcement occurred in concert with the AEC's 34 percent price reduction in nuclear fuel costs to utilities. PG&E touted Bodega as the first nuclear power plant built to be economically competitive with fossil fuel and hydroelectric power sources. The plant applications received initial approval in March of 1962.¹⁰⁸

The PUC approved this fundamental modification to the plant, but PG&E was already in hot water. Local public interest in Bodega, already high due to Alfred Hitchcock's use of the location of his movie The Birds, was further aroused by a highly critical letter in the San Francisco Chronicle. A lengthy article published in

the Chronicle's Sunday This World supplement added pressure on the PUC to reopen its hearings. Entitled "Atom vs. Nature at Bodega," it was written by Bay Area naturalist Harold Gilliam and focused on the question, "How much more of California's scenery will be lost to commercialization?" Gilliam's descriptions of Bodega Head were lush, and his arguments that Bodega should have been preserved as part of the 1955 State Park Master Plan were well reasoned. After the usual preservation arguments, Gilliam concluded with a plea to save Bodega, "a place where it is possible to experience the natural beauty of the coastline and escape the blight of commercialization and the industrialization that has gobbled up much of the California coast." Gilliam's argument moved preservation from an activity intended to protect places of "rare" or "unusual" beauty to an ethic which held that undeveloped land was good, simply by virtue of its nondeveloped status.¹⁰⁹

As a direct result of these public efforts, the PUC reopened its hearings in May, citing the large number of written protests filed with the commission since its March decision. The focus of the hearing would not be on beauty vs. commerce, the "need for nature" framework of older conservation efforts. The opponents of the Bodega project did not necessarily want to see it moved elsewhere. They proved determined to stop construction of the plant altogether.¹¹⁰

This marked a critical shift in both the size of the opposition and in its tactics and overall strategy. The most critical change came when safety became "the new battle cry of opposition to the company's plans for a power plant." In early

November, meetings were held to explain "the hazards of radiation and of reactors in general terms." Other "paths of action" for the opponents included appeals to the Sonoma County Board of Supervisors and court actions, both intended to stop or at least slow down the construction of the reactor.¹¹¹

By November of 1962, the fight moved forward by challenging the PUC in two separate but linked petitions. The plaintiffs sought to reopen the hearings. Dr. J. B. Neilands, a University of California biochemistry professor, alleged that officials suppressed reports of the "possible deleterious effect" on local marine life. These reports, generated when the University of California at Berkeley considered opening a twenty-acre marine research laboratory, raised issues of both thermal discharge and radioactive emissions.¹¹²

A second petition followed the next day. The newly organized Northern California Association to Preserve Bodega Head and Harbor, led by David Pesonen, charged that new developments and further research now demonstrated that the initial safety standards were inadequate so that the plant posed a major health and safety concern and could fail in a catastrophic manner. Pesonen's petition listed the plant's proximity to the San Andreas fault as one clear threat to Sonoma's residents health and safety. This new objection had immense credibility because of the fault's role in the Great San Francisco Earthquake and Fire of 1906. It was generally accepted that the San Andreas would slip again and wallop Northern California with "The Big One," and sooner rather than later.¹¹³

The public meeting organized by the association was held in Santa Rosa in early November. A broadside promoting the meeting played upon a fear of all things nuclear. Accidents could happen, as they already had at Windscale and at the SL-1 reactors. The wall of expertise was breached by other experts as several "outside" scientific experts were brought in to counter PG&E's corps of engineers and scientists. This challenge to PG&E's authority marked a critical change in environmental action tactics.¹¹⁴

The largest public protest took place in May 1963, over the Memorial Day weekend. The event garnered favorable press, though much of it focused on local legend Lu Waters, a jazz artist who came out of retirement to write, record, and perform *Blues Over Bodega*, with its catchy refrain of "PG&E, give Bodega back to me!" The most unique feature of the rally, however, was the release of a "flock of balloons which contained the following warning about atomic fallout"

This balloon could represent a radioactive molecule of strontium 90 or iodine 131. It was released on Bodega Head on Memorial Day, 1963. PG&E hopes to build a nuclear reactor plant at this spot, close to the world's biggest active earthquake fault. Tell your local newspaper where you found this balloon.¹¹⁵

Association officials noted that the balloon launch did not constitute "any kind of valid scientific experiment," but it clearly demonstrated the point that fallout spread inland without much hinderence. The first balloon was found about four hours after launching near the town of Petaluma, about twenty miles away. Later findings extended hundreds of miles away far into the Central Valley.¹¹⁶

Later that summer, the San Francisco Examiner ran a particularly negative article entitled "Atoms vs. Beauty at Bodega Bay." Calling PG&E's proposal "the hottest nuclear controversy in the country today outside of the test ban treaty," the article included an artist's representation of the proposed project, showing high tension power wires stretching over the inlet and running down the middle of Doran State Park beach. The fact that PG&E won out over the park advocates had outraged many to begin with, and the news that Doran would also be affected did not win the project any new supporters.¹¹⁷

The previous safety concerns, wedded to the very real possibility of a catastrophic accident, escalated the Bodega project to a grave level of controversy. Repeated public relations efforts on behalf of the nuclear industry only seemed to fall flat. PG&E's ineptness was even mentioned by the Bodega Association, which asked the AEC to "rescue PG&E from what has become an increasingly embarrassing mistake." The AEC had certainly envisioned slightly more favorable public relations for its Atoms for Peace program, but the worst calamity for PG&E was yet to come.¹¹⁸

If the Sonoma supervisors and the state PUC found the risk acceptable, others, including San Francisco's political leaders, increasingly did not. Shut out of Sonoma county politics and finding the state unresponsive to its concerns, the city moved the conflict to a national arena by bringing the matter to the attention of the Johnson Administration. Secretary of the Interior Stewart Udall ordered the U.S.

Geological Survey to study the Bodega site, with particular emphasis on the hazards posed by earthquakes. The federal geologists' findings deemed the location unsuitable due to an extreme risk of major earthquake, agreeing with the association's staff geologist, Pierre Saint-Amand, who previously opined that a worse site "would be difficult to envision."¹¹⁹

PG&E officially suspended construction in October 1963 while awaiting settlement of the earthquake safety issue. A year later, opponents celebrated "Empty Hole in the Head Day," featuring Lu Waters and a lecture from Joel Hedgpeth on "PG&E Progress, The Flower of the Poppy." Meanwhile, the AEC released four separate reports, three of which were highly critical. Citing the negative findings, the AEC recommended against construction of the Bodega reactor.¹²⁰

This was the end of the line for PG&E. Yet the company found a way to declare victory, while painting itself as the guardian of public safety, as the president of PG&E claimed:

Our decision to withdraw the Bodega application does not mean we have lost any confidence whatsoever in nuclear-electric generation. Atomic plants are safe and dependable, as experience in California and elsewhere has shown. Nuclear fuel is plentiful and rapidly is becoming the most economic heat source for power generation.¹²¹

Even at the end of its failed attempt, PG&E was missing the point. Had they been carefully reading public expressions of opposition, such as those in the "Letters to the Editor" of The Press Democrat, they would have found a public

increasingly concerned about this "safe" and "dependable" power source, or at least a persistent vocal minority whose fears were not just earthquake safety, but far more basic qualms about nuclear power. One writer raised the fear of Armageddon, rhetorically wondering if "we are to (live?) side by side with something so potent than the atomic bomb dropped at Hiroshima?" In the strongest possible terms, the writer denounces "PG&E, PUC and AEC for using the present generation as guinea pigs." This position was not as unreasonable as PG&E attempted to paint it. As Pesonen once remarked, "History is studded with fireproof buildings that burned and unsinkable ships that sank." Knowing this, prudence dictated at least a little caution, no matter how limited, as the compatriot of enthusiasm.¹²²

One of the most far-reaching effects to emerge from the antinuclear debate was the questioning of experts. Bodega was a black mark for the experts and their stock in trade, expertise, as noted by the KPFA radio program entitled People vs. the Experts and Hedpeth's later book, Failure of the Experts. The Bodega controversy was a direct attack on technocratic rule. Of one meeting, The Press Democrat reported "a recurring theme was that the 'experts' should not be trusted by the public, but that the public should be informed of the safety and then make a decision on the plant."

The Bodega controversy highlighted an increasing loss of confidence in the technical elites. The structure of the regulatory system dictated such a course. The public's disillusionment with and outright dismissal of the experts was part of a

growing lack of faith in the decision-making process itself and its exclusive reliance on expert testimony. There was little doubt that such experts were, in fact, "captured." The selection of such experts tended to support the desired conclusion. "The difficulty is that one of these highly specialized scientists can only work for one of a limited group of employers."¹²³

Casper Weinberger, then chairman of the state's Republican Party, expressed confidence in technocratic impartiality, dismissing the controversy as "a technical matter for the Atomic Energy Commission and its experts to decide." Don Clausen, the U.S. representative for the area, remarked, "From the beginning it has been my position that the experts and not the politicians should have the final decision regarding safety factors associated with the proposed atomic energy plant." Once this position was agreed upon (and by the early 1960's it was a central tenet of Progressive progress and an article of faith at the AEC), it became difficult for PG&E to discount the findings of a second set of experts.¹²⁴

This outcome of Bodega was nicely summarized by one Sonoma County resident who wrote, "Public debate has exposed more than an earthquake fault on Bodega Head. It has exposed the conflicting views of company-paid geologists, and nonbiased government geologists." It also exposed a divergence between expertise and democracy. This process corrupted the essence of democratic government, as Pesonen stated:

We face a kind of government by schizophrenia. On one hand technicians are making sophisticated decisions that affect everyone's

destiny, and on the other, citizens are making only the crudest sort of choices, such as the options between candidates in an election. Generally, the citizenry ends up running along behind the technicians, trying to stop, modify, or simply understand what they have done."¹²⁵

The behavior of the experts regarding Bodega set up "a malfunctioning of the democratic process." The public discovered that knowing how to do something does not empower one to be the sole judge of what "ought" to be done.

"Technicians, anxious to experiment with their gadgets and impatient of the slow, muddling democratic process, assume the prerogative of deciding whether something should be done, not just how," a college professor complained to the Sonoma County board of supervisors. Such abrogation of responsibility marked a course "toward irresponsible governments by power elites and the military-industrial complex," and strong evidence of a "process which devours democratic government in a truly cancerous fashion."¹²⁶

Pesonen reflected more somberly:

What I am describing is not difficult to comprehend, nor is it unique to Sonoma County; it is not a sudden outcropping of the mid-20th Century; it is not a phenomenon related solely to atomic energy. But at mid-century, when atomic facilities are about to begin springing up all over the landscape, run-of-the-mill erosion of the public interest is intolerably dangerous.¹²⁷

Through the Bodega story ran a clear and sustained attack on the notion and costs of progress. One writer perfectly expressed the radical view, asking "Is this the thing called progress? Please let us stop and question before we build Sonoma County's atomic bomb." The Progressive argument, vigorously extolled by

both PG&E and the Press Democrat and implicit in the mandates of the PUC and AEC dismissed public fears, noting, "the list of things that constitute dangers to human beings is virtually endless." They cautioned the citizens of Sonoma County not to fret about the increasing base number of these dangers, because "some are more dangerous than others," clearly separating the dangers into "remote" and "possible" categories. Earthquakes in northern California clearly fit the category of possibility but as "Pacific Gas & Electric obviously has been convinced by its research and experience that there is no danger," the Press Democrat recommended getting on with building the plant. Even though PG&E's actual experience was both brief and on a much smaller scale than what they were proposing for Bodega, the paper still felt that they would be able to tap "pooled knowledge gained from the other and larger commercial plants around the nation" as a means of overcoming any lack of experience.¹²⁸

Among the opponents to the Bodega reactor, the Sierra Club's goal was to stop blind progress. To them and many others, atomic power signaled a quantum leap from previous technologies and constituted rushing headlong into a situation without knowing the true costs or outcomes. Pesonen described the reactor as "something unprecedented" and the development of nuclear energy in general as "impossible to exaggerate the importance of in the events in human history." This fight was not about a single reactor. Bodega represented a composite of the dilemmas of modern technological society. With the Bodega controversy came the

realization of the interrelatedness of all aspects of society and the environment. In a word, all of these aspects were blending together and becoming holistic.

Pesonen mused, in a speech before local Democrats in late 1962, "If we are only half right, the problems of atomic energy focused at Bodega Bay touch nearly every facet of modern life."¹²⁹

Pesonen and his allies were "not nuclear reactionaries." Their initial objections were based on natural preservation and scenic beauty, although those concerns were overshadowed by technological issues, and these technological issues were to be (or certainly should have been) democratically decided. "This issue of conservation had some validity. However, I think it is no longer paramount. The real matter is safety. The real issue is the right of the people to have a say in their destiny." Progress could not be allowed to overrule democracy.¹³⁰

The opposition originally sought to end the project on grounds that "the Bodega reactor was bad land use, bad planning, but not bad in itself." That position evolved to judge the reactor as a looming threat to all, and one that proved almost unstoppable. "The total effect is almost as though the Bodega reactor had a soul of its own." This was a disheartening conclusion to reach, as it suggested that progress was only an illusion, a runaway process that had ceased to benefit its supporters. "Bodega Bay is the most remarkable example anywhere in the world of what has been variously called the euphoria of gadgets, runaway technology,

ecological arrogance, and conspicuous consumption - on a scale that sets the mind reeling."¹³¹

This disenchantment with the price and profits of progress, the growing distrust of experts, and the uneasy sensation that Americans no longer really *ran* America were not unique to Bodega. The antinuclear movement just used and unified discontentment that had already been building. So Pesonen wrote to association members in December 1964, urging them to support the students at Berkeley. The role (or more precisely, the lack of one) which the University of California at Berkeley played in the Bodega saga saddened many of the university's supporters who had expected more input and support from the institution. The students were demanding a more open university and a more liberated faculty, who would be free to oppose development, particularly atomic power plants at Bodega Bay. "Thus the Association has a deep stake in the 'bonus' effect of the Free Speech Movement, if not directly in the central objectives."¹³²

CHAPTER 3
THE RADICAL CRITIQUE

Nuclear Families: *Duck and Cover*¹³³

The perpetual threat of nuclear annihilation furnished a major rationale for growing feelings of alienation, and the atomic bomb's long shadow cast a dark apocalyptic tenor to the Baby Boom generation's rejection of prevailing values. As a single imposing icon for the generation, the atomic bomb appears frequently in both the primary and secondary literature on what were then termed "youth" or "the young" in the sixties. In both the original student movement as well as the later and far more pervasive countercultural movements, a direct link between "duck and cover" and throwing your body on the gears of the highly mechanized society or just dropping out can be clearly demonstrated.¹³⁴

One particularly poignant work defines the sixties as actually beginning, not with President John F. Kennedy, the civil rights sit-ins, or any other event of the decade, but in the ashes of Hiroshima and Nagasaki, the dark conclusion to the Second World War. Albert Einstein quipped that the bomb "changed everything except man's way of thinking." For his generation and the generation of the war, that might have been true, but it would not prove universally so, as the youth movement attempted to come to grips with the existence and use of such uniquely destructive capacities.¹³⁵

The revolutions that shook the decade were based on a profound fear that bound this generation. Despite their parent's affluence the world of the sixties youth was not a utopia realized, but a shared "heritage of nightmares that comprise recent history," with Hiroshima at the forefront. The real nightmare, though, was not the Japanese experience at the end of the Second World War but the daily reality of America's Cold War, as one writer recalled:

We might not remember Hiroshima, but we recall fallout shelters. Civil Defense. Air raid sirens. We hid beneath school desks, stored contingency rations. We set our dial on CONELRAD. We lived in a backwash of nuclear holocaust without thinking such a condition absurd. A nightmare was eternity spent underground, in a concrete bunker, alone.¹³⁶

The looming possibility of nuclear attack, prepared for with school drills, civil defense broadcasts, and bomb shelters, truly provided the deepest and most common touchstone among the participants in the counterculture. The ins and outs of nuclear annihilation had been presented to them by their teachers and elders, peppered with practical suggestions for survival. In retrospect, the practices appeared to many, particularly children, to be preparation for the inevitable, not contingency plans for remote possibilities. This was particularly true in the public schools, which were routinely singled out for high praise for their civil defense planning and training efforts.¹³⁷

This pervasive atomic fear spawned a variety of responses. Some people froze, panicked with the sudden, overwhelming knowledge of the fragile nature of life, particularly their own. Dread created a limited sense of the future, one stripped

of security, as one participant observed: "The bomb frightened the daylights out of my life. For two years I didn't make one decision, one plan, that bound more than two days together."¹³⁸

Others were filled with a profound anger, both with the technology itself and with the men and the system that created and used it. This anger amplified a general dissatisfaction into riots and supposed revolutionary actions, even eliciting blood lust in poets who more characteristically turned pens to pleas for civil rights, social justice, and love. One clear expression of this rage and anger surfaced in Bob Dylan's "Masters of War," a grim narration that not only wishes to see the war-makers' lives ended, but goes further, proclaiming " I'll stand o'er your grave / 'Till I'm sure that you're dead."¹³⁹

With a certain lack of fear, others directed their anger toward outward targets. David Goines stressed that he and his Berkeley fellows were "the children . . . raised under the shadow of The Bomb." The constant reminders and frequent drills instilled in Goines a different reaction: "By the time I reached my teens, having been steeped in phony terror all my life, I wasn't afraid of anything anymore." This statement demonstrated a lack of fear of the police and other authority figures and a general level of contempt, one that arose in a variety of contexts, most notably, drug use.¹⁴⁰

The bomb also worked as a wedge between the Baby Boomers and their parents, creating the decade's famous Generation Gap. In an editorial comment

from his high school yearbook, Todd Gitlin, the New Left's première sociologist, beautifully illustrated the connection between the bomb and the "knife edge line between the generations." In 1959 the young students of the Bronx High School of Science read this summation of the world they were to inherit:

In today's atomic age . . . the flames of war would write *finis* not only to our civilization, but to our very existence. Mankind may find itself unable to rise again should it be consumed in the nuclear pyre of its own making. In years to come, members of this class will bear an ever-increasing responsibility for the preservation of the heritage given us. Those of us who will become scientists must make certain that the *Vanguards* and *Sputniks* of the future herald the coming of an era of light and not an epoch of never-ending darkness.¹⁴¹

Such overtones of Armageddon seem out of place amid the "best years of our lives" commentary that usually fills such books. It was both a terrible burden and a heavy responsibility to lay on people who were still teenagers. The graduation exhortation to make sure the pyre is not lit, that heritage is preserved, that civilization and existence itself continue makes their "by any means necessary" thinking understandable, if not always justifiable.¹⁴²

It was also a very special charge laid upon these future scientists at a technical high school, that those who understood science must carefully examine its work and keep a tight rein on the desire for and appetites of discovery. The future they saw was not one of enthusiastic acceptance but of careful choices, not boundless in and of itself, but limited, a double-edged sword capable of light or darkness. Unknown to these emerging adults at the time, this heavy burden helped

forge within them a unique power that bonded moral courage to a sense of urgency. This generation believed it could change the world. It believed it must. And, with that belief, Gitlin's graduating class and thousands like it left high school and headed off to college.¹⁴³

The Mechanism and the Machine: *A self-ordained professor's tongue / Too serious to fool / Spouted out that liberty / Is just equality in school.*¹⁴⁴

The first blush of radicalism, including the New Left, was a student uprising in a revered academic setting. The protests at the University of California at Berkeley in the fall of 1964 provided examples that would be repeated coast to coast for years. The repercussions of the students' startling critiques and fresh intensity were felt far from Berkeley.¹⁴⁵

Of particular interest was that the Berkeley Free Speech Movement, beyond its surface political grievances, expressed a profound alienation from the postwar industrial order, its notion of progress and, in particular, the reality of its implementation. Though protests originally focused on purely political issues, a deep current of antitechnological sentiment propelled much of the rhetoric of the movement. The underlying resentment of the students was built largely on frustrations with the growing and changing university and not just issues of political pamphleteering. They revolted against the cultural notions which underlay the Progressive technological vision as practiced and implemented on the campus. Expressed as political goals and in a political tone, their underlying complaints had little to do with political issues and everything to do with what the students wanted

their lives to be, and what they saw them becoming. Tapping into a background of fear and trepidation about the costs of progress their initial dissatisfaction, by decade's end, approached a generational universal truth.¹⁴⁶

The clearest example of these initial arguments was the 1964 Berkeley Free Speech Movement's critique of the widely published views of University of California president Clark Kerr. The Berkeley campus of the University of California system epitomized the changes in the American university in the postwar world. The Crown Jewel of the UC system, the Berkeley campus sprawled over the gentle hills of the East Bay region in Northern California. The university had played an instrumental role in developing the atomic bomb, supplying Robert Oppenheimer and William Lawrence, along with a plethora of graduate students, to the Manhattan Project, mostly to its influential and highly publicized (at least in the postwar era) Los Alamos operations. The university also administered several labs associated with nuclear weapons development, including Los Alamos and the newly established top-secret, state-of-the-art Lawrence Livermore Laboratory. These labs were routinely staffed with Berkeley faculty and students in what Kerr referred to as the university's commitment "to the service of brute technology." Certainly no technologies were as brutal as nuclear weapons.¹⁴⁷

Under Clark Kerr's tenure beginning in 1958, the university expanded its role as a contractor for federal government research. Along with nuclear weapons research and development, the university increased its commitments to other

outside businesses. The "multiversity," as Kerr dubbed this new academic model, reached out beyond traditional goals and began to form "profound and reciprocal connections to business, industry, and government." Kerr's multiversity, based on the modern premises of progress accomplished through scientific abstraction, rational planning, and technological implementation, was to express and realize these ideals in a powerful new synergy.¹⁴⁸

Several critics inside academia felt that this new state of affairs had already proved disastrous for the universities engaged in the transformation. Changes to the system initiated not only new procedures and facilities needed to support innovation, but also transformed more traditional areas of the university. The professors' new mission left little time for educational pursuits, according to critics. "The influx of research funds has corrupted the leading faculty members, transforming them into members of what Robert M. Hutchins has called the 'academic jet set.' They are the idea men of the organizational system, and the Universities their resting place between dizzying conferences with the power elite."¹⁴⁹

This change of mission eclipsed the traditional role of the professor, further weakening the system. Scholars and scholastic pursuits were valued less, and those who followed traditional patterns felt their control greatly diminished in the new regime. Scholars and academics were no longer in the position of being "the

dominant voice of a university," and few were "uncontaminated by the grossness of utilitarian measurement and the calculations of the business ethic."

What has been happening to the American university is gradual and all-too-cheerful adaptation to the surrounding social landscape: It has become too absorbed with weapon-producing research, too subject to the creed of material growth and power, too caught up in the mystique of quantification.¹⁵⁰

Though Kerr disagreed that the process itself was corrupting, he did not differ with the basic proposition. He envisioned the university as factory and forge for the emerging "knowledge industry" of the postwar world. These new educational institutions furthered national purposes much broader than simply educating young students, a task which Kerr did not discount, but simply no longer considered the sole use of the university. The new multiversity could contribute its unique facilities and resources to a vast array of military, scientific, technological, economic and social objectives. Friction arose, however, when the federal government or industry contributed money in rapidly rising amounts to this enterprise, expecting in return for their support that the university, its employees, and its students would cheerfully and quietly submit to, and labor for, these new priorities.¹⁵¹

The initial effect of this new arrangement was that the physical campus grew while, simultaneously, the escalating demand for college level education in the postwar years swelled student enrollment. As industry and government now joined the students as "clients" of the vast multiversity enterprise, Berkeley grew to become the largest institution of its kind. By the early sixties, Berkeley surpassed

Harvard as the nation's leading center of graduate education. Though not the only university to remake itself after the war (the University of Michigan at Ann Arbor, home to the Students for a Democratic Society, better known as the SDS, ran a close second), Berkeley, and a few other universities, took on a new mission of serving "as the focal point for national growth." The growth of the knowledge industry placed the university in position to accomplish "what the railroads did for the second half of the last century, and the automobile for the first half of this century." As this type of economic activity became the focus of the multiversity, facilitating the nation's economic growth increasingly became the university's new *raison d'être*.¹⁵²

It proved an impressive ambition. Both the difficulty of creating ever expanding progress and prosperity and the enormity of the financial rewards proved extremely seductive. Kerr's statistics coolly illustrated the stakes: "The production, distribution and consumption of knowledge is said to account for 29 percent of gross national product, and knowledge production is growing at about twice the rate of the rest of the economy." In order to capitalize on these trends, Kerr believed it necessary to bring the university into line with the way the rest of the economy ran, seeking to blend traditional university administration with modern industrial practice. Like any business, Kerr viewed the university as "a mechanism held together by administrative rules and powered by money."¹⁵³

According to Kerr himself, the decision to affect so revolutionary a transformation was the result of a shared sense of national mission brought about by a need to serve "the scientific revolution," particularly "after Sputnik" a sense largely fueled by panic, pressure, and greed. This mission was not adopted to achieve clear strategic goals. Expressed in the bold rhetoric of national mission and national needs the changes concealed a very hollow center. Lacking a clear articulation of the ends to be achieved and possessing no clear vision of a future beyond more of the present, the Progressive ideal seemed either exhausted or fulfilled. The spokesmen for Progress shared a vision about the correct path, but in reality had no actual future-oriented goals. Skilled in the methods of technocratic management and technological advancement, they knew *how* to obtain, but forgot *what* to obtain, and in that contradiction, lost sight of just *why* (beyond money) they needed to obtain it in the first place.¹⁵⁴

Kerr believed in the Progressive vision of progress, and making that progress possible was one of the great tasks of a multiversity president. This singular duty fell to the university's chief administrator because of his role as "the central mediator among the values of the past, the prospects for the future, and the realities of the present." The administrator served as the fulcrum of change, balancing the demands of preserving tradition with the requirements of the future in the crucible of the present, yet this critical center of both tradition and progress, in Kerr's words, possessed "no new and bold 'vision of the end.'" Although it was accepted as fact

that a good administrator must be a bit bloodless, this struck the young radicals as more than a bit soulless, the university doing only what others programmed and designed it to do. From this situation arose the analogy of the multiversity as machine, operating without a larger vision, devoid of purpose and vacant of objectives beyond the next cycle.¹⁵⁵

In any case, the issues of "how" completely dominated a discussion that apparently proceeded without any notion of "why," and even less idea of "to what ends" these fundamental changes were being directed. At the very least, taking actions without regard to the consequences showed a reckless disregard for tradition, a problem compounded by the fact that these actions were proposed by the very person whose chief task was to mediate in favor of the values of the past. While the students, and later, the countercultures, would be rightfully accused of acting on whim and whimsy as opposed to reality and reason, Kerr's power elite, as he described them, did not seem to be following any more important dictates than feeling and self-interest, either. Consider the following excerpt of Kerr's thought:

The areas chosen have been defense, scientific and technological progress and health. Decisions have not been based on thorough study of national priorities. They have been made pragmatically, in response to the felt needs of the nation and of the people in accord with the possibilities of the times, and also, to an extent, in response to the urgings of very powerful lobbies.¹⁵⁶

Kerr's statement that the future would be one of winning "few clear-cut victories," unwittingly confessed to the most banal of goals, and pessimistically

aimed "more at avoiding the worst than seizing the best." Regardless of the truth or expediency of that thought, it hardly provided a vision worth sacrificing for. This seems particularly true for a generation raised according to the highly individualistic ethic of "being the best you can be."¹⁵⁷

Kerr's vision of the future struck many as deeply disturbing. His "new slavery to technology" was not particularly appealing. The "highly ordered" economic system Kerr favored rendered the "political system barren ideologically." Under the guise of effective management, Kerr foresaw a bland bureaucracy acting in a "benevolent" manner. Few of his opponents, though, were unaware that despotic rule frequently arrived in the guise of lofty principles offering charitable aid.¹⁵⁸

Kerr emphasized these changes in a way that particularly galled the students, stating that these changes in both the students' lives and in the reordering of missions and priorities resulted from "an imperative rather than a reasoned choice among elegant alternatives." There was no need to discuss, debate, or vote on these major readjustments because they were not preferences, choices, or options. Such changes simply must happen, for they were "rooted in the logic of history." The certainty and the totality of this inevitable world without choices dismayed many. Its bleak and stark life bespoke a crude industrial predestination. Progress concluded with a state where "Everything must be this way," leaving little or no purpose for reason.¹⁵⁹

Protest was futile. According to Kerr nothing could be stopped, altered, or chosen, for "the nature of the multiversity makes it inevitable that this historical transfer will not be reversed in any significant fashion." Kerr was quite clear on this point, emphasizing the inevitability of it all: "The process cannot be stopped. The results cannot be foreseen. It remains to adapt." To the young radicals, Kerr's changes amounted to a large gamble where the first casualties were to be their freedom, liberty, and independence.¹⁶⁰

These changes affected the students on a profound level, changing not only the nature of their work at the multiversity but, in simple and basic ways, all aspects of their lives. According to one student, "It was widely understood that some deeper disenchantment lay behind the free speech fight" than just the mere distribution of political tracts. In the case of Berkeley and Ann Arbor, larger schools meant larger classes. Combined with the increasingly mechanical and technical nature of the institution itself, the setting dehumanized, or at least depersonalized, the college experience students had been raised to expect.¹⁶¹

Increased depersonalization and decreased individualism created a formless community. The vagueness of the university experience increasingly was reflected in the transitory nature of the immediate, as well as the expanded, college community. Unlike the classic four-year institution, "general students will come and go with less reference to their 'class'; more of them will drop in and drop out as suits their particular schedules and needs." Given this reality, it should not have been

surprising that many "students" still classified themselves as such, whether or not they were actually enrolled in any classes.¹⁶²

The tendency of technological enthusiasts to seek a quick-fix for these problems failed to resolve the dilemma of depersonalization. In fact, some of the solutions only exacerbated the problem, increasing the remoteness and emphasizing the clinical, mechanical nature of the college experience. To educate more students with less teaching faculty involvement increased use of technology was employed. Kerr anticipated "further mechanization of instruction (television, language laboratories, programmed learning)" in order "to improve quality and to save faculty time for other endeavors," activities presumably of more, or at least equal, value. The replacement of live educators with static electronic programs failed to meet with universal acclaim. Inside the academy, the protests were likely to follow Snow's "Two Cultures" split. Kerr speculated that where "the sciences will almost eagerly embrace these aids to learning," foreign language departments might prove "rather reluctant," largely "because these devices can threaten their structure of faculty employment and the recruitment and utilization of graduate students."

Student Radicals: *Twenty years of schoolin' & they put you on the day shift.*¹⁶³

On top of this growing depersonalization and general disillusionment, students at Berkeley voiced many specific complaints. Though some of the rhetoric

could be dismissed as cranky, there was no shortage of real ailments that bothered the most serious and conscientious students. Berkeley seemed to obliterate individuality.

At Berkeley, the educational environment of the undergraduate is bleak. He is confronted throughout his entire first two years with indifferent advising, endless bureaucratic routines, gigantic lecture courses, and a deadening succession of textbook assignments, and bluebook examinations testing his grasp of bits and pieces of knowledge. It is possible to take a B.A. at Berkeley and never talk with a professor. To many of the students, the whole system seems a perversion of an educational community into a factory designed for the mass processing of men into machines.¹⁶⁴

If their professors were describing the regime as a "perversion," the student perspective was even more harsh. The Free Speech Movement cataloged a stack of abuses, piled ever higher on the students' plates, with ever fewer avenues open for redress of grievances. What Kerr envisioned and termed "a mechanism" appeared to the Free Speech Movement students as a full-blown machine:

The best way to identify the parts of our multiversity machinery is simply to observe it "stripped down" to the bare essentials. In the context of a dazzling circus of "bait" which obscures our vision of the machinery, we get a four-year long series of sharp staccatos: eight semesters, forty courses, one hundred twenty or more "units," ten to fifteen impersonal lecturers per week, one to three oversized discussion meetings per week led by poorly paid graduate student "teachers." Over a period of four years the student-cog receives close to forty bibliographies: evaluation amounts to little more than pushing the test button, which results in over one hundred regurgitations in four years; and the writing of twenty to thirty-five "papers" in four years, in this context means that they are of necessity technically and substantially poor due to a lack of time for thought. The course-grade-unit system structure, resting on the foundation of departmentalization, produces knowledge for the student-cog which had been exploded into thousands of bits and is force-fed, by the coercion of grades. It is as though we have become raw material in the strictly *inorganic* sense.¹⁶⁵

Students at the first major campus disturbance belittled the administration for treating them no better (and probably worse) than a bunch of IBM punch cards. *Do not bend, fold, spindle or mutilate*, the ubiquitous warning found on the cards, found its way into the culture as a plea to treat people at least as well as we treated our machines. Thus the computer, the machine of the new age, became the chief symbol of "the system" that the students were objecting to, exemplified by the slogan the Free Speech Movement: "Are you a student or an IBM card?" At one point students wore actual IBM punchcards around their necks with the initials FSM punched into them. "Yet this revolt was not just a blind lashing out at the machine - a modern Luddite rebellion. The IBM card and 'the bureaucracy' were symbols, but behind the symbols stood men."¹⁶⁶

Had this situation been only a local problem at Berkeley it would have been of little significance and had little long-range impact, but Kerr's multiversity was not a unique example or a special case. As envisioned, Berkeley served as "the wave of the future" not just for the nation, but indeed for the world. As Kerr said, "the imperatives that are molding the American university are also at work around the world." Berkeley indeed served as the prototype, not just for the American university as Kerr boldly proclaimed, but also for a generation of students across the country who emulated the Berkeley students. Kerr believed in "Today Berkeley. Tomorrow the world." So too, in a different sense, would many of the students.¹⁶⁷

In the spring of 1963, well in advance of the fall 1964 uprising, Kerr himself noted the increasing "depersonalization" that accompanied the rise of the multiversity. Although Kerr noticed the changing trends in students' attitudes well in advance of the turmoil, it ranks as his greatest failure that he took no action to remedy the situation or prevent the resulting crisis. In this, Kerr misread not only the depth of the pent-up frustrations that such changes caused, but also the fervor with which the resulting discontent would be expressed. Noting that "peace and progress are more frequently enemies than friends," Kerr had previously stated that "the effective mediator must, at times, sacrifice peace to progress." At UC Berkeley, the time of sacrifice began in the fall of 1964 when classes reconvened amidst rising tension, not only on the campus, but throughout the nation.¹⁶⁵

The student revolt in Berkeley set a trend for university students throughout the rest of the decade, if not for all students at all schools, then certainly for self-styled radicals. Later demonstrations, though, never matched Berkeley's insightful rhetoric, spirit of self sacrifice, and poetic expression. Many writers miss this point when they cover the events on the Berkeley campus. One commented that the "anarchist philosophy was inarticulate in the FSM, but formed the essential activist core for everything that followed: the Filthy Speech Movement, anti-Vietnam War activism, the drug culture, hippies, Yippies, the Weatherpeople, People's Park and so on." To link all these groups and movements in the clear cause-and-effect that the author alleges is misleading at best, but to find such a link in "poorly stated

anarchistic leanings" is plain wrong. In the early days of the Free Speech Movement the philosophy was clear and crisp, but what followed proved largely inarticulate and, in some cases, flat-out incoherent. Unlike the litany of groups that the author lists following it, the Free Speech Movement was not anarchistic, it was democratic. More importantly, the primary stress was not political, it was a simple, human expression. While radical in nature, the students' critique sought accommodation, not overthrow.¹⁶⁹

The hard-and-fast central issue in the series of escalating confrontations between the students and the administration involved the use of an ambiguously owned strip of land as an area for the distribution of literature for a kaleidoscope of political causes, ranging from the left-leaning Student Nonviolent Coordinating Committee and the Congress for Racial Equality to the right-wing Goldwater for President campaign. A series of small, discrete confrontations coalesced and quickly reached a boiling point when students prevented the police from leaving the campus with a student they had arrested for distributing political literature. The standoff, or more precisely the sit-in, lasted thirty-six hours. This unrest rapidly intensified with several student sit-ins at the administration building, climaxing in a major student strike. Along the way, numerous rallies provided opportunities for expressions of discontent, ranging from extended speechmaking from atop a spontaneously impounded police cruiser to singing "We Shall Overcome" with folk singer Joan Baez. Most of what followed could have been avoided, but a frightened

clinging to calcified positions, rather than a spirit of mediation, gripped the administration and effectively prevented a compromise. Perhaps the truest characterization placed the blame on Kerr and his administration, who at the very least "acted with panic, under outside pressure and out of touch with its own community."¹⁷⁰

One speaker's remarks remain inextricably linked with the events at Berkeley that fall, largely because they captured the essence of the early dissatisfaction in clear, but also highly poetic, terms. At the first Free Speech Movement rally on October 5, 1964, Philosophy graduate student and the FSM's most eloquent voice, Mario Savio said that students were permitted to speak freely about inconsequential topics or grand radical revisions that were "largely irrelevant in the foreseeable future," but were prevented from addressing political issues in the here-and-now, a unique double standard on the part of the administration, whose philosophies were allegedly driven by the present.¹⁷¹

Savio attacked Kerr's multiversity on grounds that had nothing to do with freedom of speech or the distribution of political literature. His critique dealt with the specifically targeted changes that threatened the old order of the university. Savio did his homework well and knew Kerr's ideas as expressed in his writings, which circulated around campus with various student critiques attached.

Hoisting Kerr upon his own petard, Savio issued a burning condemnation of the current regime for being exactly what Kerr wanted it to be. Savio attacked the

"conceptualization of Clark Kerr" that turned Berkeley not into the center of Kerr's grand and shining "Ideaopolis," but rather into little more than a sweatshop existing only "to serve the need of American industry." Agreeing with Kerr that the university had become a "factory that turns out a certain product needed by industry or government," Savio served notice that not all the "products" were enthusiastic about the situation. An even more impassioned Savio addressed the students and the regents in late November 1964, delivering what became the keynote speech of the student revolt. Continuing to pursue and exploit the anti-industrial critique, Savio depicted the university as a soulless machine, elaborating on the students' discontent with modern industrial society, particularly as it was then being realized at Berkeley.¹⁷²

Denouncing the current state of affairs that progress had left in its wake, Savio stretched Kerr's analogy of the university as "knowledge factory" and used it to redefine the faculty as "employees" and the students as "raw material." He criticized the concept of students being educationally groomed only to be "bought by clients of the university" as if this were the sole institutional mission of the academy. The heart of his speech pushed antitechnological images, impressing upon his audience the need to protest. In words that rang across the nation and resounded through the decade, Savio begged his listeners to take action against the system, even if such action came at great personal cost. Savio attacked the university as a machine, creating products for corporate knowledge slots,

invalidating the students as "free" people and failing to provide means for them to express their "individualism."

There's a time when the operation of the machine becomes so odious, makes you so sick at heart, that you can't take part, you can't even tacitly take part. And you've got to put your bodies upon the gears and upon the wheels, and upon the levers, upon all the apparatus, and you've got to make it stop. And you've got to indicate to the people who run it, to the people who own it, that unless you're free the machine will be prevented from working at all.¹⁷³

Savio's threat to throw his body upon the gears of the university's machine did not arise out of some obscure metaphor chosen for poetic impact. The "university as machine" idea was Kerr's, and Savio seized upon this metaphor that clearly expressed his ideas to the administration while resonating with the students who supported the goals of the Free Speech Movement. His brilliance lay in expressing what everyone else felt and knew, but could not quite articulate. News reports and photographs showed several students holding up signs that read *Stop the Knowledge Factory*. Whatever the New Left became, it certainly began as a revolt based on the students' rejection of a depersonalization that even President Kerr acknowledged.¹⁷⁴

Savio's plea, in its passion and spontaneity, spoke to the heart of the students' dissatisfaction, that Kerr's vision of the good life (or, more to the point, their future in that life) was reduced to a dull routine where their education was simply fodder for The Machine. The Free Speech Movement demonstrated that students were willing to strongly resist Kerr's ideal of the modern university as a

training ground for technocratic elites, which the students saw as merely training for technological drones, not an elite but a mere cog. Believing in the older, traditional definition of the academy as a place for a life of the mind specifically their own mind the baby boomers ran headlong into the modern world that they had hitherto been carefully shielded from. Finding what Mario Savio termed "depersonalized unresponsive bureaucracy," students at Berkeley and those who followed rejected the current state of the university, and eventually some rejected the university itself. A few years after the Free Speech Movement, students at other institutions voiced similar complaints; one wrote in his school paper that "education is the opiate of the student, who is only being groomed for a slot at Dow Chemical, where he will build a better napalm."¹⁷⁵

Paul Goodman, a noted humanist and an early supporter of the Berkeley students, called attention to the broader nature of the movement and the deeper issues Berkeley raised. Unlike many at the time, he argued that profound effects might follow the Free Speech Movement. The events at Berkeley were "not accidental" thought Goodman: "the movement for the outcasts has sparked and energized this more central revolution, and we will finally come to the real issues: the revival of democracy, the human use of technology, and getting rid of war."¹⁷⁶

Savio sought a human-scale university, one that would be responsive to individuals and not simply acting on the dictates of corporate committee decisions. The idea was not to stop the machine, *per se*, but to make the machine responsible

to its masters, and not the reverse, to shape the ends of technology to the needs of humans, rather than revise humans for the sake of the machine. Often portrayed as a leftist revolt against conservative values, it was in fact nothing of the sort. The rhetoric of the Berkeley radicals attacked the vacuous nature of the Progressive agenda.

Along with a common fear of the atomic age, other distinctly postwar motivations underlay the student protests which point to a retrograde, rather than a Progressive vision. Collier and Horowitz speculated that the discontent arose in part from a sense of living in a paradise lost and not a utopia realized. The affluence and plenty that most grew up with alienated the radical youth, and theirs was a rebellion based on a deep sense of loss. As the students moved away from the attitudes of their parents, the mainstream Progressive view, toward the radical outlook, they found themselves bound together, not with hope for the future, "but rather with a sense of loss: loss of community, of freedom, of breathable air; loss of something it was impossible to define decisively and impossible not to feel every day of one's life." One article noted that the students' problems arose from a "deeper disenchantment" manifested by "alienation in the midst of the apparent good life." To these Berkeley students, the material abundance of postwar America seemed trifling compared to the sacrifice of democratic values and the destabilization of communities that accompanied it.¹⁷⁷

This Radical denouncement of the Progressive vision was not powered by hope and confidence in the future. The Radical critique offered instead an exceedingly retrograde notion. Radicals sought the America they had been taught about, and not the one they inherited. The students did not want a brand new university, they wanted the university depicted in movies like The Absent Minded Professor. Their vision was more reminiscent of Bedtime for Bonzo than the costar of that film, Ronald Reagan, who would use threats of suppression of the student uprisings as a major selling point to capture the governorship of California, could ever imagine. Repeatedly, students and leftists argued for a retrograde vision driven more by Americana-based nostalgia than classic Marxist theory.¹⁷⁸

A variety of critiques followed on this theme as it spread. Some Radicals bemoaned the artificial quality of life created by the totality of bureaucratic hierarchies, which reduced the quality of life to a series of quantitative, scientific-styled measurements. Radical social critics accused technology of obscure ends and a surfeit of means. Still others attacked the econocentric nature of America epitomized by mass consumption and mass production ethics, creating a society based on materialism and oversupply, where the only standard of success was an abundance of things obtained at a high cost to individual persons and an even higher cost to communities.

The Berkeley attack on the regimentation of modern life struck responsive chords far from the Bay Area. Their critique, and their direct action, served as an

inspiration to many others as it spread across the nation. The radical critique, though it originated on the West Coast, penetrated deep into the heartland of America. Three years after the birth of the FSM a student writer in Omaha grieved: "Where is the Humanness? Mentally sterile mechanization is all that is visible," a dismal vision that would have been hard to imagine coming from Nebraska without the impetus of the Free Speech Movement pointing the way and presenting the Radical critique to a new generation.¹⁷⁹

Savio himself eloquently amplified these dissatisfactions in an essay entitled "The End of History," where his bitterest denunciation was reserved for the empty nature of the Progressive victory.

It is a bleak scene, but it is all a lot of us have to look forward to. Society provides no challenge. American society in the standard conception it has of itself is simply no longer exciting. The most exciting things going on in America today are movements to change America. America is becoming ever more the Utopia of sterilized, automated contentment. The "futures" and "careers" for which American students now prepare are for the most part intellectual and moral wastelands. This chrome-plated consumer's paradise would have us grow up to be well-behaved children. But an important minority of men and women coming to the front today have shown that they will die rather than be standardized, replaceable and irrelevant."¹⁸⁰

Across the San Francisco Bay from Berkeley another group was also busy rejecting the standardized, sterilized utopia as realized that so embittered Savio. In the process, they would not only fail to be "well-behaved," but would redefine "bad behavior" for the entire nation. They did not seek to spin out a grand critique of the Progressive vision, but to create a direct and viable alternative to it.

CHAPTER 4

RADICAL ALTERNATIVES

*Harmony and understanding / sympathy and trust abounding / no more falsehood or derision / golden living dreams and visions / mystic crystal revelation / and the mind's true liberation*¹⁸¹

While the students in Berkeley critiqued Kerr's vision of progress, a few small groups around the Bay Area, gripped by a profound sense of the possible, devised alternative strategies for the future. Beyond the FSM's critique of technology and the better life offered by the establishment the hip counterculture awoke discontent among a much wider population and actively sought to realize and create workable alternatives to the Progressive vision.¹⁸²

The overall philosophy of these groups provided a philosophical and spiritual basis for the precipitous decline of technological enthusiasm. To the counterculture worthwhile life was based on voluntary simplicity and sustainability. Though in the beginning they seemed a strange bunch, "expatriates living on our shores but beyond our society," their influence on later thought involved a wide range of issues, social, cultural, political, legal and economic.¹⁸³

These 1960s countercultures critiqued technological enthusiasm while attempting, with uneven results, to provide various alternatives to what they considered the mainstream belief in technological progress. Seeking a reduced role for scientifically derived and technologically induced values, goals, and standards, these countercultures proposed options ranging from "throwing one's

body on the gears of the machine" to "dropping out" entirely. They believed that the March of Progress led to a usurped culture, eclipsed democratic values, destabilized communities, a dehumanized society, and a dirty planet.

In truth, only a small group of Americans chose to drop out of society by taking LSD or to burn banks in California or undergarments in Atlantic City. Still, the existence of genuine, lively, and viable (even if short-lived) countercultures in the decade, particularly in a nation that throughout the postwar era celebrated its consensus, valued agreement, and practiced conformity, provides a historical phenomenon worth studying in its own right. Moreover, these alternative movements influenced events and cultural perceptions well beyond their followers. Though not generally noted for their sense of realism, the countercultures promoted skepticism about technology in order to replace uncritical enthusiasm. Dissatisfaction with technological solutions, hostility towards consumerism, denial of middle-class standards of success, and ennui from seemingly constant over achievement all contributed to the declining faith in the Progressive model. These attitudes acquired social and cultural validity as technological threats, both direct and indirect, were amply demonstrated through a steady series of technological and environmental calamities.¹⁸⁴

Yet while these countercultures both rejected and redefined notions of progress, many cultural historians have dismissed their influence, in spite of Theodore Roszak's urging in 1969 that "counter cultural young are significant

enough both in numbers and in critical force to merit independent attention."

Overshadowed in serious histories by the New Left and other student outbursts, the countercultures are marginalized or simply omitted. Historian David Steigerwald justified ignoring the countercultures in his work by stating:¹⁸⁵

Let me say what this book is not. My purpose has taken me away from the lighter side of the sixties. I haven't spent much time on rock and roll. The "flower children" who attracted so much attention at the time have drawn little consideration from me. Nor have I spent much time on the generation of Aquarius. I am not dismissing this part of American life as unimportant - whatever the decade of the sixties was or wasn't, it was a time of great fun, of deep sincerity and innocence, and of extraordinary release. I merely believe that the flamboyant aspects of the sixties were the consequences of historical forces rather than forces in and of themselves, and so I have not focused on them. If this strategy tends to make an exciting period rather bland, I can only hope that the soundness of the larger interpretation makes the method worthwhile.¹⁸⁶

These "flamboyant" events, frequently dismissed by Steigerwald and other historians as a flash in the pan, were built on a foundation of a sustained critique of the mainstream culture's values, standards, and goals and were enjoined in order to attempt new and different options and alternatives to the prevailing consensus. In short, these countercultures redefined progress. Both the end goals and the measurement and assessment of success were recast according to a set of alternative values. In both subtle and garish ways, defining progress in qualitative rather than quantitative terms augmented the Progressive consensus. To ignore the influence of the countercultures is to miss a true sea change in American culture and society.

There are several reasons the countercultures have not been taken seriously by period scholars. First, the countercultures were a diverse group, a fact which sometimes obscures their common motivations. Second, they lacked coherent leadership and were therefore difficult to understand. Third their public cultural manifestations, dubbed "happenings" and "scenes" were nebulous, and much harder to report than clear-cut singular events. Moreover, this coverage relied on personal anecdotal accounts, making it more difficult to factually interpret the reports that do exist. Finally, mainstream media coverage focused on the sensationalistic aspects and not deeper issues, and this coverage all too often was buried beneath an avalanche of slick marketing, trendy promotions, and high-gloss, low-rent, pornographic voyeurism.

The differences between the student left, the hippies, and other cultural dissidents created distinctions few at the time could accurately frame. Participants did not always see themselves as part of one or another separate and discrete movements, particularly in the case of the oft-perceived split between the Hippies and the New Left. The flower children, the student rebels and their New Left followers, Feminists, and other emerging movements share deeper common bonds than the sometimes divisive superficial distinctions would make it seem. Throughout the decade no single movement, no firmly set ideal, no one path ever held total sway. Examining the general dissatisfaction of the time as a collection of discrete subsets provides little insight, and worse, provides a false sense of the

events, one that misses the elasticity, fluidity and porous nature of these groups and the decade itself. A far more productive analysis examines the common threads in these groups, particularly in their formative period, before they were polluted, perverted and typecast by sociologists and the national media.¹⁸⁷

In the early 1960s Berkeley, California contained a mixed bag of lifestyles and affinities that would merge into the countercultures. The writer of the following passage can furnish labels for people, but can not fashion a basic distinction large enough to separate them into discrete subsets. The combination of the saints and the sinners, clearly apparent here, demonstrates why the serious should not be discounted because of the frivolous.

Admittedly, its ranks contain a quota of the hipsters and revolutionary zealots concerned with little but the right names and phrases, the devotees of the latest chemical highs, the lunatic fringe of the avant garde. But here also are a surprisingly large proportion of the most intellectually serious and morally alert students on campus, fellowship holders as well as veterans of the Mississippi wars. And sometimes the lines are extremely difficult to draw.¹⁸⁸

The countercultures embodied and provided collections of alternatives to tradition, rather than any solid and easily defined group or movement. No single fashion or haircut, text, creed, dogma, or set belief served as a general entrance requirement, though drug use frequently served as a touchstone, exemplified by the psychedelic query, "Are you experienced?" Rather than consolidating under a single banner or idea, the countercultures existed as a vague collection of movements, groups and individuals, comprised of people who bought a little of this

and a little of that, in varying amounts and at various times. This cross-fertilization continued despite the fact that many of these movements contradicted each other: the student Left sought to capture and rebuild a system that the hippies wanted no part of, various civil rights movements sought a success and acceptance the hippies eschewed, and the women's movement promoted a changing status which, even if the countercultures paid lip service to it, was rarely achieved.¹⁸⁹

The Left, the hippies, and the women's movement all discounted leadership in their unique ways (fascists, power trips, and patriarchy), but all agreed upon rejecting it in the end. In this obvious vacuum many different voices served, in the words of the Grateful Dead's Jerry Garcia, as "signposts to a new space." A few influential people emerged in each segment, but the countercultures had no single organization, such as the National Association for the Advancement of Colored People (NAACP) or the Student Nonviolent Coordinating Committee (SNCC) in the civil rights movement, created, elevated, and perpetuated to act as spokesmen. The New Left tried to create leaders like Mario Savio, who demurred, while attempting to defend itself against people with individual agendas. Even the most cursory reading of the 1967 Palmer House meeting, an attempt to unify all the leftist elements in America, makes it clear that unity was not within their grasp despite their drive for communality, and such diffusion in a political organization always spells death.¹⁹⁰

The lack of a central core or key leader facilitated an easy dismissal of the counterculture's values and impacts by pointing up the inconsistencies, paradoxical values, and opposing choices of means and ends that typified the countercultures. The countercultures accepted no single leader, as could well be expected from a movement that stressed intuition, personal freedom, individual choice, tolerance, and the liberty to frequently change one's mind, as summed up in decade's individualistic mantra, "It's your thing, do what you want to do / I can't tell you, who to sock it to." Indeed, a social movement that walked around singing "don't follow leaders, and watch your parking meters" and "you don't need a weatherman to know which way the wind blows" denied the function of leadership and could not, by its own definition, have leaders. Yet, unlike the Left, the countercultural elements focusing on social and cultural change did not need to be as unified as those attempting political change. This diffusion, while fatal to the Left, proved nourishing to the countercultures. In this sense the countercultures held a much stronger appeal to the individualistic notions of the times than party discipline, be it Communist or Republican, required and demanded.¹⁹¹

Conversely, the counterculture (often intentionally) projected a distorted image, one intended to reflect the observer and not the observed. As noted, the coverage was highly subjective and people read into it what they wanted. This distorted and misleading coverage, generated at the expense of serious analysis, rarely examined the deeper meanings of the countercultures critiques and did not

attempt to comprehend the values and thoughts that underlay them. Shortly before he died in 1996, Timothy Leary explained the numerous interpretations of his role in the sixties by stating, "everyone gets the Tim Leary they deserve." The decade itself proved no different.¹⁹²

The countercultures were poorly served by the media, whose coverage tended toward superficial observations at the expense of examining the underlying values, missing in the process the deeper and far more profound revolt. First of all, colorful and zany antics make for much easier coverage than in-depth examination. Second, the libertine nature of some aspects of the movement, both in terms of sex and drugs, frequently inspired its own over-coverage, for despite the professed puritanical nature of American society, appeals to the prurient nature of readers sold well, particularly if pictures were included. Third, many of the most deeply committed counterculturalists deliberately avoided publicity, in part due to their belief that "the revolution will not be televised" and, more seriously, because such exposure only drew attention and focus from the police and other authority figures hostile to both the movement and its practitioners. Fourth, the rapid absorption of the movement's language, symbols, imagery, and style by marketing and advertising agents frequently misrepresented and always grossly simplified the real aims of the radical countercultures.¹⁹³

There are deeper causes of the poor coverage the counterculture received at the time and since then. A movement that truly represented a counter culture, a

different ethic, a different accounting system and, indeed, a totally different ethos could not, and by deliberate design would not, fit comfortably into the forms and formulas of the mainstream American media. In the largest sense, the countercultural ethic of voluntary simplicity, unlike fashion statements, was an ethic that simply would not sell not just to the American public but, more importantly, to the media advertisers. Fairly and dispassionately presenting the exact opposite of what the advertisers were selling, the Progressive vision writ large, would have been counterproductive to Progress, and if done well, could court bankruptcy for the system in the larger sense and the industrial complex and their advertisers in the short run. From this perspective the countercultures were far more dangerous to society at large than the students of the Free Speech Movement ever hoped to be.

Both the students and the emerging hip movement across the bay were largely ignored until a major media event thrust them into the spotlight: The 1964 Free Speech Movement for the emerging student Left or the 1967 San Francisco Be-In for the hippies. Despite the preference of historians to wax scholarly about the New Left while derisively dismissing the hip counterculture as kids or, more to the point, kiddies, apprentice hipsters practicing style without substance, it is precisely the hip countercultural style, and not the students' posturing which still defines the sixties. The hip counterculture proved to be of far greater cultural importance in the long run than the actions of the student left, and remains the symbol of that time which resonates into the present.¹⁹⁴

The Human Be-In: *Can you picture what we'll be, so limitless & free?*¹⁹⁵

The hip countercultural style that spread so rapidly across the nation grew out of the same California cultural hothouse milieu as the Bodega Bay protests and the Berkeley Free Speech Movement. Though Rachel Carson once noted that "beginnings are apt to be shadowy," the hip segment of the counterculture arose out of beginnings that are rather easy to trace, though few observers at the time got it right. Much of what the papers would dub the "hippie craze" was already happening before the press thought up cute names like "flower children" to define it.¹⁹⁶

While the FSM was concerned with issues which were singular and frequently site specific, the broader countercultural movement consciously created an alternative secular culture within the dominant culture itself. This cultural radicalism was felt by the participants to be much stronger than politics. Cultural transformation could transcend political change.

The hip counterculture shared the radical students' outlook, coming as they did from virtually identical backgrounds, but with no multiversity to focus their lives and frustrations on, their complaints and solutions took on a wider and more social and cultural focus. Both movements also had a kaleidoscope of participants that made neat packaging of their followers, particularly at the beginning, difficult.

Among the hippies in the The Haight-Ashbury are college graduates, people who have left good jobs, dropouts, men who have completed their military service, girls who couldn't stand their mothers, (and boys their fathers), kids of high intelligence from well-off homes (from whence remittance money comes), drifters and misfits and a smattering of the human flotsam that might be expected to drift along with any crowd.¹⁹⁷

A local newspaper first noticed them in late 1965, hanging out at the Blue Unicorn coffee house in a cold, fog-shrouded, Victorian San Francisco neighborhood bordered on two sides by Golden Gate Park and known locally as the Haight. At that time the reporters used the terms "hippies," "beats," and "heads" interchangeably. San Francisco provided specific elements for the setting of the hip counterculture in the same way that Berkeley did for the student movement. One writer noted the unique aspects of San Francisco that contributed to the beginnings of the movement:

There were enough half-baked notions, vacuously expressed, running loose in San Francisco during those years to give pause to any discriminating mind; but no one seemed to discriminate too much, and a great deal of what was written about the players in this drama was just as nonsensical as the theorems put forth by those players.¹⁹⁸

The hippies also took advantage of another aspect of the San Francisco community that the Beats had previously seized upon, its rather casual attitude about drugs and intoxication, a tolerance dating back to the Gold Rush days of the infamous Barbary Coast area and notorious during Prohibition. The Beats embraced this with less vigor and little sense of mission compared to the new wave. While the Beats settled for sipping coffee and cheap wine and smoking a little marijuana on the side, the hippies possessed a powerful new drug to bind them together and, at least in the beginning, to give the movement a central vision which helped transform it from just another *avant garde* to a mass of people large enough to be considered a counterculture. "San Francisco, through the peculiar tolerance

and isolation of its culture, had spawned a uniquely open and confident manifestation of the faith in psychedelic drugs, which made it the capital of psychedelia."¹⁹⁹

Though frequently mistaken as an outgrowth of the Beats, the hip culture was more of an escape from the Beats than any sort of amplification of their themes. This hippie culture was a mass movement, as opposed to a literary *avant garde*. At the true creative height of the Beats, who are frequently cited as the hippies' immediate predecessors, they were only a handful of writers and visionaries. At its height, the participants in the counterculture were vast in comparison. Mass media spread the movement quickly throughout the nation and, unlike the Beats (who seldom ventured off Manhattan Island or out of North Beach in San Francisco, where they endeavored to live as expatriates without leaving the country), hippies could be found wherever one found TVs and magazines: small towns, rural communes, established districts in larger cities, most of the better colleges and universities and all the not-so-good ones, too. The counterculture proved far more geographically diffused, one indication of its widespread adoption.²⁰⁰

The hip counterculture in the San Francisco area began on June 14, 1964, when an audacious band of travelers known as the Merry Pranksters took off to visit the World's Fair in New York in a 1939 International Harvester bus painted in wildly colorful fashion and loaded with electronic equipment and LSD. Their cross-country odyssey would have truly surreal reverberations. It was out of this psychedelic

experience that the first large-scale countercultural public events emerged, staged by noted author Ken Kesey and the Merry Pranksters. Posing the query, "Can you pass the acid test?" these large parties were fueled by LSD and grew out of the Prankster experiments with psychedelic drugs at Kesey's rural La Honda home halfway between Stanford and the Pacific Ocean in 1964 and 1965.²⁰¹

By the end of 1965, the Pranksters decided to expand their experiment and take their message to a wider audience. Failing to plan ahead well enough to secure a public location, they settled on a house in San Jose and, on December 4, 1965, hosted the first of the several very public Acid Tests. The San Jose event was followed in rapid succession by similar Acid Tests at Muir Beach, Palo Alto, Portland, and Watts. The initial events were so successful that a larger three-day event, the Trips Festival, was organized by Stewart Brand. Held in January of 1966, at San Francisco's Longshoremen's Hall, this festival publicly brought the growing number of young, underground LSD users into contact with the technological possibilities of rock and roll in what would be a long and fruitful partnership. The "San Francisco Scene" and "San Francisco Sound" grew from the attempt to bring "the sights and sounds of the Trips Festival" to a larger (and paying) audience.²⁰²

An overflow capacity crowd in excess of ten thousand people filled Longshoreman's Hall over three days to join Kesey, Allen Ginsberg, Neal Cassady, Big Brother and the Holding Company and the Grateful Dead (the Acid Tests' house

band) in having an "LSD experience without LSD." In that respect they utterly failed, as it turned out just about everything edible or potable was spiked with LSD. Newsweek found the event a bit difficult to describe, settling for "Shrieking, throbbing drum-bursting music" and "weird and garish lighting arrangements." One participant settled for a clearer, "the Trips Festival was madness personified." After the Trips Festivals, enough hippies had reached a personal epiphany while separately tripping together that they increasingly felt themselves to be the incarnation of the dawning of the New Age, the Age of Aquarius. In essence, Kesey's private parties ballooned into a cultural touchstone. Like the music itself, these quasi-private events became public and, eventually, commercial ventures.²⁰³

National awareness of the movement rose to widespread public awareness through coverage of the emerging rock scene and through a collection of events known as the Human Be-Ins. A series of feasts and festivals in the Haight created a growing sense of community throughout 1966, combined with the Fillmore and Family Dog concerts, to lead up to this very public and well-publicized beginning. One writer caught the mood, stating: "The emphasis is on being rather than becoming. Sit-ins are replaced by 'be-ins' - carnivals of dress, music and discussion where existence is explored - often with the aid of LSD or pot." These events garnered national media attention, frequently accompanied by large-scale photo essays. This coverage proved instrumental in transforming a small underground into a national movement.

The original Human Be-In occurred in San Francisco on January 14, 1967. "On the stage, gathered up in the Coming-Together, [were] the poets and the priests," and, of course, the rock bands. Allen Ginsberg, the Hell's Angels and Timothy Leary all grooved to each other, the bands played, Owsley distributed thousands of doses of his already famous LSD for free. Billed as a "powwow to celebrate and prophesy the epoch of liberation, love, peace, compassion and the unity of mankind," according to the press releases announcing the event, the Be-In promoted a new and different cultural ethic. Wide coverage, first in the emerging underground and then the mainstream press, made the event "legendary before it happened" and even more so after, with Newsweek calling it "a love fest, a psychedelic picnic, a hippie happening."²⁰⁴

Human Be-Ins rapidly spread to other major urban centers, tapping into a national openness toward the emerging hip culture. Los Angeles, Seattle, Chicago, and even blue-collar Milwaukee held similar events within a few months of San Francisco's celebration. Coverage in the emerging underground press heralded these events as the beginning of a new era. The East Village Other described the New York Be-In, held at the appropriately named Sheep Meadow in Central Park, in their own unique style:²⁰⁵

Like, People grinned like happy idiots at each other all day, exchanged flowers and stones and curtain rings and kisses, grooving together in LSD raga, but everybody was doing his very own personal thing together, Be-In acquaintances likewise, but the Tribal Drum was the only thing that held all twenty-thirty thousand of us really together.²⁰⁶

The literature of the Be-Ins singled out some of the same societal problems the FSM had pointed out but went further, stressing a retreat from the modern technological world and the creation of a new age or at least a new cultural ethic based on human needs and not technological imperatives, and that moved at a human pace rather than being regulated by the rhythms of the machine. A culture free, according to its devotees, from the quantitative materialism that permeated America. Moreover, and most importantly, they sought to create a stable and viable community out of these celebrations. Distinct from the self-congratulatory, groovy tone of the East Coast writers in the East Village Other, one West Coast writer gravely stated: "This meeting was a Baptism, not a birthday party."²⁰⁷

This large-scale, extremely public movement did not last long. The national media descended on the Haight without consulting the would-be hosts, proclaiming that the youth of the nation would gather for a Summer of Love later that year. In the meantime increasing numbers of runaways and the illegality of marijuana and eventually LSD stretched the city's legendary tolerance to the breaking point, well in advance of the predicted summer influx. The result of the publicity, including a hit record extolling San Francisco's alleged virtues was, predictably, a disaster. The hoards of media on hand to cover these problems only seemed to exacerbate them further. Hunter S. Thompson stated in an often copied article: "'Love is the password in the Haight-Ashbury, but paranoia is the style."²⁰⁸

In October 1967, following the disastrous Summer of Love which left in its wake addiction, rape, disease, and murder rather than good vibes Ron Thelin, owner of the Psychedelic Shop, organized a funeral for the movement, which he termed "The Death of Hippie." Anointing the deceased "Beloved Son of Mass Media," Thelin hoped to counteract the publicity that had turned Haight-Ashbury into a slum for junkies and wasted runaways. Time called it "the most frolicsome funeral in memory," and others joined in the parade of obituaries. For many on the scene, the hippie heyday slipped below the media horizon as suddenly as it had appeared.²⁰⁹

The Haight-Ashbury scene may have died, but the hip counterculture did not. Many hippie trappings and attitudes continued to thrive, some good and some bad. William O'Neill speculated that, "while the hippie movement was easily slain, the hippie style of life was not." If he intended the word "movement" to substitute for fad or style, he was substantially correct. But he erred seriously in failing to realize that the style of life *was* the movement, and the movement was *about* the style of life. When Jerry Rubin, noted student activist finally caught on he decided:

At about the point, the hippies from San Francisco began coming to Berkeley, and they invited the Berkeley radicals to come to their Be-In in Golden Gate Park. When the day of the big Be-In arrived, I went and I make a political speech, it went over with a resounding ho-hum from the audience. I became very influenced by this, I thought maybe the real battle of America is not politics, its lifestyle. And lifestyle determines politics."²¹⁰

The Radical counterculture, its style, and its notions did not die in 1967, but flourished all over America in a multitude of ways. Hippie style (like any style) was easily and rapidly incorporated into fashion trends. By the summer of 1968, only one year after the fabled Summer of Love, even middle-class suburbia craved a bit of the hippie experience, and Mom and Dad could import Trips Festival decorations into their backyard patio party. The burgeoning rock and roll industry received a substantial boost from the hip counterculture both in record sales and in increased opportunities for live performance. Finally, those engaged in marketing the youth culture easily absorbed the iconography of the movement, churning out tons of flower power products and reams of faux-psychedelic artwork. In fact, the absorption of a broad spectrum of countercultural trends into mainstream thought and tastes was quite rapid and aided the continuation of the movement.²¹¹

Despite such dire predictions, perhaps the most striking thing about the hippie phenomenon is the way it has touched the imagination of the "straight" society that gave it birth. Hippie slang has already entered common usage and spiced American humor. Department stores and boutiques have blossomed out in "psychedelic" colors and designs that resemble animated art nouveau. The bangle shops in any hippie neighborhood cater mostly to tourists, who on summer weekends, outnumber the local flora and fauna. Uptown discotheques feature hippie bards. From jukeboxes and transistors across the nation pulses the turned-on sound of acid-rock groups.²¹²

The San Francisco and New York "hippie" spectacles faded quickly, but those "scenes" were not the heart and soul of the movement. Their collapse followed the departure of the critical core of the hip counterculture from those

locations. Media commentators described the movement as withering, when actually much of it dropped off the media radar by choice.

One frequent criticism of the hip counterculture was that it was parasitic, consuming without contributing to the greater common good. The movement's most profound analyst and greatest academic defender, Theodore Roszak, answered this charge and directly tied the "hippies" contribution to the greater technological good. "But *of course* they do. We have an economy of cybernated abundance that does not need their labor, that is rapidly severing the tie between work and wages, that suffers from hard-core poverty due to maldistribution, not scarcity."²¹³

The danger lay in a more profound notion than the "splendid desire for nothing." Those simple urges incorporated easily enough into a marketplace structured to sell intangible desire *uber alles*. The hip vision conjured a world not simply opposed to the status quo mainstream but, unlike the political left, which sought structure and change within the system, proposed transcending the older system altogether through self-devised alternatives. Countercultural thought enthusiastically extolled the possibility of this change on a practical level and sought to accomplish sweeping social changes, through both grand transcendental experiences and simpler shifts in day to day life involving diet and living accommodations. This positive, idealistic outlook struck many as highly attractive, particularly when confronted with the frequent pessimism expressed by more mainstream commentaries, a fact that frequently won them accolades in the early

days. A few months after the first San Francisco Be-In, Look waxed blissfully about the hippie movement, proclaiming: "I'M A HOPE FREAK, and in a thousand words it couldn't have said more about the special brand of optimism that they are selling - or, rather, giving away - in an age of despair."²¹⁴

The hip counterculture offered a total reevaluation of the Progressive ethic. It expressed a dismal skepticism toward Progressive achievements and fear about the implications for American society and culture should further "progress" continue unabated. They attacked the traditional definitions of success such as a house in the suburbs and a nice car, and lambasted methods employed in its attainment, college, careers and stock portfolios. They sought a new framework for knowledge, one based on personal and collective experience and directly opposed to scientific rationalism, which the counterculture sought to relegate to the status of a specifically useful tool and not an overarching intellectual guide. One sociologist who investigated the "hippie scene" in its early days remarked: "Today's radical young people are not just anti-knowledge. In what may be a very effective way, they may be creating new styles of knowledge for the rest to the century."²¹⁵

In its most basic arguments the hip counterculture stressed, as Savio did in the essay, "The End of History," the emptiness of the Progressive conclusion, a dehumanized system, and the hollowness of its vision, summed up in the bitter euphemism "plastic." The primary disenchantment the hip counterculture felt toward

American society arose out of a litany of complaints and dismissed the students' solutions of accommodation and inclusion.

It is a generation at best only moderately impressed by, and in the end, extremely totally disillusioned about, a society glutted on affluence at its top and middle but undernourished at its bottom, a society insensitive to human values and human relations, caught on a treadmill of goods-getting and obsessed with the exorcism of psychological and ideological demons. In the face of this dehumanizing prospect, many young people offer themselves - either in wholehearted assent or in a grim act of will - to the gods of mass government, mass industry and commerce, mass education and the media. But more and more of them draw back, stop short and drop out.²¹⁶

Within the hip counterculture this critique took on a sharper focus with a clear idea emerging that tied together resentment and scorn for the values of accommodation, assimilation, and absorption stressed in American Culture. The hip counterculture's rejection of the world was in many respects reminiscent of the Berkeley critique, and for good reason. Widespread rejection of the generally defined status quo generally defined, an attitude the students shared with the countercultures, bound them together into a common movement. Counterculturalists frequently echoed Mario Savio's lament about the machinery which took over everything, appropriating his images and icons if not always his powers of articulation. "It's just a large machine and you don't know who runs that machine or what. It's just there. It is just cutting out more people from the same machine. Even the cream of society, they become machines, you know." The radical rhetoric, beyond spreading to students at other schools, escaped the

confines of the campus and filtered out into the wider world of American society, where individuals and groups sought different alternatives to the machine society.²¹⁷

Many of us feel alienated and disenchanting with our castrating, hyper-accumulative, patriotic war-bent society, yet feel that the answer must not simply replace the present parkinsonian bureaucracy with another, pursuing the very same anti-goals with different slogans, equally indifferent to humanity and individual expression, propelling itself toward self-annihilation by ever greater sacrifice to the gods of Technology, Scientism, Conformity and Nationalism.²¹⁸

The counterculture created one source of general unity through its rejection of technological solutions and Progressive values. Seeing American culture as largely "fake," in the words of Timothy Leary, or "plastic" in common parlance, the counterculture turned to a romantic conception of nature and the natural world. Seeking a less complicated alternative to modern America society, one with more stress on community and cooperation than on competition and accumulation, the hip counterculture adopted a loosely defined tribal perspective emphasizing personal experience in a natural setting. Though perhaps failing to articulate a clear and precise understanding of scientism, they nevertheless expressed a desire, if not to overthrow, at least to commingle other systems of knowledge and understanding. In attempting to define a standard of success beyond the confines of The Man In The Gray Flannel Suit, they formed a conception of progress that steadily moved away from the advancement of science and technology and redirected improvement toward mystical and inter/intra-personal goals. Writers, from both inside and outside the counterculture, noted the radical attacks on Progressive goals and

methods and the usurped culture, eclipsed democracy, destabilized community and filthy planet left in its wake. Progress based on scientific advances or technological development that came at the expense of constrained societal change was not progress at all. Most of what the Progressive triumph promised to the victors turned out to be artificial and plastic, a transformation that rendered the world weightless, stripping the mass out of the universe and leaving mere replicas of the reality that technology steadily replaced. The hip countercultures' addition to the student critique sought to counter this, offering a new twist, the quest for a *natural* way to live. They wanted the real thing. Tim Leary stated:

I'm making the prediction that thousands of groups will just look around the fake-prop-television-set American society, and just open one of those doors. When you open the doors, they don't lead you in, they lead you out into the garden of Eden, which is the planet. Then you find yourself a little tribe wandering around. As soon as enough people do this – young people do this – it'll bring about an incredible change in the consciousness of this country, and of the Western world.²¹⁹

Countercultural literature frequently devoted itself to a depiction of the "new" people who would incorporate the "incredible changes" these events would unleash. These depiction's initially focused on the hip counterculture's differences from Main Street, USA, which was dismissed and decried as a culture driven by and for machines. Technological progress accomplished only the most Pyrrhic of victories, one where "the hunter was captured by the game," and the technologies created for human liberation created instead a slavery to the artificial, laboring under the delusion of control.

A hippy physically resembles a human being, but inwardly he is quite different from the man of the industrial society. . . . If we were truly free, we would find equal comfort with or without a television, or a car, or a government. . . . Mass media, machines, and government would be services, not instruments of regulation and institution of control. . . . Do you accept the assumption "Progress is good and progress is production" . . . Modern science has grown more sophisticated explanations for the same things. . . . We delude ourselves, believing that mastery of a good, functional model enables us to master and control the phenomenon itself. A hippy is not satisfied with a model. He wants the real thing.²²⁰

Early editions of the West Coast underground presses make constant reference to the radical critique of the problems of technology. Again and again, these early writers focus their discontent with the technological world on its particular removal from the natural world and its estrangement, bordering on hostile warfare, from nature. The healing of this estrangement brought about by technological development was crucial to resolving the imbalance inherent in the Progressive's "new and better" society. Particular reference to the ready potential of holocaust due to atomic weapons only reinforced the negative aspects of modern society's artificiality. "The substitute concrete jungle is more real and meaningful to us than the natural one. The cave with its fire has grown into a gadget-laden fortress with an ICBM at the door." Humanity needed to find a balance with nature and become a part of a larger whole.

It's the machine world. A place made of iron, steel, Formica and smog, held together by epoxy glue, sheet metal screws and the combined efforts of several billion people. Its creation lies somewhere in the dim past when man first saw himself as a being set apart from the plants and animals around him, when his ever-growing ego told him that he was no longer a part of but something greater than the natural environment.²²¹

This critique was not unique, and several academics offered even more severe criticism, but writers such as Lewis Mumford and Jacques Ellul offered no alternative, indeed, they shared with Kerr a sense of the inevitability of it all. Calling a halt to the March of Progress, the countercultural radicals sought to create communities in which technology complemented nature rather than conquering it and where the natural world was more closely integrated into everyday life. Nature was not a force beyond humanity to be opposed, oppressed, and obliterated. Nature was life.²²²

To that end, the counterculture sought not to "put your bodies on the levers" of the machine and so stop its functioning. Rather it endeavored, as the title of an essay in the Chicago Seed put it, to "Freak Out the Machine . . . attempting to incite the enemy to self-injury through cultural destruction and the scrambling of meanings."²²³

The counterculture frequently singled out for particular scorn technology's most shining attribute, progress. The standard technologically enthusiastic definition of progress encompassed something which was, *a priori*, positive. Progress for its own sake increasingly loomed as an unwelcome prospect. In their own unique elaboration of the standard sixties condemnation, that of the "sick society," underground writers framed progress itself as the disease that ailed the nation. "This society is so dependent on continuous growth, continuous development, that it cannot control itself. The economy is based on it.

Uncontrollable growth. In a living organism it's called cancer. In our society it's called progress." A student leader remarked with obvious disdain, "It's an apolitical systemicicide."²²⁴

To counter these suicidal tendencies in modern American society the counterculture attempted to establish an alternative life based on voluntary simplicity and self-sufficiency. Through these efforts to create a human-scaled life in the midst of a machine-dominated culture, they worked to create a model, or better yet, to mark a path to a new space. If most counterculturists did not choose to drop out completely, they could still incorporate these ideas and values into their lives. Their desire for a more natural life with appropriate technology and a voluntarily reduced standard of material acquisition, where the purpose of life centered on self and community instead of career and consumption, resulted in a far more widespread, if less publicized, movement than the FSM in Berkeley.

Interestingly, one source of the yearning for the natural way of life was expressed through variant of strange form of technological enthusiasm. In some ways the countercultural experiment arrived at a tragic end, sold out to the very culture they were fleeing from in the first place. Worse though, they were destroyed from within by their advocacy of this strangely twisted technological enthusiasm, one with profound ramifications.

CHAPTER 5

THE STRANGEST TECHNOLOGICAL ENTHUSIASM

Skipping through the lily fields, I came across an empty space / It trembled and exploded; left a bus stop in its place / The bus came by and I got on; that's how it all began / There was Cowboy Neal at the wheel of the bus to never-ever land.²²⁵

Though radical critiques and alternatives diminished technological enthusiasm, they did not destroy it. It declined, but did not disappear because implicit in the concept of appropriate technology was the idea that some technologies did indeed have beneficial applications. Viewed in this light, it is not odd to find that enthusiasm for technological solutions cropped up in new situations. In one area in particular, the countercultures advocated an outright technological solution, though it was not exactly received with open arms by the usually enthusiastic Progressive status quo. In part, the rejection of the psychedelic solution to the problem of spiritual impoverishment lay both in the origins of the problem and, more specifically, in the countercultures' definition of both the problem and the solution. What the countercultures set out to rectify was a perceived absence of spiritual enlightenment in the modern technological world, an absence so perfectly evidenced by advent of nuclear weapons. The hip counterculture also endeavored to create a framework for knowledge and understanding based on their personal lives and experiences, rather than on abstract scientific data and explanations. They attempted to solve the problems of spiritual bankruptcy through the technology of pharmacology, using those drugs classified as psychedelics.

In more than one sense these drugs became the decade's special technological problem child. Within the countercultures drugs did more damage than any other single aspect, offering a true siren song that wrecked millions of lives. The American drug problem, for which all factions of the counterculture legitimately share partial blame, lingered, spread, and expanded into one of America's greatest social dilemmas. Yet, the psychedelic experience in particular left a strange residue across America that, in the end, was not even contingent on having personally taken the drugs.²²⁶

The drug issue remains difficult to approach for several reasons. The substances under consideration were, and continue to be, illegal. Possession and use were fraught with fear, guilt, and heavy criminal penalties, all of which interfered with nearly every aspect of dispassionate investigation. Panic and recriminations dominated the statements of those who unreservedly condemned all drug use. The extremity of the national responses at both ends of the spectrum made a middle ground nearly impossible to find or define, at the time, or at any point since then.

The generation of the sixties did not discover psychoactive drugs, many of which can be traced to the dim recesses of prehistory. Nor did they merely dabble in their use. Instead, they diligently mined and embraced the entire enormous pharmacopoeia which modern technology provided, in such a way that massive social problems followed in their wake. Despite the fact that "God in a pill proved a short-lived religion," many young people with "imagination permanently bedazzled

with visions of teleological verity" sought enlightenment, escape, or both through drugs. Their explicit rejection of established norms and values exemplified one aspect of the social problem they represented.²²⁷

That rampant drug use became a problem during the sixties is an unassailable historical fact. The common view that the countercultures alone were responsible for the problem, with no blame to be laid upon society at large, is somewhat problematic. The actual causes for the sudden increase, both in the number of users and in the types of drugs used, are hard to accurately pin down even in retrospect, though a plethora of possible reasons and excuses have emerged. The commentators of the day lamented the crisis more than they illuminated any real sustaining cause for it. One writer stated, "it is hard to dissect anything as nebulous and yet as real as the climate of alienation that has allowed the diffusion of drugs in the youth culture." Even serious researchers were often hindered by the fatuous reasons expressed by drug users for their habits:

In general the explanations proffered by those committed to repeated drug use combine facile rationalization, obvious superficialities, sweeping generalizations and bitter statements castigating our materialistic dehumanizing society.²²⁸

Still, the sixties were the decade where Bob Dylan chanted "Everybody must get stoned!" Though his intended meaning might have been somewhat different, its inference was clear enough to many. The widespread drug problem cannot be blamed solely on the hip countercultures, since they were preceded by a smaller

underground drug cultures which had already passed through several heydays. Moreover, many aspects of drug use have ramifications that exceeded the scope of the countercultures. Not even the popular advent of chemical stimulation for recreational and spiritual purposes can be strictly described as a "hippie problem." Marijuana, LSD, and a wide array of stimulants and depressants were found not only in Haight-Ashbury, but also in New York City penthouses, the United States Naval Academy, the hallowed halls of academia, and the rice paddies of Vietnam. Although Woodstock was held up as an exemplar of hippie drug use because of the public stage announcements warning the crowd of a quality problem with the drugs circulating throughout the audience, drug use was also a topic of conversation on at least one Apollo mission.²²⁹

The drug problem of the sixties remains a social issue today, a problem radically different from that of earlier decades and with a long and profound residual effect. The drug abuse problem of the sixties proved radically different from Demon Rum or the marijuana of Reefer Madness days, or older forms of narcotic drug abuse which had been confined predominately to a stable, definable subcultures: black ghettos, jazz clubs, and artists. The sixties drug crisis, fueled by newer and extremely powerful chemicals, created a climate where marijuana use was often discounted as the *least* problematic abused substance (aside from its "gateway" functions), and alcohol abuse was rarely considered a problem at all. The new drug

fashions also permeated every level of American society during the decade, invading every niche of the socioeconomic spectrum.²³⁰

It is necessary to carefully define and separate out the many facets of the drug problem of the sixties in order to examine specific aspects of the hip enthusiasm for this technology on any sort of meaningful level. In part, much of the confusion about drug issues results from taking a simplistic, single-bullet approach to what was a highly segmented question. Drugs were and remain a multifaceted and complex social problem, arising from disparate causes and not amenable to unilateral solutions.

That being said, the overall scope of the sixties drug crisis was huge. A wide variety of diverse substances (virtually anything that, intentionally or incidentally, had a euphoric side-effect) fell under the rubric of "the drug problem," and the mere hint of any new high invited overreaction, as illustrated by the apocryphal banana peel hoax, which began, almost predictably, in Berkeley when a notorious underground paper printed a tongue-in-cheek interview which expounded upon the psychedelic properties of banana peels. Press services spread the story as truth, maybe. A world wide conspiracy was noted by some who believed, or at least announced, that the hit song "Mellow Yellow" by the British folk singer Donovan, was a coded message to the young advertising the fruit's heretofore unknown properties. Some supermarkets sold out of bananas, others refused to stock them. Other substances were not so amusing. Some were old, with long, well-detailed

histories. Marijuana, cocaine and heroin fall into this category. Many others were relatively new, arising out of the growth of the pharmaceutical industry following the war. Though most of these newer drugs were prescribed by doctors to middle-class, middle-aged patients, the ubiquity of various stimulants and depressants (generally referred to as uppers and downers or, more colloquially, pep pills and goof balls) caused abuse problems, which accelerated to positively criminal levels when their children began to use them recreationally.²³¹

Unlike marijuana and the traditionally available opiates, modern pharmaceutical technology and medical practice combined with mass production and distribution to provide the youth of the sixties with plenty of ways to achieve various states of chemical inebriation right out of their parents' medicine cabinets. The Jefferson Airplane, San Francisco's biggest rock band, sang in one of their biggest hits, "one pill makes you larger, and one pill makes you small / but the ones that mother gives you don't do anything at all." As early as 1966, the Rolling Stones reminded youth "what a drag it is getting old," but that mom could always run "for the shelter of her mother's little helper," the tranquilizer or sedative that "helps to minimize her strife, gets her through her busy life."²³²

A new class of drugs and drug abuse, one with widespread manifestations, was both part of the birth of the counterculture and emblematic of its special contribution to America's overall drug abuse problem. The problems these drugs created were different from many of the previous key drug abuse issues, such as

addiction. Unlike their predecessors, which offered calmness, energy, the ability to cope with stress, or pain relief, the adherents and advocates of this new class of drugs made promises of enlightenment and salvation.

*But first, are you Experienced?*²³³

Within the hip countercultures, one drug became the symbol and the icon for the entire countercultural experience. As a separate and distinct drug experience, LSD provided a central focus and a common reference point for the countercultures. A recent work on the war on drugs noted that, for the period under consideration here, LSD "nearly attained the status of a folk sacrament." In fact, the one word which conveyed the greatest sense of the hip countercultures was "psychedelic." In art, music, and fashion, LSD impacted American culture in ways that other drugs did not and never had. From the music of Jimi Hendrix and the Grateful Dead to the artwork of Madison Avenue, LSD changed the cultural notion of drugs and, in the process, changed the culture. One writer underscored the relationship between drugs and the countercultures when he wrote; "LSD is symbolic of a sweeping change taking place in our society."²³⁴

The rapid public condemnation of LSD underscored the declining public belief in technological enthusiasm, or at least defined its limits. Psychotechnologies were the first drugs to be universally banned, and it is still illegal to possess, ingest, manufacture, distribute, plan to make, design or study LSD in any way, shape, or

fashion. Its rise and alleged decline presents one of the decade's most interesting case studies in the decline of technological enthusiasm, involving objections to scientism, a discrediting of elites and experts, and the eventual outlawing of a technology *in toto*. Neurochemistry dispensed for spiritual and consciousness-raising purposes was the only technology in the decade so outlawed, and remains the only technology so heavily policed at all levels.²³⁵

The reason that LSD use must be separated out from other varieties of drug abuse is simple: psychedelics were a different kind of drug, a different sort of technological tool. First, LSD was extremely powerful, perhaps the only point upon which both its advocates and detractors agreed. But if the hippies wildly misused its power, turning it into a perversion of technology, it was no less of one than the outgrowth of nuclear weapons from early atomic physics. .

Psychedelics were different in that they did not alleviate symptoms or cure infections, the traditional goals of the pharmacological industry. They were not a stimulant for the tired or overweight, nor a sedative for the nervous. They were applied by their users and advocates to the problems of spiritual impoverishment and decreasing self-awareness in modern technological society. These drugs are perhaps more correctly viewed as *psychotechnologies*, tools chosen and applied to solve some pressing human problem. The description of drugs, particularly psychedelic drugs like LSD, as technologies, though not widespread, was not totally unique. LSD was the first (and certainly not the last) application of chemistry as an

"inner technology," or a "transformational technology," a fact generally accepted in the early days of LSD reporting. It is as technologies, deliberate products of scientific experimentation and implementation, that LSD and its relatives must first be considered.²³⁶

There are several issues related to America's technological enthusiasm and its decline in the sixties that directly impact on the hip countercultures' LSD use. Some of these topics are obvious, but others are subtle, and their impact and effects are rarely documented. LSD created a very different type of drug problem, one with profound consequences for technological enthusiasm. To begin with, LSD represented a technological problem, one created by scientific and technological processes and advocated by doctors and others in the scientific community. Moreover, its acceptance is a form, even if it is a rather weird and strange form, of technological enthusiasm. Roszak noted:

The gadget-happy American has always been a figure of fun because of his facile assumption that there exists a technological solution to every human problem. It only took the great psychedelic crusade to perfect the absurdity by proclaiming that personal salvation and the social revolution can be packed in a capsule.²³⁷

Their advocates believed psychedelic drugs to be a technological solution to a specific technologically induced spiritual problem, the problem of nuclear weapons and atomic power. The advocates of LSD vary little from those who lauded the ability of previous technologies to solve the problems of the world but, in

the case of LSD, it was the decreased spirituality of the modern world that its boosters hoped to counter with a more enlightened, turned-on humanity.

The connection, though slightly abstract, fits well into the Progressive view of technologies being utilized to solve specific human problems, especially in the field of psychopharmacology. Drugs to increase mental powers, stamina, and other human shortcomings particularly when needed to handle advanced technology differ little from the Air Force's use of Ritalin or the Army's use of Dexedrine (or the aforementioned Apollo incident). Though offbeat, specifically in light of the problems that the drug crisis caused both the countercultures and American society at large, at that time, within the milieu of the sixties such explanations were not as far fetched as they now appear. Though it could be construed as an ideal Progressive application of technological enthusiasm, it struck most in the country as a solution too far.²³⁸

The fact that the majority of Americans thought the arguments advanced by LSD advocates were absurd - evidenced by the widespread rejection of the psychedelic solution by mainstream society - shows that even the Progressive status quo ideology finally found a technology it didn't like. The use, manufacturing, possession, giving away, or even designing of an entire class of psychoactive drugs was strictly prohibited. Rational, scientific inquiries were no longer welcome and all research protocols were refused by the FDA. The ban was thorough and sweeping. In fact, no legitimately sanctioned research into these molecules has been permitted

on either the drugs themselves or their effects in the last twenty-five years, regardless of (or actually despite) what many experts supported.²³⁹

The LSD debate also starkly illuminates the declining value placed on certified expertise in the public debate. In the process of banning drug technology, society also banished the experts. The governmental debates about LSD, particularly those in 1966, excluded the researchers with the most experience and data on the drug and routinely sought the input of people who possessed no scientific or academic background, experience, or training. A prime example was the crusading of Art Linkletter, the feel-good TV host of Kids Say the Darndest Things. Linkletter launched a lifelong public crusade against LSD after his daughter died while under its influence, and remained a major spokesman in the battle to ban acid. Nor was this situation unique to the governmental debates. As if to illustrate the final collapse of scientific ideals even within the therapeutic community, legitimate researchers in the field of psychopharmacology were routinely replaced in the public spotlight by demagogues and pseudo-scientists. "None of the hundreds of questions raised by psychedelics, many of them fundamental to the way the mind processes information, have been answered." Such research has remained in a "state of suspended curiosity." Thus, the first casualty of the decade's consciousness wars turned out to be scientific inquiry.²⁴⁰

The effects of many of these drugs contributed directly to a general decline in the base values of the modern technological order among their users. Time/space

distortion is a particularly awkward side effect to suffer in a modern industrial/technical society. Albert Hoffman, who discovered the drug and inadvertently took the first LSD trip, failed to even operate a bicycle correctly, making tasks such as driving on a California freeway even more problematic. More importantly, LSD assisted in replacing rationality and logic with feelings and intuition as a basis for decision making and values, undercutting a critical part of the scientific philosophy and the technologic mentality. Psychedelic drugs were perceived and advocated as a rejection of rationalism in favor of spiritual enlightenment.²⁴¹

A unique side effect of the LSD experience was that it repeatedly produced visions and experiences of a mystic nature. One of these commonly reported experiences involved the perception and subsequent embracing of a holistic world view. The basis of this holistic experience could have been either a direct effect of the drug or a programmed response that LSD users believed they would experience, but anecdotal evidence suggests that it is in fact the former. Regardless of whether such a reaction was either possible or probable, the holistic experience of seeing the oneness of creation, particularly when combined with the rejection of other rationally based notions, spread beyond the countercultures and deeply affected the spiritual basis of emerging ecological notions.²⁴²

*Timothy Leary's dead / No, no, no, no - he's outside, looking in.*²⁴³

LSD's leading historian, Jay Stevens, stated, "science is something few people think of when they hear [Timothy] Leary's name, although that is how he began, and perhaps how he will end." Yet, as one more problem brought about by science and technology, science is *precisely* what LSD was about, both in its development and its widespread advocacy. LSD was developed as a product of scientific research at the highest levels of pharmacology, in an atmosphere of equal parts Cold War paranoia and freewheeling clinical psychology. It was released, probably inadvertently, to a large segment of the American public through carefully controlled clinical tests and experiments conducted by the CIA at three of the nation's leading universities. These tests were developed solely for the purposes of exploiting LSD's potential as a chemical weapon. If LSD induced a "long, strange trip," the story of its movement from the laboratories to Main Street is even stranger, reading like a science fiction experiment out of control and with a life of its own.²⁴⁴

The development of the drug followed two distinct paths from the beginning. One group envisioned LSD as a tool of the psychological warfare section of the CIA, where it was tested as a truth serum and a chemical weapon. The other path, one centered on therapeutic effects, attempted to use the drug as a solution to personality problems, alcoholism in particular. In both cases the records indicate that a religious experience frequently accompanied ingestion, occasioning bizarre consequences.²⁴⁵

Leary himself acknowledged the technological linkage in the creation of the drug but also in establishing a milieu where LSD use could flourish: "Technological developments helped create an environment where a psychedelic counterculture was possible." Leary referred to technological developments ranging far beyond the development of the actual drugs themselves, and even sounded a bit like Clark Kerr as he speculated about the certainty and certitude of it all. "I think that all these things [were] pretty historically inevitable, when you had modern technology producing psychedelic drugs mass-market and then you had electronic amplification [recording and broadcast] of sound."²⁴⁶

Timothy Leary was the best known advocate of LSD in the mainstream press, one whose background in science and academia was legitimate and well established. After a rough start at West Point, Leary eventually received his Ph.D. from the University of California at Berkeley in 1950 and worked at the massive Kaiser Foundation Hospital in Oakland, serving as director of Clinical Research and Psychology between 1954 and 1959. By 1960, with several articles and years of experience conducting clinical trials behind him, he received an appointment as a lecturer at Harvard. Leary took psilocybin in the summer of 1960 and set about using his knowledge of psychology to explore the new realms of consciousness opened by psychoactive and psychomimetic drugs. His approach was strictly clinical in the beginning, experimenting and examining the effects with established scientific investigative techniques.²⁴⁷

Leary first experimented formally in 1961 at the Center for Research in Personality with prisoners from Massachusetts' Concord Prison, a local maximum security institution. The Concord experiments showed great promise, as the subjects' recidivism rate was reduced from an average of 50 percent to a very promising 25 percent. The accouterments were unique for a prison setting, as Leary and his assistants brought with them Oriental rugs, music, and candles, but the controversy surrounding these trials involved not the trappings but the treatment.²⁴⁸

These initial investigations (and, no doubt, their setting), soon proved too constricting and limiting for Leary's tastes. He and his assistant Richard Alpert, began to expand their clinical trials in the fall of 1962. They dispensed more than three thousand doses to volunteers, including artists like Allen Ginsberg, other Harvard doctors and researchers, and eventually to Harvard students. By this point they had also repeatedly taken the drug themselves. Initial results looked promising, with over 95 percent of the subjects claiming that their lives had been changed for the better, a phenomenal rate for any therapy.²⁴⁹

The Harvard administration was not so quickly sold on the idea, particularly when it involved using students as subjects, gathering at the university's chapel on Good Friday and repeatedly violating research protocols. Certainly the university had grounds to be suspicious, particularly after Time referred to Leary and Alpert as "free-wheeling" and the general atmosphere surrounding their research as

"euphoric," terms that did not seem to be in keeping with either solid academic inquiry or Harvard's reputation. The university offered the two a choice of hallucinogens or Harvard. Both choose the former, a strong testimonial to the lure of the drug. Their dismissal, the first in Harvard's history, caused a predictable odor and the incident generated substantial press coverage that brought Leary, the drug, and its effects to a larger audience.²⁵⁰

When Leary and Alpert left the university, they continued with at least the outward trappings of academia. They established the International Federation for Internal Freedom (IFIF) at Millbrook, a large estate in New York as a parent organization to guide their work, and continued to publish their journal, The Psychedelic Review. Their techniques began to veer radically away from scientific study, even though much of the work was still couched in scientific terms and format. Leary himself admitted: "I wouldn't say that our experiments at Millbrook were exactly scientific. We were keeping records, and trying to develop maps and guidebooks of the mind. Our motto was that we would offer the experience with one or more of us taking, sharing the experience and then coming back like neuro-nauts to tell about what we saw." Millbrook was science gone a bit mad.²⁵¹

In contrast to Leary's role as self-anointed High Priest, conducting more or less controlled clinical experiments with an elite (or at least heavily selected) clientele at Harvard and Millbrook, was the acid populism active on the West Coast. That scene consisted of people embarking on a gigantic personal experiment

centering around several Stanford students and hangers-on who had been participants in the CIA experiments. One of them, Ken Kesey, was a transplanted Oregonian living in the San Francisco Peninsula town of Palo Alto, in the bohemian atmosphere at Perry Lane with Jerry Garcia, among others. Kesey, funded by the royalties from his successful novel about insanity, One Flew Over the Cuckoo's Nest, established the Merry Pranksters in order to experiment with LSD in finding a new life path. Among Kesey's acquaintances was a crazy young amateur chemist in Berkeley by the rather odd name of Augustus Owsley Stanley III.²⁵²

Owsley, as he was known, played a unique role in the rise of LSD's popularity, yet his efforts rarely receive the attention that Leary's contribution does, though they were arguably far more significant. In his heyday Owsley was dubbed the "Acid King" by Newsweek and "the Johnny Appleseed" of "LSD's lushly foliated forest of the mind." That 1968 article went so far as to state: "Owsley became to LSD what Carter is to Little Liver Pills." Time, in mid 1967, had already opted for an equally pretentious allegory, referring to Owsley as the "Henry Ford of Psychedelia." All sources were in agreement on two things: Owsley's acid was the best, and he could mass produce it. Owsley's enthusiasm for LSD was equal to Leary's, but far less elitist. Owsley truly wanted to "turn on" the world.²⁵³

Owsley demonstrated a great gift for science early in his life, a talent noted even as he was being kicked out of his exclusive prep school. "At school young Stanley III showed an aptitude for science - and for stimulants." He trained at the

University of Virginia's School of Engineering before a stint in the Air Force, working at Edwards Air Force base, the home of the High Frontier. He then drifted through several jobs in the emerging high-tech electronics industry in and around Los Angeles before attempting college once again, this time at the UC Berkeley. There he began a relationship with a female chemistry graduate student played an instrumental role in helping him figure out what it was and, more importantly, how to make it. With the discovery of the emerging LSD culture in the Bay Area, the ne'er-do-well scion of the august Stanley family found a mission he could sink his considerable skill and talent into.²⁵⁴

Owsley's young protégé in the manufacturing and distribution of LSD, Tim Scully, also emerged early as a science prodigy, placing second in a prestigious Bay Area high school science fair and spending his summer vacations interning at the Lawrence Livermore Lab. Scully attempted to build a linear accelerator in his Pleasant Hill high school, hoping to bombard mercury with neutrons and achieve an alchemical transformation to gold. The school administration, impressed with Scully's ability but fearing for their safety, suggested that the bright junior should probably move on to college, whereupon he enrolled at Berkeley and majored in mathematical physics. All three of these early psychedelic pioneers thus shared an extensive scientific background, and all three had acknowledged brilliance in scientific endeavors.²⁵⁵

These acid advocates perceived a very different and special relationship between technology and LSD, a deep and noncoincidental connection between acid and the omnipresent symbol of the postwar world, the atomic bomb. They described LSD as a specific technological antidote to problems arising from the discovery of nuclear energy. They viewed it as a *counter-technology*, a gift from the gods to stimulate human spiritual and intellectual growth and providing for self mastery and knowledge needed as a counterbalance to atomic power. They believed that in possessing the basic power of the universe, humanity now needed to master the power of the mind and consciousness in order to avoid self destruction. Leary quoted Owsley, who elaborated this theory and postulated that the twenty-fifth synthesis of LSD (the effective synthesis under discussion here as the others did not produce the same results) involved a "molecular twist" capable of counteracting the tremendous destructive power of the Bomb. Owsley noted, as did Leary, that Albert Hoffmann's notorious twenty-fifth synthesis occurred "nearly simultaneously" with Fermi's first controlled nuclear chain reaction, under the squash courts at the University of Chicago. According to Leary's close associate, Ralph Metzner: "Owsley's theory was that the higher intelligence controlling and supervising the progress of the planet could not let the atomic fission experiment go too far: the danger to all forms of life from nuclear radiation was too great. So a minute change in the LSD molecule, a slight rotation on the side chain perhaps, was engineered, to

make this a drug that could open men's minds." Owsley himself elaborated on his theory to Leary, who thought of the chemist as "God's secret agent."²⁵⁶

Now dig. The atomic fission in December 1942 changed the whole system of energy in this solar system. The higher intelligence decides to make a few simple changes in the electronic structure of some atoms, and zap! We have LSD, an incredible powerful substance that is the exact antidote to atomic energy. People take LSD, and flash! They get the message and start putting things back in harmony with the great design. Stop war! Wear flowers! Conservation! Turning on people to LSD is the precise and only way to keep war from blowing up the whole system.²⁵⁷

Owsley could be dismissed easily as having used too much of his own product, except for the commonalty of this particular view among those who studied the drug. Aldous Huxley and Gerald Heard (also involved in the Harvard experiments) noted the synchronicity of these events. Leary, too, noted the LSD counter to atomic weapons when he wrote in reply to attacks upon him in Esquire in 1963 that "these are scary times. The dangers and potentials of man's increasing ability to release and use external energy, electronic-atomic, are familiar to us all. But the fact that we now possess (in the drugs LSD, psilocybin, and mescaline) simple and sure means of drastically altering man's internal situation, of releasing powerful neurological energy, is even more awesome."²⁵⁸

The drug culture conjured up a unique adaptation of technological enthusiasm, by championing these psychotechnologies as a solution to the problem of America's spiritual crisis. Some of the rhetoric of the drug culture even appropriated the language of technological enthusiasm, such as "Exploring Inner

Space." What it amounted to was applied theology, seeking a spiritual version of "Better Living Through Chemistry."²⁵⁹

*At Play in the Fields of the Lord*²⁶⁰

The hip countercultures selected LSD as a technological solution to the problem of diminished spirituality in modern American society, but they were not the first to do so. The search for insight and understanding are, of course, nearly constant human traits throughout history, and the use of chemicals as an aid in obtaining these aims are traceable through the centuries. Going back to the roots of the Progressive Era, a strain of this thinking can be readily identified in the writings of William James, and later Aldous Huxley. In particular, virtually all facets of the LSD solution had been acknowledged, studied, and cataloged well in advance of the Human Be-In, including its alleged spiritual qualities.²⁶¹

The postwar quest for spiritual enlightenment through psychedelic drugs began, not in the dim crash pads of the fog-shrouded Haight, but in the penthouses of New York and the boardrooms of Time-Life, Inc. As Sputnik began to circle the earth, numerous socialites and luminaries began to orbit through earthbound space, propelled by the same psychedelic drugs that later fueled the hip countercultures, though this is rarely acknowledged. In 1957 Life published an article that described the results of years of studies of an indigenous Mexican Indian group's religious ceremony using psychoactive mushrooms. The mushrooms eventually made their

way from the pages of Life to its inner sanctum. Since mushrooms were not the only gateway to spiritual enlightenment, publisher Henry Luce and his wife took the more easily available LSD on several occasions, as Clare Boothe Luce confessed to Dick Cavett in 1982. This may account for the somewhat lax treatment that the American drug problem received in their magazines, and for Life's early adoption of the psychedelic art motif. In a very real sense, Life introduced psychedelics to the mass market.²⁶²

The popularity of the countercultures' spiritual LSD solution occurred simultaneously on both coasts, though in wildly different settings. The East Coast acid scene at Millbrook developed out of Leary's experiments at Harvard, originally with LSD clinically manufactured by Sandoz and later from somewhat more shadowy sources, while the West Coast scene was largely a product of the imagination of Ken Kesey and his Merry Pranksters, fueled by Owsley's underground labs. In both cases, the quest released a frenzy of religious ecstasy in the participants, although the West Coast crowd assiduously avoided presenting it in those terms. Kesey's goal was to turn on the nation, as chronicled in Tom Wolfe's The Electric Kool-Aid Acid Test, and was based on his and the Pranksters' belief in the inherent spirituality of LSD. As Wolfe notes, the Pranksters avoided the word "religious" but still felt the "Unspoken Thing."

For that matter, there was no theology to it, no philosophy, at least not in the sense of an *ism*. There was no goal of an improved moral order in the world or an improved social order, nothing about salvation and certainly nothing about immortality or the life hereafter. There was something so ...

religious in the air, in the very atmosphere of the Prankster life, and yet one couldn't put one's finger on it. On the face of it there was just a group of people who had shared an unusual psychological state, the LSD experience - But exactly! The experience - that was the word! and it began to fall into place.²⁶³

The one word "experience" summed up the drug subculture in the sixties, a personal and transforming Experience. This manifestation of spirituality through chemicals certainly did not conflict with the tremendous yearning on the part of that generation to learn religion straight from God. They were "already attuned to mysticism, with a large percentage of close personal friends of God among them, claiming to have renounced worldly goods in favor of spiritual values." If the action was bad, the intent was still valid, as one Christian publication stated: "But, however superficial hippie religiosity may be, the hippie ethos - at least ideally - upholds a religious tradition that is now rapidly passing: the superiority of contemplation to action."²⁶⁴

It was this spiritual quest that propelled Leary's efforts and captivated his imagination. He recalled his first trip as producing "the deepest religious experience of my life," and consistently advocated the drug's controlled availability based on arguments of religious freedom. Much of this debate revolved around the growing politics of experience, which placed far greater emphasis on a person's own awareness than on any sort of clinical or medical/scientific explanation. This aspect of drug use, at its core within the countercultures, was originally seen as part of a mystical experience, set in a religious context. The countercultures' quest for

spiritual enlightenment precipitated a social and cultural crisis out of this newfound "politics of ecstasy." Leary declared that Americans enjoyed a previously unacknowledged "fifth freedom," the right to "freedom of internal consciousness," less loftily stated as the "right to get high." More to the point, he stated that "pleasure is now a political issue." In the larger context, the personal was becoming political.²⁶⁵

The conflict over psychedelic drug use in the sixties revolved around what Leary called "a power struggle over the control of human consciousness." The people of the decade grappled with two divergent views of drugs, one scientifically examined and described, the other spiritually interpreted and advocated. These different approaches were delineated by the two most common terms used to define the drugs, *hallucinogens* and *psychedelics*. "Hallucinogenic" denoted producing hallucinations, which portended (or mimicked, which was the original impetus for their use and study) disorganized mental activity and a state of temporary madness, although this was very much an epistemological judgment. The other term, "psychedelic," connoted an altered (and presumably higher) consciousness bordering on transcendence. Far from being temporary madness or induced psychosis, this experience was interpreted as a clearer and superior organization of mental activity, akin to mind expansion.²⁶⁶

Allen Ginsberg also endorsed and enthusiastically advocated "this new cosmic consciousness" that had been spurred on by experiments with LSD.

Ginsberg believed that these powerful chemicals were sent, as Owsley had postulated, by the gods to aid humanity in escaping the technical morass in which they were now trapped. Ginsberg waxed ecstatic about LSD in what must be one of the strangest combinations ever of chemistry and theology: "It seems that out of the mercy of the creator he has manifested himself to us in the material form of a pill. Isn't that *amazing*?"²⁶⁷

Ginsberg cautioned that this LSD experience was only to be used as a gateway tool for encouraging increased spirituality, which could then preferably be sustained without drugs. To rely exclusively on drugs would be counterproductive, as only a few experiences were needed to gain the necessary enlightenment. Anecdotal evidence suggests that this was the common pattern. Most users, far from becoming addicted, only took a few trips, and most users of LSD can be classified as those who used the drug twelve times or less. This was fine, according to Ginsberg, because LSD allowed "the apocalypse [to] become an everyday occurrence." As this continued condition could constitute an "abuse of the infinite," Ginsberg cautioned against it.²⁶⁸

The spiritual bent of the hip countercultures received positive attention from many others besides Beat poets, ex-Harvard professors, and New Journalists. In the beginning, it seemed to many one of the most positive aspects of the movement. Time described the attitude of one minister in San Francisco who applauded their efforts:

Marty refuses to put the hippies down as just another wave of "creative misfits," he sees them rather as spiritually motivated crusaders striking at the values of straight society where it is most vulnerable: its lack of soul.²⁶⁹

The personal spiritual epiphany that LSD users typically experienced led to a very interesting development, a specific shift in spirituality that seemed to be an inherent attribute of the LSD trip. In clinical terms, "one of the important positive aspects of the LSD experience is said to be acquisition of insight into one's own personality and the relationship of the individual to the world at large."²⁷⁰

In seeking a universal turn-on to cure problems that science and technology brought about in the first place, the worm had fully turned, and the irony was lost on almost everybody at the time except Allen Ginsberg. He rhapsodized about LSD, musing that "technology has produced a chemical which catalyzes a consciousness which finds the entire civilization leading up to that pill absurd." The original LSD voyagers believed they had discovered a secret that would aid them in taming the beast, in making technology work for humanity. Making a world, were poet and novelist Richard Brautigan envisioned people living All Watched Over By Machines Of Loving Grace. One intrepid group in San Francisco, the Psychedelic Rangers, crowed that "the psychedelic baby eats the cybernetic monster," that he machine world had finally created the means of its own destruction.²⁷¹

The psychedelic baby coming in contact with the cybernetic monster will devour it and by doing so the psychedelic baby will have the strength of the electronic civilization. That doesn't mean back to savagery. It doesn't mean we're going to tear down all the computer systems. It's only a question of the mind being turned enough, so that it's involved in making things better.

And this will result in a civilization that is super-beautiful. We're going out to build an electric Tibet.²⁷²

*I am he as you are he as you are me and we are all together.*²⁷³

This unique outgrowth of the countercultures' LSD experience fostered a growing sense of oneness with the universe, based on a holistic concept of nature. Translated beyond the drug experience, this effect of LSD infused the countercultures with a vision of union, and even communion, with nature in such a way as to reinforce the spiritual aspects of their experience. As this notion of holistic nature spread into American culture, it was channeled and redirected into mainstream goals that would generate wide-ranging repercussions for technological enthusiasm.

The literature, both the clinical and the comical, contains constant references to this holistic experience. In some ways the effect was akin to other mystical aspects of LSD, but it was singled out by its ubiquity among users. One clinical source stated the holistic experience in the most basic terms, noting: "The most commonly reported philosophical feeling is 'a oneness with the world.'" Even leading clinical tests pointed out the frequency of the "sense of cosmic oneness," finding that "most researchers who have worked with LSD in either a therapeutic or a supportive setting have reported the occurrence of mystical experiences in varying degrees of frequency." This mystical oneness with nature could manifest on a microcosmic or macrocosmic scale, but either way the natural vision added a

spiritual dimension and connection to all of the resulting actions and debates, and it became preeminent in the hip counterculture' search for alternatives.²⁷⁴

Whether this specific and definite aspect of the LSD experience was a side-effect of the drug itself or a preprogrammed consequence, a predetermined outcome based on the expectations of the user, is impossible to determine with the evidence at hand, but both views had their advocates. Regarding the Grateful Dead's considerable experience with large group ingestion of LSD, Nicholas von Hoffman wrote that the entire experience was "programmed" into them. The "more mystic meanings" had been attached to the drug long before it made its way to the Haight. The experiences of the acid-dropping children who wanted to "see the oneness of life, nature's beautiful infinities," happened not because the drug actually produced such reactions as a function of its chemical makeup but, in his estimation, because the youth were "programmed" for it - it was due to a special property of LSD, the ability to make "people very vulnerable to suggestion," the quality that endeared it to the CIA in the first place.²⁷⁵

This corresponds to the view of a medical doctor quoted in an underground paper: "Subjectively the experiences of LSD seem to be like results on Roarshat [sic] inkblot tests: the environment, level of education, mood of the subject all are influential in what he sees. One person might see God, another flowers it just depends on how they interpret their trip." Anecdotal evidence suggests an even greater possibility, a synergy where God was the flower, and the flower the perfect

manifestation of God. As one devotee put it: "you will hear the cosmos breathe . . . it breathes in and out every eleven billion years." How he was so sure of the length of the breath was not recorded, but his feeling of closeness to infinite nature seems clear enough.²⁷⁶

Advocates of LSD felt that the drug was capable of lifting "the veil of illusion to show the holiness and newness of the universe." Evidence that this effect was simply not a creation of the hip counterculture frequently crops up in the anecdotal accounts of LSD experiments with people who could not be classified as remotely countercultural. Jane Dunlop, a writer for women's magazines in the early sixties, described her 1962 LSD experiences in holistic language long before the acid counterculture developed. Even a middle-aged Protestant minister from Kansas waxed ecstatic about this aspect of the drug. The overall tenor of the holistic experience comes through in her narration, even if that narration rambles incoherently.²⁷⁷

Oneness. All one. In-Godness. Indescribable. Upmost. Emotionless. No self. No sensations. Self was within and without. Time gone. Space gone. Nowhere, but infinitely everywhere. No time, but eternally now. Vast oneness. In-God. Lost but found. Full space. Nothing seen or heard or touched or felt. There. No within or without but all one. No wholly other or beyond but in it. In the infinite. In the eternal and infinite. In mystery. Part of it. All one. This seemed an eternity or in no time.²⁷⁸

Once a person underwent the experience and arrived at the understanding that "there was awareness of undifferentiated unity, embracing the perfect identity of subject and object, of singleness and plurality, of the One and the Many," the

extension of this view into the natural world seemed easy. It was a short leap to use such an experience as a reason to attempt a more natural lifestyle, or one more connected to nature, particularly the kind of natural experience presumed to exist in the rural communal lifestyle. A young communitarian in Oregon reflected upon the origins of his conversion to the natural life, and the central role LSD played in that change and that choice:²⁷⁹

I think all of us have had the Experience. It's from whatever that substance was we all took back in 1965. One way or another this whole thing revolves around LSD-25. You take that stuff, and it takes you all the way back, cell for cell, vibration for vibration, back to the common denominator, that one seed which we all came from.²⁸⁰

After LSD revealed one's attachment to nature, the resulting empathy for environmental issues made those issues personal. Like the minister, users felt themselves to be part of nature, not removed from or removable from it. The attitude of dominance over and subjugation of nature that informed the Progressive agenda seemed wrong in light of this overwhelming sense of man within nature. Nature became personal and, as with spirituality and sex, the personal became political, and environmental issues once viewed relatively dispassionately as site specific problems now became holistic questions of ecology, and hence everybody's problem.

Ecology stressed the interrelatedness of all life, and the LSD experience magnified and personalized this philosophy. For many members of the countercultures, this strong sense of enlightenment with respect to nature grew

directly from acid use. "This was the magic carpet. We saw the same things simultaneously together and we blended with the unity and beauty of our world."

Once this vision of unity was beheld, it was a short step to make oneself a part of it, to achieve "a fusion with the universe," a joining where "all is one," the observer and the observed.²⁸¹

A fundamental rearrangement of personal values and attitudes frequently followed such revelations, as psychedelic reality brought a change in perceptions of the physical universe antithetical to that of the Progressives: "I see my role not as a conqueror, but as a receiver; I want to relinquish power. It takes you through the whole trip from denial that I am God to recognition that everything is God, and since I am part of that, I am, indeed, God." "I knew for a longer time that the world really was, in spite of appearances, a torrent of energy and life and that I was part of all that."²⁸²

CHAPTER 6

THE NATURAL ALTERNATIVE

*You make me feel like a natural woman. Just like a natural man.*²⁸³

From the earliest days of its inception the hip counterculture sought a way to transcend a technological world they perceived as artificial and plastic. In the process, they developed an incredible array of naturalistic alternatives to machine-created culture. These alternatives reflected diverse notions about what constituted "naturalness" and also demonstrated the vast array of countercultural styles of life. Hip fashion provided one readily apparent example. Naturalness found expression in longer hair worn in simple styles, decreased use of make-up and cosmetics, and grooming ranging from disheveled to dirty. Natural fabrics dominated clothing, in part as a protest against artificial feeling polyester, rayon, nylon and other "miracle" fabrics. Leather coats and vests, cotton jeans, madras plaid shirts, dresses, and T-shirts became a virtual hip uniform. Choices in undergarments (or lack thereof) also fell readily under the natural rubric, a topic about which too much has already been written.²⁸⁴

In the food industry, countercultural values and tastes influenced diets, production methods, and the grocery retailing areas. Organic agricultural methods stood in opposition to food grown and produced in large-scale, chemically dependent manufacturing operations. Interest in natural foods spread from the countercultures to mainstream America in the early days of the Haight, according to

a leading historian, when the hip counterculture "put food at the center of an activist program based on an emerging ecological consciousness." Though one countercultural source book held that much of the controversy the countercultures injected into the food debate constituted "paranoia," the concerns of a small number of food activists found a wider forum and promoted changes in food retailing, manufacturing, and especially in advertising.²⁸⁵

The desire to live a natural life resulted in hip communes. From its inception, the hip counterculture advocated (even if in actuality few really participated in) a rural, communal, subsistence-based agricultural style of life as the best "alternative to the 'computerized society.'" This "back-to-the-land" impulse arose out of the wholesale rejection of the modern American dream and took a decided turn toward what several spokesmen termed "voluntary primitivism." Though few used the word in the beginning, countercultural communes sought to create a life within a balanced ecology, one based on an interactive relationship with nature based on respect and understanding, not dominance and submission. An article in the premiere issue of the San Francisco Oracle illustrated this impulse, declaring: "Those who seek being rather than status and who decide to return to the land often wish to obtain an ethical relationship with nature."²⁸⁶

A widening of this natural, holistic ethic into a less radical and more practical approach to social and cultural change accompanied the commune movement. The Whole Earth Catalog offered a vision of a life lived in balance with nature, where the

best means were judged, not by efficiency, but by minimal impact. At the heart of the Whole Earth philosophy lay the need to simplify modern life in order to bring it back into synchronicity, a holistic balance with nature.

The greatest single impetus propelling this holistic impulse to seize the imaginations of American society came not from the counterculture but, oddly enough, from NASA. A photo shot out the window of an Apollo spacecraft displayed the most sublime of images, the entire planet in its perfect wholeness. The resulting awareness vaulted these aspects of countercultural thought into the mainstream, infusing the ecology movement with anti-Progressive values and casting technology into the role of villain, curbing technological enthusiasm as a determining social notion.

Communes: *Going up the country*²⁸⁷

The commune movement demonstrated the most idealistic expression of the new natural ethic and the back-to-the-land ideal in particular. In an act of dissatisfaction with modern technological society, communes offered a viable alternative for living. With voluntary simplicity as the ideal, they looked backward to a time when life appeared less complicated and hence, better, an absolute reversal of Progressive ideals. These countercultural communes updated the traditional American pioneer ethic of self-sufficiency, combining it with utopian inclinations and postapocalyptic images. Cast as the "vanguard of the turn-on tune-in electronic

tribal culture, [the] children of the cybernetic Aquarian Age," the ethics of simplicity found greatest definition in what the participants refused, rather than by what they sought.

Like the other American utopian schemes which preceded them, the majority of these hip rural communes existed only for a short time and their endings were frequently calamitous. In typical fashion for counterculture coverage, the mainstream press focused excessively on the sex lives of the residents, and the most glaring failures received the lion's share of press coverage, despite the fact that several communes remained successful for decades, and a few endure to the present day.²⁸⁸

Declining standards in the quality of life in several of the urban hippie slums, particularly the East Village area of New York City and the Haight-Ashbury district in San Francisco (where, as Hunter S. Thompson noted, paranoia overshadowed peace), provided specific motivations for the hip urban exodus. As the winter of discontent surely followed the Summer of Love, the larger countercultural areas of New York's East Village and the Haight lost much of their hip population. This only expedited the retreat into rural areas and the attempt to define and create a more natural style of life. One Haight refugee planned to escape San Francisco for Colorado or West Virginia, while another stated, "The people here now are running away, looking for someplace to hide. I think I might go to Big Sur." "Many others have moved away - to the Sierras" noted Newsweek, wondering in true

"fifteen-minutes-of-fame" style less than a year and a half after the Summer of Love, "Where are they now?" On the East Coast, many fled the Village scene after the well-publicized and extremely brutal murders of two young hippies, Linda and Groovy. Similar events in the Haight made Thompson seem prophetic. In the aftermath of the New York killings, one 19-year-old girl stated:²⁸⁹

Linda and Groovy were sacrifices, the movement's first real martyrs. But they showed us something man. They showed us you can't find God and love in Sodom and Gommorah. So it's time to split.²⁹⁰

The murders only added specific events to the hip appraisal of modern life which found "the straight life totally artificial, biologically unsound." The natural solution emphasized moving back closer to nature and the land and attempting to live a more ethical, or at least a better adjusted, life. One large photo spread story in Look covering the 1967 Summer of Love, published well before the most negative incidents, emphasized the desire of some interviewees to break out of the modern industrial lifestyle and pursue a more naturally defined path. To recapture the original creative essence in humanity, that which arose from a natural connection, it appeared to them logical that people should move back-to-the-land and "groove with the elements."

We're out to bust up the concrete man - to let the flowers grow. What we're really looking for is a new beginning. Everything is too sterile. Man's creative spirit is being destroyed. He's become so unnatural that he's freaked out the order of the universe, and now its trying to restore itself.²⁹¹

These hip "new beginnings" were hardly the first such utopian endeavors in American history. While hip counterculturalists found themselves categorized as a "foreign element" on American shores, most of the hip ideas drew on traditional American themes. One historian of the sixties movements noted: "to any student of American communitarianism, however, the present California scene is an old one - so old that it predates the Revolution and may have arrived in the *Susan Constant*." The hip counterculture did not follow European patterns in setting up their utopias, but rather pursued ideas that were part of the American tradition. As Life gushed, "Their hair and dress, their pioneer spirit, even their Indian teepees evoke the nation's pioneer beginnings."²⁹²

As befit a mass movement, a few communes existed in over half the states. Usually located on the fringes of civilization, the movement also encompassed several urban efforts. The western communes drew the most publicity and notice, and there appeared to be a special affinity for the American West, which held a particular allure for the young communitarians, just as it had for earlier generations of pioneers. One set of contemporary chroniclers noted, in language not too far removed from that of a Louie L'Amour or Larry McMurtry cowboy epic: "And now, somehow (he really didn't know how), he found himself out here in this wild expanse of land, where mountains hump on endlessly and the domed, dark sky is so utterly clear and vast that it seems watchfully protective." Several of these western communes led the movement in practice and longevity and, frequently, in failure.

Drop City in Colorado, High Ridge Farm and others in Oregon, the many New Mexico communes around Taos including New Buffalo, Libre, Lyra, Hesperus, Morningstar East, and Reality figured prominently in the movement, along with the major California examples of Tassajara, Morningstar, and Wheeler Ranch.²⁹³

The movement sought transcendence rather than progress, and advocated withdrawing from "the system" as a means of surpassing the present. Building communities for a new day (if not a new age), these private, human-scale endeavors aimed at personal liberation and communal intimacy. They did not seek any massive reform of society, which was not unique for utopian communities. Focused solely on the persons involved, most of these experiments were socially harmless, still locals and others frequently perceived them as extremely threatening. To a degree, the communitarians believed they served as a model for the new age, but immediate personal transcendence took precedence over evangelical promotions. They generally shared a perspective of "saving the world by their example," choosing to think they were "cultivating the leaven of a new society."²⁹⁴

Janis Joplin sang her way straight into the hip countercultures' hearts with Kris Kristofferson's "Me & Bobby McGee" and its refrain of "freedom's just another word for nothing left to lose." The voluntary and intentional nature of the Radical experiments sought to provide a path for the many they assumed would, or must, follow. One of Morningstar's young communitarians stated:²⁹⁵

What we're really doing here is a pilot study of a life style for the near future. We're trying to slow down, to remember what this whole trip's about.

We're simplifying, getting rid of all those things that just get in the way. We're retribalizing, and when we get it all together, the vibes are so high we know we're doing something right. And like so many people are getting turned on, its the beginning of a whole new age.²⁹⁶

One writer speculated on the communal impulse and its rejection of technology and return to nature at a personal level: "they turned to rural and urban communes not as vehicles for the transformation of society, but out of a need to find places where they could be at peace with themselves and with one another, to become the high beings and the free beings the new culture believed in." Creating communities where personal satisfaction grew from working in and interacting with the natural surroundings was the main goal. Thompson noted this in the early days of the Haight scene:²⁹⁷

The thrust is no longer for "change" or "progress" or "revolution," but merely to escape, to live on the far perimeter of a world that might have been - perhaps should have been - and strike a bargain for survival on purely personal terms.²⁹⁸

These communes provided a space for people who, in Philip Slater's words, rejected the American status quo of throwing "away one's body so that one can accumulate material artifacts." Life in these communes sought physical pleasure distinct from ownership, to "throw away the artifacts and enjoy one's body."²⁹⁹

Similar in tone and substance to the writings of the student radicals, a strong note of retrograde thinking frequently intruded on these new age proponents. Few concepts lay in such direct opposition to the notion of progress than their retrograde nostalgia, the pervasive feeling that better days lay behind and not ahead of them.

Retrograde thinking proved a frequent point of contention within the radical community itself, particularly when Janus-like characters spouted ideas that: "The communal movement is plainly a radical break with the present system; but it is also reactionary (in the strictest and most literal sense) in that its members seek a return to something they think we once had." Not only did such duplicity make communal goals unclear and inexact, but it proved extremely difficult to return to something that the participants never experienced.³⁰⁰

Overall, the pastoral ideal sought not a retreat from modern society but a method of transcending it, with the implication that future progress needed to be mental and spiritual and not material, technical, or scientific. Of course, such distinctions proved to be razor thin and few clearly understood them. Even countercultural icons could be confused about the differences, as one exchange between Timothy Leary and Gary Snyder illustrated. In a debate about the notions of romantic nostalgia and transcendence, Leary decried the technological destruction of the natural world, but still felt great reluctance toward the goals of a back-to-the-land movement. He stated: "man in his technological, Aristotelian zeal has developed these methods of laying down miles of concrete on topsoil, polluting the waters and doing the damage that Gary was just talking about. Now, we cannot say to this society: 'Go back to a simple, tribal, pastoral existence.' That's romantic." To which the Zen poet Gary Snyder, stressing transcendence, replied; "You can say 'Go FORWARD to a simple, pastoral existence.'"³⁰¹

Central to the notion of personal transcendence was the need to create the sense of community and belonging that presumably existed in the "good old days." The importance of community created a distinction between the countercultures' personal focus and the individualism prevalent in American society as a whole, particularly in the postwar world. The search for a method to develop community in the midst of the twentieth century inspired two separate, and very different, communes to emerge from a single radical discussion group in Berkeley. The Tassajara Zen Mountain Center remains one of the most successful alternative communities. Enjoying considerable success at creating a natural, harmonious lifestyle, Tassajara and High Ridge Farm merit particular acclaim for their success in creating sustainable communities. In this respect, communes founded with a serious ideal of community or an overriding religious basis proved to be the most successful. This agrees with the both Benedictine and Shaker models, whose respective mottoes *Ora et Labora* [prayer and work] and *Hands to work, hearts to God*, reflect a unity of purpose centered on work and devotion.

It should be noted that many members of the counterculture were not always sympathetic to these ends. Some felt communes represented a mistaken distinction, one of withdrawal rather than engagement. No less an authority than Ken Kesey, the chief of the Merry Pranksters, derided all such efforts declaring: "We don't want a commune, we want a community," well aware that the two were not synonymous.³⁰²

One unique aspect of the radical commune movement was the degree to which it adopted bits of Native American cultures, particularly the concept of "tribe," as a model for their new society. "We feel that our own American Indian can show us a great deal by way of alternatives to our present way of life," read the masthead of the Los Angeles Oracle. Radicals hoped American Indian tribes, particularly those of the Southwest, would demonstrate the way out of the technological morass and, to that end, they were used as guides both to the practical aspects of appropriate technologies (tipi's and pueblos for example) and, on a higher level, providing a spiritual foundation for a life in balance with the land. "More and more people are learning to work without modern so-called conveniences. The Hopi tell us that at the day of purification all power will stop. All transportation will stop." By merging spiritual aspects and voluntary simplicity with apocalyptic undertones, this newer generation echoed the original Americans.³⁰³

The emphasis on subsistence living and self-sufficiency frequently took on an apocalyptic cast, echoing the atomic age literature common to both the hip countercultures and the student left. Their vision of the future usually portended some traumatic event, a revolution or a mystical day of purification which would force American society to take up countercultural goals, ideas and methods. "The sense that whatever happens in the political revolution, the end result, after the shooting is over, will be the kind of life he is now living."³⁰⁴

The key to understanding these hip rural communes of the sixties is the ethic of voluntary simplicity which directly reflected the central countercultural ethos of rejecting the technological and artificial order and replacing those styles of life with a more deliberately natural and simplistic preference. Intentionally choosing to "attempt a hand-to-mouth independent life" seemed to exemplify the entire countercultural existence to many, along with demonstrating the fatal flaws resulting from that manner of thinking. By following and exemplifying countercultural thoughts, communes provided a widely noted example of the natural countercultural alternative in action, as one sociological study concluded:³⁰⁵

Embracing the anarchist tradition, a return to an intimate community, the rejection of technology and the materialist ethic, and the search for alternative nonrational realities are fundamental themes in understanding the counterculture in general. But, specifically, these are the themes of the embryonic new society being created in the rural communes of the counterculture.³⁰⁶

The notion of voluntarily rejecting many of the advantages of technology in order to simplify, purify, liberate, or just slow down modern life became the central theme for this "new way of life." Lou Gottlieb, at his infamous Morningstar Ranch, referred to this idea as "voluntary primitivism" as early as 1966, a concept he received from his friend Raymond Sender. Simply put, the creed "means saying no to competition, no to the work ethic, no to consumption of technology's products, no to political systems and games." The acceptance of "a reduced standard of living, both as a way out of a destructive and oppressive system, and as a positive

freedom-enhancing end in itself" did not necessarily constitute a rejection of technology. It was rather part of a search for methods that encompassed more than simply technological solutions and refused to accept technology for its own sake.

According to Gerry Snyder, technology should be appropriate, not dominant:

I think that automation in the affluent society, plus psychedelics, plus – for the same curious reason – a whole catalytic, spiritual change or bend of mind that seems to be taking place in the west, today especially, is going to result – can result ultimately - in a vast leisure society in which people will voluntarily reduce their number, and because human beings want to do that which is real . . . simplify their lives. The whole problem of consumption and marketing is radically altered if a large number of people voluntarily choose to consume less.³⁰⁷

The goal of self-sufficiency, as expressed on one Northern California commune by the publisher of the Illustrated Paper, was a driving force despite the oft-repeated belief that all hippies were simply lazy bums: "We must begin living out of ourselves and not off welfare or government programs or hand-outs or the industrial scrap pile." The goal was to produce a new world and not simply settle, as so many seemed to, for a life lived "out of the garbage cans of the machine world." Many of these efforts were real attempts to make do with less. Often this rejection of the status quo has been viewed as a total rejection of technology, and some groups did attempt an extreme rejection, but more often it was rather a search for the appropriate level of technology needed to meet only the most pressing of needs.³⁰⁸

Counterculturalists believed that technology harmed the natural world. In order to get people back in synch with natural rhythms and the natural world back in balance, they focused on minimal applications instead of maximum overkill. The emphasis on rural self-subsistence provided ways for people to work toward those goals, while feeling good about taking responsibility for their own lives and not depending on large-scale, impersonal, and artificial systems. The broad range of ideals within the countercultures did not lead to a united and coherent path, but at least demonstrated the need to change from present realities to what one sociologist termed the "New Naturalism."

The counterculture spread the idea that contemporary society had become a perversion of nature. Polluted air, streets bulging with smog-spewing cars, stores displaying soon-to-be-outmoded technological junk, countless unnerving hassles with agencies and bureaucrats, precooked, prepackaged, and adulterated food, the slow disappearance of natural vegetation and wildlife, the reality of overcrowded and hostility-laden cities, the grip of empty social conventions serving only to control people by stifling imagination and impulse - against all these conditions of modern, especially urban life, the counterculture raised the banner of the new naturalism.³⁰⁹

Time commented on this aspect of the counterculture, noting that, "Hippie millennialism is purely Arcadian: pastoral and primordial, emphasizing oneness with physical and psychic nature." In order to pursue this goal, the countercultures endeavored to reduce the overwhelming amount of material possessions they felt the average American wasted their time in acquiring. The communes were going to "try to live the Waldenesque good life on the bare essentials - a diet of turnips and

brown rice, fish and bean curd - thus refuting the consumerism of 'complicating wants' essential to the U.S. economy." Voluntary simplicity tied together the elimination of material accumulation with purging the desire for such acquisition in a package deal.³¹⁰

Despite the enormous amounts of love and idealism that went into their founding, these grand visions and utopian schemes rarely succeeded. The frequent failures in these hip communes had three causes that usually worked in synergy. First, the physical work was extremely difficult and not readily mastered. Second, the most important of modern conveniences, particularly when it was done without, turned out to be sanitation. Lastly, hostility from local officials and residents proved difficult to overcome. The problem of sanitation fed directly into the other two areas because first, sooner or later the county health inspectors arrived to condemn the area, and secondly, sick people did even less work than healthy ones which, in many communes, wasn't all that much to begin with.³¹¹

Had they listened more closely to the Native Americans they occasionally attempted to emulate, they would have understood that the natural way encompassed a harsh brutality along with its life-affirming beauty, often in far more profound ways. Lacking the considerable personal skills and knowledge needed for rural existence, many well-intentioned communal efforts floundered. The agricultural skills and homesteading abilities needed to sustain, let alone prosper, in natural harmony, were not part of humanity's genetic makeup, as many

communitarians apparently assumed. One observer detected this fatal shortcoming in many of the communes he visited in the late sixties: "A return to the land and a natural environment by the hip people 'turned-on' to nature is an admirable and adventuresome goal. However, the quick switch for city dwellers to this new way of life seems beset with complicated problems." These problems, most of which seemed to catch the participants off guard, frequently tended to be life-threatening. Gary Snyder cautioned the emerging hip counterculture in 1967:³¹²

What is very important here is, besides taking acid, is that people learn the techniques which have been forgotten. Like, you just can't go out and grow vegetables, man. You've gotta learn how to do it. Like we've gotta learn to do a lot of things we've forgotten how to do.³¹³

Rural existence appeared less complicated than modern urban and suburban life, but that level of simplicity proved far more labor intensive. Simplicity rarely equates to ease, and nowhere did this prove truer than in farming. The basic level of continual work needed to accomplish even the most marginal existence often proved beyond the ability and the motivation of the participants. "That's all very fine, but you see some girl get up and hoe for five minutes and then sit down again because she's tired of doing it." The effort needed to accomplish life with appropriate technology, rather than technological overkill, proved exhausting. Both the amount and the kind of work felt like old-fashioned drudgery, not modern liberation. Moreover, as it turned out, living in and with nature did not prove automatically fulfilling. As the process of western migration in American history

amply demonstrated, subsistence agriculture even on the best lands always entailed incredibly hard work and frequent hard times and lean years. True subsistence farming is, and was, a constant do-or-die effort with little margin for error. On this central crux, lacking skills, knowledge, and sustained motivation, many efforts floundered after a short time.³¹⁴

Physical health also posed a serious problem. Eschewing technology might prove workable for internal combustion engines and power-company-generated electricity (and even then rarely, and only with extreme effort), but ignoring modern developments in sanitation proved extremely problematic and amazingly easy. Shortcomings in sanitation, particularly in a group living situation, frequently combined with dietary and nutritional deficits to furnish enhanced opportunities for disease, infectious and otherwise. Moreover, sanitation problems provided legal grounds for the entrance of an organization in many ways even more powerful than the police, the local health department. Exposure to governmental power, whether police or health officials, seldom benefited the communes. Sanitation proved a potent weapon for opponents of communal experiments, and local medical authorities and sanitary engineers were not easily swayed by "zapping with super love."³¹⁵

One early example, Canyon, in the Berkeley foothills, illustrates some of the difficulties alternative communities faced with local health authorities. Canyon, despite its closeness to urban environs, seemed to be the perfect nature many

counterculturists dreamed of. Residents celebrated Canyon's beautiful environment and praised its ability to allow man to once again gain a sense of the pastoral. Daily life in Canyon was "like being in a park." Exposure to the natural world and natural rhythms provided a transcendent experience for those living where "there was the same sense of air and space and profound meaning in subtle movement that cuts through all the layers of civilized behavior." This retreat from the modern enveloped the residents who moved to Canyon seeking to respond to their special "urge to return to a simpler, more innocent existence."³¹⁶

Alas, that simpler existence included a sewer system that Alameda County officials and the regional water authority, MUD, found inadequate. Residents proposed several alternatives but all proved unsuitable or unworkable. Canyon needed to install a "sewer system that's sure fire, like Apollo Eleven. You need a system that will get you to the moon and back," as one county engineer envisioned it. Canyon did not have the resources or, in truth, the desire to construct such a system. The final result of these sanitation problems found Canyon first condemned, and later demolished by the county in February of 1969.³¹⁷

On top of problems with local health authorities, the communes frequently suffered animosity from other sectors. Indeed it was one of the tragedies of the communal movement that these starry-eyed children who sought a oneness with the earth encountered nothing but hostility from the rural neighbors they expected to achieve pastoral solidarity with. Even on communes located far out in the country

where simpler building and sanitation standards often combined with lax enforcement, communitarians found the locals rarely extended a neighborly helping hand, dealing with them harshly, and occasionally violently. Despite several generations of living very close to the land, these prior residents had not "mellowed," in fact, quite the opposite.³¹⁸

Two communes, Wheeler Ranch and Morningstar, epitomized the harsh treatment by locals, problems with sanitation officials, and harassment by police officers that drove so many communes to failure. In what was termed locally as "the battle of Sonoma County," these two communes manifested the most notorious problems that dominated the negative press swirling around the commune movement in the late sixties. Located near the small town of Occidental, about an hour and a half drive north of San Francisco, Morningstar began as a communal experiment in 1966 on property owned by Lou Gottlieb, who bought it in 1963 with royalty payments from a minor hit record with the Limelighters. Gottlieb knew several Pranksters who encouraged him to open up his property for a freeform (really, the only form the Pranksters knew) back-to-the-land experiment. Gottlieb envisioned Morningstar as "an alternative society for the technologically unemployed." The original group started out with fifty to ninety people living on a little more than thirty acres and for a while things went fairly well. Featured in many early articles on the hippie scene, the early coverage of Morningstar projected a largely positive image. Perhaps too positive, for Morningstar soon found itself

flooded with refugees from the Haight and the Summer of Love, who joined a stream of people from across the country who read about Morningstar in Time and Newsweek and just wanted to get naked and "smoke an awful lot of dope." The swelling numbers, and the attendant problems they caused, led local residents to protest and seek legal recourse against them.³¹⁹

The Sonoma County Sheriff's office became the first official agency to interact with Morningstar's young pioneers. Obviously unimpressed with the utopian experiment and not nearly as susceptible to good vibrations as the San Francisco police, the sheriffs harassed and arrested the residents once they left the property, and avoided coming to their aid when they were attacked by locals. Though the sheriffs could make life difficult, it turned out to be the health department who held the highest cards, as Canyon demonstrated. By September of 1968, Morningstar found itself all but shut down by local health officials, who spent a day at the ranch and found no lack of obvious sanitary code violations. Gottlieb attempted to avoid the inevitable, going so far as deeding the land to God in trust, but officials eventually discovered legal technicalities prohibited God from owning property in Sonoma County and disallowed the change. Finally the end came to Morningstar, as it had to Canyon, when bulldozers leveled all but one of its structures in August of 1969.³²⁰

The Wheeler Ranch had somewhat more success. Its larger space, around 130 acres, and extreme isolation (Morningstar property abutted a state highway

while Wheeler's main encampment lay at least two to three miles off the closest road) made it much less visible, and the old saw of "out of sight out of mind" worked well for communes. Wheeler also at least had a vague centralizing principle, that of an arts center, and central ideals (no matter how vague) at least gave slight direction. Despite these advantages, fires of unknown origin, occasional shootings, and local harassment all took a steady toll, as did the internal problems of running an anarchy. Wheeler managed to stay open until July 1973, when it became another victim of health code violations, though the ranch avoided the bulldozed fate of Canyon and Morningstar.³²¹

The Whole Earth Catalog: *You are the crown of creation.*³²²

The Whole Earth Catalog: Access to Tools promoted a broader and more viable vision of countercultural alternatives than the communes did. The catalog encouraged and aided in the "difficult but possible" task of creating a new culture in the midst of American society. The catalog reflected the countercultures' ambivalence toward technology while suggesting practical alternatives. It served as both an actualization of the countercultures' potential power and a pointed acknowledgment of their immediate shortcomings. The Whole Earth Catalog's Haight-Ashbury origins and widespread adoption linked the philosophy of the countercultures with the emerging ecology movement on several levels. Specifically, the catalog advocated and endorsed the voluntary adoption of a

simplified life, while using controlled technology within a context of a holistic understanding of the overall effects those choices brought on. In this way the catalog presented viable alternatives intended to foster a simple life in balance with nature.³²³

The Whole Earth Catalog supported a sustainable vision of life, one that took the modern world at face value and set out to provide positive, possible alternatives to the status quo of technological enthusiasm and progress based on affluence and abundance. Its editorial staff sought a détente with technology based on a standard of appropriateness, simplicity, and ecologically based awareness of technology's environmental impact. This newfound awareness was not guided by the narrow strictures of the federal government but by a holistic standard, one that took into account the impact of technology on the user as well as the environment.

The countercultures confronted few minor issues. Adherents frequently tended toward hyperbole, painting everything as a life and death matter. In such a climate, issues were judged along strict moral lines, rendering each decision of every individual as one of overwhelming good or evil. Frequent stirrings of utopian evangelism and dire undertones of the apocalypse also infused their writings, so it didn't seem out of line or shocking when the Whole Earth Catalog dedicated itself to the following purpose: "We are as gods and might as well get good at it."³²⁴

The Whole Earth Catalog served this purpose very effectively, with a style that "suggests the flavor of the whole movement." An exercise in the power of

possibility above all else, the catalog advocated a simplified life, personal competence, and responsibility through which the countercultures could create a natural and workable alternative to the machine culture. The path to this alternative focused on sustainability, decentralization, community building through a human-scaled approach. Personal control rehumanized, while competence and education replaced the cult of expertise which centralized American society in the first place. The tenet of simplicity dictated a sustainable and ethical relationship with the earth and a culture where technology was not considered a savior, but was not rejected entirely out of hand, either. Like any tool, technology should only be used as appropriate and within the context of its design. The catalog served as "an evaluation and access device" intended to assess, present, and summarize the requisite tools, knowledge, and skills needed to promote autonomous community-based living. It rapidly approached the status of a countercultural Talmud, a commentary on the important texts, not quite a bible, but more akin to Garcia's "signpost to a new space." For some it became a how-to manual for dropping out of modern American society in the middle of the twentieth century. For others it provided a hip rendition of a wish book for those not quite ready to drop out and pursue that vision, but who might be ready to try out some of its trappings. "It was kind of an underground Sears, Roebuck catalog, except that rather than hawking the newest, the biggest, and the most expensive, it did just the opposite.

And in the process, it was helpful in a hip avuncular way which suggested that survival might be possible after all."³²⁵

The Whole Earth Catalog originated within the hothouse atmosphere of the midsixties Haight-Ashbury scene in San Francisco. Edited by Stewart Brand, the catalog originated as a product of his personal vision, and Brand's philosophy and outlook infused the entire Whole Earth enterprise with a wonderful sense of the possible. Brand thrived in the center of the San Francisco countercultural vortex where the Psychedelic Rangers, the Merry Pranksters, the Diggers, and the Family Dog all viewed themselves as agents of great change. Instrumental in arranging and orchestrating several of the original countercultural celebrations, including the Be-In and the Trips Festival, Brand was also extremely interested in Native American anthropology and rightfully deserves partial acclaim for the strong "Indian" influence in the counterculture.³²⁶

Like the countercultures themselves, the Whole Earth Catalog reflected a hodgepodge of concerns and issues. Divided into seven sections, the catalog was part radical bibliography, part how-to book, and part philosophical tract. On the one hand, the Whole Earth Catalog encouraged a mystical, but rarely flaky, attitude toward life, the earth, and community. Its review of the Tao Teh King [frequently Tao Te Ching] offered mystical insights liberally sprinkled with reservations and caveats since, as one Whole Earther found, "reviewing the Tao is like reviewing the Bible. As soon as you presume, it just giggles and rains on you. Nevermind."³²⁷

Brand and his staff sought to temper this countercultural mysticism on the other hand with a down-to-earth practicality. Stressing simple, straight-ahead reporting, the catalog's choices for general information included two relatively noncountercultural publications, Fortune Magazine and the Wall Street Journal. The catalog noted that Fortune "made the contents of most popular American magazines look like so much paste," while praising the Wall Street Journal for "extensive reporting on sure-enough news, not who murdered who." The catalog proved a unique merger of Brand's clear-headed thinking and Aquarian vision. For example, in a review of a book entitled The Sciences of the Artificial, the catalog noted that the author made "useful suggestions - lots of them probably wrong and useful anyway." The Whole Earth Catalog attempted to bring the values of the counterculture to a wider audience, and in so doing, aided the development of very broad movement indeed, one that embraced a spectrum that ran from Wall Street to Tibetan Zen monasteries, and one where even acknowledged error received appreciation so long as it displayed a certain ingenuousness.³²⁸

Through all its various editions, the Whole Earth Catalog offered a running critique of both modern technological society and American culture that blended the two into a single indissoluble entity, one that constituted a clear and present danger to humanity and to the planet. Positive alternatives accompanied the critique, offering necessary survival options to a culture clearly out of control and bound for certain tragedy. On its most basic level the catalog disagreed with the nation's blind

rush to progress: "one may question the concept that the growth of America's industrial monster represents cultural progress." While attacking progress, the Whole Earth Catalog nevertheless advocated change, and its staff viewed themselves as agents of that change, although the American culture resisted even such modifications, even when in the nation's best interest. One reviewer found "conservation is asking Christian America to quit being Christian America, America saying can't, I need the money."³²⁹

A central dispute within the counterculture revolved around the issue of the locus of change. They shared a belief that contemporary problems were beyond the power of existing institutions to prevent or control. "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." These institutions failed to exercise control, in large part, because they could no longer control themselves, having grown too complex and unwieldy to regulate themselves, much less anything else. The Whole Earth Catalog staff believed that the key to change lay not in revolution, rebellion, or resistance, but in a quiet and gentle pulling away from the mainstream, since only the "purest, back-to-the-land-and-live-simply movement" could counter the older forms and structures with "resistance and creativity" and offer humanity a new hope.³³⁰

This Whole Earth vision of simplicity echoed the Psychedelic Rangers' dream of an "electric Tibet" more than it subscribed to the primitive standards Gottlieb

extolled and the communal movement seemed to follow. The Whole Earth Catalog refused to cater to the romantic pastoral vision of preindustrial America that obscured reality and assured the failure of so many communal projects. Implementing practical solutions dictated that the Whole Earth outlook carefully analyze and comprehend the industrial realities, foregoing what could be reasonably done without tract housing, a new car, a technical degree or processed food and focusing on the simplest, *most natural* way to achieve shelter, transportation, knowledge, and nutrition. The Whole Earth Catalog succeeded where so many communes failed, in large part because its philosophy was less one of total withdrawal, a virtual impossibility, than of pursuing a "guerrilla" lifestyle in the heart of the "New Wilderness," an urban/suburban equivalent of voluntary simplicity.³³¹

The big first step toward empowerment and responsibility lay in demystifying the cult of expertise. The Whole Earth Catalog constantly implored persons to take responsibility for their own lives by taking control of the technology they depended upon. Technology must be brought under personal control because large-scale systems dehumanized people, building complexity to a level beyond the ability of single individuals to control, as the movie Fail-Safe cautioned. The new age philosophy demanded personal involvement, stressing the holistic credo that small personal decisions brought large social and cultural changes, as implicit in the phrase "the personal is political." By directly confronting the lack of knowledge and

skills that forced people to rely upon others for every need in their lives, Brand thought it possible to break the cycle of dependence that bound people to impersonal centralized systems that provided those needed services. Reasserting personal responsibility for the world became the only way to decentralize and recapture the humanity "lost" to the machine culture.

Living simply to establish familiarity with the details of your world, with ordinary local mysteries and miracles such as the wiring system in your house, the fabric of the garments you wear, the truth of the food you eat. Behind the information, the advice, the hints, and the facts, this book is about coming to see things as they are, through your own eyes, instead of the hired eyes of some expert or other. It's about training yourself to trust yourself, and trusting yourself to train yourself, until you're able to claim your right as a human.³³²

The Whole Earth Catalog advocated technical competence as the necessary first step to regaining control, and the strong sense of possibility in the catalog emphasized the self-confidence needed to take that first step. A review of *Outward Bound* praised the program for its ability to teach people to "be open about all the other things you know you couldn't do." Brand and his staff dispelled the first myth of expertise, that technical knowledge is arcane and difficult to acquire. Being personally open to possibility and attempting to do the difficult underlay the entire Whole Earth Catalog approach, which one reviewer pointed out as the chief characteristic of the Merry Pranksters' Acid Tests and "the only deeply useful thing I found in Ranger and paratroops training in the Army."³³³

In stressing preparation, whether by purchasing or constructing the right gear or by absorbing the necessary knowledge for a task, the Whole Earth Catalog enjoined its readers to approach life from an informed position as well-rounded persons, *whole* persons, people who realized that their lives and actions mattered to themselves and to others. Centering on simple practicality, American DIY (Do It Yourself) attitude and pure Yankee know-how, self-reliance, self-sufficiency, and individualism, the Whole Earth Catalog promoted a practical technical competence based on skill and knowledge. Brand emphasized that the pursuit of simplicity began with taking responsibility for the world we (as gods) created, and to that end sought out and advocated many of the cutting edge technologies of his day.³³⁴

The Whole Earth Catalog offered a new American understanding of technology, one that accepted its use and even promoted further innovation, but also sought to minimize its adverse effects by striving for balance. It advocated that technology should be approached with a caution inherent in understanding, not blind enthusiasm born of hope. The Whole Earther understood that humans use tools, but that both the choices and the use of those tools eventually shape the user. Progress predicated on technology alone seemed akin to the person with a hammer to whom everything looks like a nail, seeing only what the hammer could do, with little or no real concern about its effect. The catalog offered a "doable" alternative order, one that allowed people to take more control over their lives and lessen their reliance on technical experts. The Whole Earth Catalog fostered the

development of well-rounded persons, new renaissance men and women in the midst of the sixties. Not content to rely on or merely accept outside expertise, these people sought personal competence, as individuals, they sought to recapture their own lives.³³⁵

A perfect example of the Whole Earth approach to technology was its take on one of the most problematic of all machines, at least in the sixties context the automobile. Keeping to its personal competence theme, the Whole Earth Catalog's offerings were mainly parts catalogs, most prominently the DIY car owner's bible, the J. C. Whitney Auto Parts Catalog. Several works on auto and motorcycle repair were also included in the section. One longer review evaluated a trendsetting book, one that stressed both simple and workable options: How To Keep Your Volkswagen Alive: A Manual Of Step By Step Procedures For The Complete Idiot. The VW, in many respects, served as a near-perfect Whole Earth automobile. Very simple and highly practical, the 1960's classic Bug offered not only outstanding fuel economy (at a time when few people in America thought much about it) but also featured *the* simplest automobile engine for amateur mechanics to work on. The Whole Earth Catalog's review of the manual featured two separate critiques, one a gushing puff piece which typified counterculture editorial style by including two words rarely found in technical manuals: feelings and love. As an uninitiated mechanic, "you will learn to 'feel the car' and perform the necessary tasks with love." Descriptions of the actual procedures of automotive repair also relied on

groovy, rather than mechanical, language. "When the Volksie front end needs your tender attention, it'll let you know by feeling insecure, a not-unknown trip in any relationship." Lastly, the author seriously suggests contemplating the vehicle's "karma" before buying it.³³⁶

Though counterculture literature frequently sunk to this "cosmic slop" level of language usage, Brand's own sensibilities called for a somewhat more direct and practical level of analysis. He felt inclined to add a review stating that the greatest fault of the book arose from the writing itself, "a chummy style that will not be too amusing the second time you read it. HOWEVER . . . an idiot can actually do major repairs on his VW with the aid of this book, and that friends, is saying a lot." The Whole Earth Catalog left little doubt that it constituted sheer stupidity to simply rely on things to work when, for all intents and purposes, they might as well be magic to you. The fact that anyone *can* do it, even idiots like you and me, was the essential message of the Whole Earth Catalog.³³⁷

What was true for the Bug was true for everything else the average American seemed to have forgotten how to do. By stressing that any idiot could fix a VW, Brand asserted that the average idiot could control almost anything, as long as the scale remained fairly simple and that complex scales only served the interests of the experts themselves. Moreover, since these were man-made creations, the least humans should expect from themselves was the basic competence necessary to control and maintain them. Anything less amounted to a tragic failure, one that

dehumanized and marginalized people and in the process wrecked their creations. The Whole Earth Catalog endorsed the technological equivalent of Martin Luther's split from the Church, boldly proclaiming *everyman his own mechanic*. The experts routinely deceived us. Most things were not that difficult to do once you knew how. Everyone could build a house, educate themselves and their children, any group could establish a community, everyone possessed the ability to create art and every life could be art. Freedom lay in mastery, the control gained by doing. All in all, the Whole Earth outlook offered a clear, refreshing, and practical approach to social change.³³⁸

Beyond extending personal competence, the Whole Earth Catalog promoted an underlying philosophical notion of Whole Systems. Whole Systems theory provided a framework to understanding a new global reality, one arising in part through technology and in part through a new scientific understanding fostered by the ecology movement. Emerging concurrently with the publication of the catalog, the popular ecology movement provided the linchpin of the Whole Earth Catalog's natural solution. The emerging scientific theories of ecology supplied the synergy necessary to sustain the Whole Systems argument, and provided overarching reasons for the changes advocated by the Whole Earth ideal, regardless of wishes and hopes to the contrary. The catalog's multipage spread on ecological texts were the central focus of the "Whole Systems" section. In the Whole Earth context, ecology proved not just a passing phase or trend, but the central revealed truth of

the new age. Specific texts were chosen, not necessarily for the information they conveyed, but because those selections focused particular attention on a vision that "points toward ecology as a way of life."³³⁹

Half apocalyptic, half a "modern version of the crusades," the Whole Earth Catalog envisioned a massive, worldwide ecology movement resulting from "the public outcry against pollution as a evangelical call to cast out evil," an evil primarily technological in origin. The crisis of a dirty planet, the most obvious and odious effect of technological progress, must be met head on with the hip equivalent of an old-time religious revival. The Whole Earth's vision of Whole Systems honed the cutting edge of the decade's, and perhaps the century's, greatest crusade, a fight for planetary health with nothing less than the survival of the human race hanging in the balance.³⁴⁰

Well in advance of Earth Day (the bibliographies for which were almost identical to the Whole Systems booklist), the Catalog stressed the need for the countercultures to embrace and adopt ecology's main goals and ideals and promote the incorporation of those values into a total, natural way of life. Attention focused on issues where personal choices (the personal is political) instigated vast and sweeping changes. Population growth provided one such area. In examining works such as the collection of essays entitled Population Evolution and Birth Control, C. P. Snow's The State of Siege, and Dr. Paul Erlich's classic The Population Bomb, the general tone of the Whole Earth Catalog's reviews often sounded apocalyptic

notes. Erlich's text won particular praise for predicting, "there's a shit storm coming. Not a nice clean earthquake or satisfying revolution but pain in new dimensions." Several other quotes chosen from the three works amplified and extended this grim vision of impending holocaust, brought about not through war or error but, rather, through success and accomplishment.³⁴¹

The Whole Earth Catalog did not trade in doom and gloom scenarios as a rule, but provided just enough to demonstrate a critical and overwhelming need for reform and change. Brand and the Whole Earthers balanced apocalyptic visions with "fantastic new possibilities," appropriate for people who cast themselves as "Hope Freaks." The blurb for The Second Genesis: The Coming Control of Life mused, "What I like about the threat of total human control in the near future is that it obligates us to figure out fast what we are about. We got the power: here comes the responsibility." The Whole Earth's ecological perspective offered a bold vision for the future, one loaded with possibility and responsibility in equal measures.³⁴²

Two books in particular stressed possibility and responsibility with regard to ecological life; Barry Commoner's Science and Survival and the collection The Subversive Science: Essays Toward an Ecology of Man. Commoner's work led the reviewer to assert that the basic foundation of Western science was predicated on a "death-fear-driven" mentality. Any advance originating out of such a context "merely changes the size of the package that death comes in. There's less of piecemeal local, 'natural' dying, and more of massive 'caused' dying. I think I prefer

the old way." The Subversive Science offered articles and essays seriously reexamining several fields of knowledge in light of recent findings in ecological science. More radical than Commoner, The Subversive Science promoted ecology as the alternative to the older Western scientific traditions, proclaiming itself capable of undoing many of those harmful traditions.³⁴³

Two basic introductory guides to the issues, tenets, and core writings of the ecology movement, The Environmental Handbook and Ecotactics, were prominently featured in a joint review. The Handbook, a Friends of the Earth publication won higher praise than Ecotactics, the more staid Sierra Club version, though the reviews made clear the necessity of both volumes as "complementary" texts which could "fill in each other's holes." Both vanguard publications popularized the ecology movement, bringing its message to a wider audience. They stressed the need for radical change, particularly in America's addiction to an out-of-control machine culture that all the while displayed a curious detachment from the actual tools themselves, a system grown overly complex and abrogating control to experts who, from their narrow perspectives of specialization, failed to understand how each piece fit into the larger whole. This central thesis of both works and the Whole Earth Catalog found an echo in the popular science fiction author Robert Heinlein, whose alter-ego Lazarus Long scornfully insisted that "specialization is for insects."³⁴⁴

The Whole Earth Catalog stressed the development of whole persons not merely as individuals, but as members of larger communities, and the Whole System for people offered the first popular holistic thought and theory. Deliberately avoiding fixating on any single aspect of life, the broad sweep of the Whole Earth ideal fostered a balanced approach and sought to downplay the value of specialized expertise on a personal level. In the Whole Earth view, the new culture must be capable of simultaneously merging Eastern philosophy and Western technique, demonstrating equal dexterity at both. The two should not be perceived as mutually exclusive, a computerlike either/or, rather karma and mechanics could, and did, complement and enhance each other. Scientific knowledge did not contradict spiritual metaphysics, but offered a fuller illumination, allowing a perspective that encouraged awe at the beauty and complexity of the systems that comprise both our ecosystem and our technologies, while compounding it with an appreciation born of understanding and ability, not ignorance and incompetence.³⁴⁵

This integrated, holistic approach suggested by the Whole Earth Catalog dovetailed well with the other sources of ecological thought emerging concurrently with the publication of the catalog. The Whole Earth approach attempted to seek a synergy, where the human role within the natural whole offered purpose and meaning based on quality rather than quantity. The understanding of life as a whole system, of which humanity was a part (and only a part), arose from a mystical attachment to nature rationally reinforced by the emerging science of ecology. This

sense of interconnectedness, experienced as part of the mystic nature of the LSD experience, paralleled the writings of several widely circulated scientists. Simply put, each act was part of a greater whole (or several greater wholes), with specific and widespread impacts and ramifications rippling out from the act itself in ways the instigators could not control or predict. Thus the counterculture sought not just evolution on a personal level, but actively attempted to incorporate their personal growth into a larger whole, giving rise to a notion of not just evolution, but of co-evolution.³⁴⁶

In this way, the Whole Earth Catalog sought and advocated a comprehensive grass roots change in American culture. Through various radical social issues ranging from ecology to women's liberation, the Whole Earth Catalog cajoled the countercultures to "bring the revolution home" and establish a new and vibrant culture within America. Brand challenged the counterculture to go beyond simple slogans and ideas, instituting radical changes in their personal lives. "Alternative living means more than moving to the country; it means change at a fundamental level." In the Whole Earth vision, the only real and viable alternate path was that of the "serious ecology revolutionary."³⁴⁷

Earthrise: *Good morning, starshine, the earth says hello*³⁴⁸

Before the Trips Festival and the Human Be-In, and long before any realization of the Whole Earth idea in catalog form, Stewart Brand pursued his personal holistic vision. In the Haight-Ashbury scene, Brand sported the nickname "Whole Earth Man," not because of any catalog, but because since 1966 he had been lobbying NASA in a one-man campaign, parading around various universities and media outlets wearing a sandwichboard that posed the question: "Why Haven't We Seen a Photograph of the Whole Earth Yet?" Brand hoped to cajole NASA into programming one its various earth orbit satellites to pull back its focus, and take a picture of the whole planet in all its spherical glory. For reasons never quite understood, this idea never occurred to the space agency but, ever susceptible to public pressure, NASA obligingly retasked a satellite and took some photos.³⁴⁹

Brand's quest to take the planet's portrait and publicize it as a means of increasing awareness and bringing Whole Systems enlightenment to earthbound humans was undertaken with good intentions and a stellar gut instinct. Most covers of the Whole Earth Catalog featured these NASA photographs of the earth from space. (Whole universe pictures were used on the last two catalogs, courtesy of Carl Sagan.) One cover in particular showed a small earth and an even smaller moon. In small type, the word "closer" appeared under the earth and a huge "Further" splashed across the top of the moon (not coincidentally, the destination *Furthur* was displayed on the front of the Merry Pranksters' bus). The Whole Earth

Catalog reviewed several books on space as part of the Whole Systems section, some of them focused on the more mystical aspects of the enterprise. One volume dedicated to NASA pictures was characterized in classic psychedelic language as "one of the simplest, most thorough, inescapable mind blows ever printed," although the reviewer complained that some of the material offered was purely propaganda: "NASA's bid for your interest in the next steps in the real space odyssey." Still, the works were labeled "convincing" on the one hand, and "a hell of a book" on the other. The Catalog also noted the bargain \$7 price tag on one volume of photos, and pointedly stated that, if the Sierra Club had published it, "it would cost \$25."³⁵⁰

Other space-themed offerings in the catalog presented variations on Brand's grand whole earth vision. No countercultural offering would be complete without obligatory posters, and there were several incorporating the whole earth theme under the heading of *Whole Earth Rising*, also referred to as "Mandala Earth" in the accompanying text. The Whole Earth Catalog also pioneered an Earth Flag, designed along the same lines and billed as "a flag that's just for people." Brand wrote, "I don't know if I'd die for it" (unsurprising at a time when dying for a flag struck many as absurd), "but it does give me a good feeling." More revealing of Brand's ideals was his remark that "it's the first flag I've seen that I don't feel it somehow excludes me."³⁵¹

In his efforts to use a picture of the earth as a motivating device, Brand's instincts were uncannily accurate but it would take a more sensational photograph,

one shot under profoundly historic and dramatic conditions, to accomplish the same task in the American mass market. Even as the Whole Earth Catalog published editions with a whole earth satellite picture on the cover, the world's attention was captivated by a photograph shot by the Apollo Eight crew as they rounded the dark side of the moon. Dubbed *Earthrise*, the picture featured the earth ascending over the "desolate lunar landscape," hanging alone almost precariously against a starless black void. This image, described by Time as "so marvelous as to beggar the imagination of even the most dreadful of their fellow earthlings," resulted from the human race venturing out into the universe "singing with procedure" only to look back and find "the blue planet steeped in its dream."³⁵²

Some societal changes can be adequately summed up in a book or a story while movies and songs do well for others, but the power of a single photograph to freeze a moment in time, to simultaneously stir both the imagination and the soul, may well be one of technology's true miracles. These Apollo photographs, the likes of which had never been seen before, produced a strong, esoteric change of perspective. Brand felt his NASA campaign "would force us to realize our poignant aloneness, our total interdependence." He could not have been more correct. At the end of 1968, a year so stormy one historian referred to it as "the year of the barricades," NASA's Christmas gift to the cause of peace on Earth was that simple photograph, an image which galvanized the mainstream shift towards acceptance of the holistic vision the counterculturalists had been pushing, of humanity being part

of a greater living whole, and here was that whole, in living color looking tie-dyed and psychedelic to boot.³⁵³

As Brand had hoped and believed, the photo produced a reaction akin to walking out of Plato's cave and suddenly seeing the Big Picture in its entirety. Like the Whole Earth flag preceding it, this photograph didn't exclude anybody and, unlike the other famous photographs of the decade, this was one picture that people could and did feel good about. A symbol of everybody and for everybody, a picture so perfectly sublime that it could be used as an aid to meditation, a space-age mandala affording a chance for true cosmic contemplation. In the end, *Earthrise* also proved to be everybody's favorite type of picture, a picture of *us*. Every one of us were *on* that planet, a concept simultaneously surreal and hyper-real. From the most advanced and powerful technology that man ever created, one capable of venturing out into space, returned a mystical holistic vision of earth in the manner of the most extraordinary group photograph ever taken.³⁵⁴

The photograph captivated many people, and a strong theme originating from it: an awakening planetary consciousness, a whole earth idealism, emerged from widely varying sources following its publication. Many were struck by an anthropomorphic certainty that our planet possessed both consciousness and sentience, a notion which captured the imagination of Allen Ginsberg who, after the moon landing, explained his vision to one interviewer:

"Come over here," he said, "I want to show you something." The something turned out to be the Life magazine cover picture of the earth that

had been taken from the moon by the Apollo 11 astronauts. It was taped prominently to one wall of the kitchen. "This is an apocalyptic age, all right. If you don't think so, just take a look at this. The earth. Look."

He waited in an attitude of silent insistence for a long moment as I studied the photograph of the greenish-blue sphere with the swirls of white surrounding it. "It's alive!" he said.

And that was true enough. There was something about the photo, perhaps in the way that the filmy layers of white that are the atmosphere seemed to have been stopped in sudden, swift motion. Or perhaps it was just the warm, beautiful color of that globe that made it seem alive.

"It's a living being. Don't you feel like one cell, one being, looking at another? Probably it thinks. Do you suppose it's conscious? When you look at it like this you get the feeling that it's we who are not conscious. She's more conscious than we are. Everything in human experience, everything in the higher philosophy that we pay lip service to has considered that yes, it is a person there. Think of what Wordsworth kept trying to tell us - wasn't it this?³⁵⁵

This rapturous holistic vision was not exclusive to Ginsberg, or merely an echo of an LSD induced revelation. In the issue of Life magazine preceding the launch of Apollo 9, a lengthy article entitled "The Heron and the Astronaut," by Anne Morrow Lindbergh reached the same conclusions. She contrasted the upcoming flight to the moon with the beauty of the Florida coastal swamp surrounding the Kennedy Space Center. Lindbergh felt the flight of Apollo 8 gave humanity a "new perspective," one that offered a real chance to heal "the unnatural rupture between man and the universe" resulting from a "machine dominated civilization." This power of transformation arose not from an enhanced connection to the universe, but from increased awareness resulting in a profound emotional connection to the earth. The space program, the decade's most dazzling and most publicized technological achievement, delivered an experience from which modern Americans

rediscovered what was "precious" about life on earth, and what needed to be "preserved" to aid its continued existence.

This renewed sense of harmony with the universe may be partly responsible for our happiness at the Apollo 8 achievement. We have been given another image of ourselves and our place in the cosmos, but it is an image that brings both pride and humility in equal measure. For we have regained a lost and vital sense of awe and mystery.³⁵⁶

The vision of life offered by this "advance in science, mechanics and electronics" displayed the "earth's richness and beauty, marbled with brown continents and blue seas - the only spot of color in a black and gray universe." Lindbergh argued for a balanced approach, one reflecting the "rare and delicate essence" of life she beheld in these photos. Arguing that "power over life must be balanced with a reverence for life," Lindbergh concluded with an ode to the interrelatedness of life, a holistic vision sounding more like the Whole Earth Catalog than NASA:

As we left the beach at Cape Kennedy the last evening, our eyes followed a lone heron over the marsh, and rose with a cloud of wheeling ducks on the horizon. We realized with new humility, born of a new pride, that without the marsh there would be no heron; without the wilderness, forests, trees, fields, there would be no breath, no crops, no sustenance, no life, no brotherhood and no peace on earth. The heron and the astronaut are linked in an indissoluble chain of life on earth.³⁵⁷

The emergence of this central tenet of modern ecological thought as the centerpiece of a NASA essay in Life demonstrated an appreciation of a more holistic view on the part of people far beyond the confines of the counterculture and

the Whole Earth ideal. Though appreciation is not equivalent to acceptance, the awe bordering on reverence that the NASA pictures inspired demonstrated that a wider range of American society than Brand and a few other San Francisco refugees was in the process of rethinking basic premises. An editor from Look magazine recalled:

Those pictures from space clarified things. The final arbiter of our destiny would be not generals or industrialists or land developers but the earth itself. In the long run, the most grandiose plans of presidents, prime ministers, and general secretaries would run up against its carrying capacity. There would finally be only so much abuse it could take before it laid waste to the ambitions of the exploiters. That shining globe floating in the loneliness of space became an emblem of human unity.³⁵⁸

It does seem ludicrous that a photo resulting from the greatest technical event in the history of transportation would create a profound urge for a more natural existence, but it was clear that not only Brand, but Life, Look, and the rest of the mainstream press were confronting the reality that technological society had inescapable limits. The world was indeed finite its edges now clearly defined by that picture, and it was not a great a leap from that realization to the militant environmental awareness Leary and others began to advocate in the late sixties.

This is a war for survival. Ask the turned-on ecologists. They sadly admit it. I declare that World War III is now being waged by short-haired robots whose deliberate aim is to destroy the complex web of free wild life by the imposition of mechanical order.³⁵⁹

CHAPTER 7

ECOLOGY TRANSCENDS ENTHUSIASM

Cascading Failures: *The electric dust is starting to rust her trapezoid thermometer taste / all the red tape is mechanical rape of the TV program waste / Data Control, and IBM, Science is mankind's brother / but all I see is drainin' me of my plastic fantastic lover.*³⁶⁰

Real events provided support for these ideas, as a veritable cascade in failures of various technologies flooded the public consciousness in front of the imposing backdrop of nuclear terror. These disasters, defeats and disappointments raised general technological discontent and often played directly into radical arguments, aiding their cause. Problems do not, in and of themselves, necessitate, or dictate any certain course, but these technological setbacks were co-opted by those already sold on a certain course as a means to sell it to the general public. An interaction of events and ideas, they "raised awareness" (or "consciousness" in the parlance of the time) on one level, and provided a focal point to rally support on another. For the radical opponents of Progressive progress, these events confirmed what they already believed, but they also provided persuasive arguments to aid their recruitment efforts.³⁶¹

Technological dilemmas arose from several broad categories of problems or groupings of failures. Not all had an equal effect on technological enthusiasm, but each served to diminish it to some extent. The first group includes those problems and disasters that arose from the ignorant or careless use of technology, or its outright abuse. These situations could be easily discounted as controllable

aberrations, requiring more education than amelioration. Then, there were those that were just outright bad or wrong. Drug scares, along with nerve gas accidents, increased the general trepidation about technology but these, too, seemed easy enough to contain and control at the time, even if such did not prove to be the case in the long run. A different order of crisis, far more important in the deterioration of technological enthusiasm, resulted from a cause-and-effect chain of events arising from unforeseen consequences or unfavorable interactions with other technologies. These incidents encompassed a whole range of unforeseen effects or were the indirect result of unanticipated events. Many of these negative effects came to light only after the technologies that caused them were in widespread use or application. Some cropped up in the consumer sector, from laundry detergents to artificial sweeteners, as an increasing number of foods and product additives were proven harmful, usually causing cancer. A few resulted from changes in natural cycles occurring through technological innovation. The opening of the St. Lawrence Seaway created several such problems. Alewives, a species of salt water fish, swam through the seaway and then died in the fresh water, leaving piles of dead and decaying fish on the beaches, particularly the lakefront park system in Chicago during about high summer. The resulting stench from the putrefying fish hung in the air for months. The introduction of lampreys into the Great Lakes, through the same change, caused harm to many native fish populations, and thus to local fishing industries.³⁶²

The final category, and the most disillusioning and disaffecting, followed in the wake of an excess of success. These problems arose, not out of abuse or outright flawed reasoning, but from the very success that was the original hope of its designers. Television was destroying the nation, whether because people watched too much, or because the poor quality of the programming, or because the cathode ray tube was physically harmful in and of itself. Tires designed for enhanced winter driving safety chewed up the pavements of American highway system, creating hazardous conditions for drivers. It was these problems, crises arising from only the best of intentions and widespread successful application, that were most closely tied to the promise of a better life through technology and became the most difficult to confront. This was the crux of the modern Progressive dilemma and the most vulnerable point targeted by those discontented with the results of such progress. The better things got in a general sense, the worse the overall picture became. William O'Neill insightfully commented:

Up to the sixties the ecological price for higher living standards seemed right, but no longer. Even if human life were not extinguished, the quality of life might well decline. If so, higher incomes would no longer translate automatically into higher living standards. No one could buy clean air. Before long it might be impossible to escape pollution by moving to a "better" neighborhood. Abundance had been the American dream. Now it threatened the hopes it was supposed to realize. There was more irony here than people could bear.³⁶³

This was not the initial reaction to any single failure, but rather the end result of the unfolding of all these problems on a holistic level. Problems fed into each

other, creating a synergy of events as well as an ever escalating list of total failures. In particular, these problems showed an alarming tendency to reverberate far beyond their initial impact, and to negatively effect people and places far removed in both time and location and down the line. The acceleration of these numerous smaller issues into a cascade of failures increasingly undermined public faith in technological solutions. Indeed, by the decade's end, these seemingly unrelated problems combined and, in an accumulated total far greater than the sum of its parts, constituted a national and eventually a worldwide crisis. Running a gamut from spectacular oil spills, whether from ship wrecks or well blowouts, to killer smog episodes, through a series of more trivial problems like the cranberry scare, these problems appeared to be everywhere, from the smaller problems of chemical laundry additives to the apocalyptic vision of the Cuyahoga river in Cleveland on fire and burning into the night. Had all of these problems arisen only from failures, enhanced technological solutions might have seemed more attractive, but the fact that they arose out of the very success they had been intended to achieve fostered discontent with technological solutions per se.³⁶⁴

Pollution became a general rubric and catchword for all of these excesses. Although deliberate, uncontrolled, and careless pollution had been a problem for decades, it became increasingly obvious in the later part of the decade that the long-term consequences of technological expansion had to be met, and met here and now rather than eventually. "Pollution," in sixties usage, was by intent a vague

and ill-defined term, one that could be construed broadly enough to prove that the problem was literally everywhere. There were problems of air pollution and water pollution that threatened the most basic requirements of human life. There was food pollution caused by additives used in food processing as well as the residual chemicals from agricultural pesticides, and those that originated from another source entirely, such as mercury concentrations in tuna. Noise pollution was linked to mental health problems. Light pollution was decried by professional and amateur astronomers alike. Like Leary's previously unknown "right to get high," some began to agitate for far more basic rights: a right to quiet, a right to darkness. Far less arguable were the right to breath clean air and drink pure water. Each of these pollution problems was, in its own way, part and parcel of a thriving and productive economy, and yet each affected "the quality of life." They came to be seen not as individual episodes, discrete and separate, but as an entire range of problems arising from human design. The emerging claims of rights, considered as a whole, coalesced into the right to avoid technological imposition, be it loud radios, constant traffic, or perpetual artificial daylight.³⁶⁵

Alarming levels of three particular kinds of pollution affected the most basic necessities of human existence. These were not obtuse threats to inconsequential activities, but clear and present dangers to the fabric of life on earth air, water, and food. They affected the most basic of human activities, down to whether the kids

were allowed to go outside and play. In turn various outcries, overtly and subtly, began to amount to a systematic attack on America's basic notions of progress.³⁶⁶

Smog quickly became the decade's poster child for pollution, largely because it was an abundant and easily noticed example; Its ubiquitous brownish haze filled the skies over most U.S. urban areas, particularly where inversion layers trapped the pollution. Smog was the ultimate example of an excess of success and Los Angeles, already infamous for excess in almost everything else, led the nation in this too. L.A. was the one city most specifically designed to accommodate America's love affair with the automobile, and the one American city that suffered the worst as a consequence of that accommodation.³⁶⁷

Automobiles, trucks, and buses were the prime culprits in air pollution, urban congestion, and noise pollution, but the passenger car in particular was emblematic of the prime causes of these accumulating evils, an excess of personal consumption and an abundance of affluence. Considered by many to be "the greatest air polluter of them all," automobiles spewed 60 percent of all air pollution, adding 90 million tons of pollutants, lead, carbon monoxide, hydrocarbons, and 200 other chemicals to the air. In 1967, as the ecological ideal began to infuse and inform the environmental movement, America had about 90 million vehicles on the road. The cumulative effects were staggering. These cars and trucks produced 66 million tons of carbon monoxide, 12 million tons of hydrocarbons, and 6 million tons of nitrogen oxides, along with smaller amounts of carbon particles, sulfur oxides, and

particulate metals, with lead leading the pack in both volume and toxicity. No end seemed in sight as the experts predicted an additional 13 million vehicles out on the highways by the end of 1970, just three short years up the road.³⁶⁸

California led the nation in dealing with its acute auto pollution problem. As early as 1961, the state had mandated the use of blow-bys, a simple recycling device for automobiles, in an attempt to deal with emissions caused by incomplete fuel burning. By 1962, all automobiles produced in the United States were standardized with this first specifically antipollution feature, a fact that owes more to the importance of the California market in total percentage of car sales than to ecological aspirations on the part of Detroit auto manufacturers. In 1964, in a continuing effort to deal with pollution, the California state legislature approved, and then mandated, the use of four models of exhaust control devices in all California cars starting in 1966.

The eventual federal standard, which copied California's, called for a compliance deadline of 1968. The auto industry vigorously opposed such mandates, claiming that the evidence presented to Congress was "massive and erroneous," and applied only to the unique combination of factors in Los Angeles, its climate, culture, and geography. The auto industry went so far at one point as to denounce the federal efforts as part of a "billion-dollar smog hoax." Others were not so impressed; by 1967, the situation in California had grown so bad that the head of California's trend-setting Division of Environmental Sanitation, Frank Stead,

recommended that internal combustion engines be completely eliminated by 1980. Though such extreme measures never were implemented, they exemplified the increasing attacks on motor vehicles in particular and the consumption-based American lifestyle in general. Stead joined many commentators who were increasingly linking the problems of the environment to the American lifestyle and not just to its industrial processes.³⁶⁸

Nationally, a few rudimentary attempts to combat the air pollution menace were underway by the early sixties, but these efforts were meager at best and aptly described as piecemeal. Nationwide, by 1960 the country had spent \$8 million on air quality projects, with the lion's share going to Los Angeles, where \$3.4 million were expended to fight air pollution. These early efforts not only failed to cure the problem, but air quality apparently continued to worsen.³⁷⁰

What had actually changed (and continued to change) was not the quality of the air, but the public perception of the problem. There was a growing public realization of the interrelatedness of the geographically discreet phenomena and the degree to which pollution crossed borders and boundaries that seemed to confine the older problems. The air quality problem reached such seemingly critical proportions by the late sixties that one overwhelmed citizen exclaimed "air pollution gets to you even after you're dead!" a shocked response to efforts on the part of New York City's Trinity Church to prevent further decay in limestone headstones in the church's eighteenth-century cemetery. This problem was not unique to the

United States, as it was noted that the ruins of classical antiquity in Greece and Rome suffered greater deterioration in the current century than they had in the preceding five. This provided yet another surrealistic apocalyptic episode, as modern civilization literally melted all that preceded it.³⁷¹

This decay resulted from the corrosive effects of sulfur-dioxide impregnated rain, or, more commonly, acid rain. This form of urban and industrial air pollution increasingly affected the countryside by way of changing pH balances in lakes, streams, and forests far removed from the original source of the emissions. Air pollution in one area became water pollution in another in a vast interrelated, industrial cycle, as pollution proved capable of destroying natural areas that had been considered safe, protected, and pristine.

Apart from acid rain, water pollution in general reached crisis levels in almost every body of water in the nation, caused by pollutants ranging from the truly lethal to the absolutely mundane. Rivers, streams, water tables, tidal lands, oceans, and drinking water treatment systems all deserved attention as they faced one threat or another. The overall effect was described as a problem of excess and success in one publication:

Man has always used streams and lakes for dumping whatever he didn't want. But with an increase in population and a more frightening array of things to be discarded, twentieth century Americans have turned many of their waterways into stinking, unsightly pools of poisonous, unspecified liquid. The use of rivers as sewers for human waste is appalling.³⁷²

The reality of the situation, simply stated, was that the nation's waters were being overwhelmed by greater amounts and more lethal kinds of pollution than their natural recuperative abilities could accommodate. Once this pollution threshold had been reached, public response changed from blasé acceptance to outrage practically overnight. That is, the problem finally became manifestly obvious to everyone. When examined (for the first time by many), the scope, size, and total magnitude of the problem appeared to them to be overwhelming. By 1965, the City of New York was dumping half a *billion* gallons of sewage into the East and Hudson Rivers every day. Nor was the problem limited to New York. A 1967 storm overflowed Chicago's sewers and sent a twelve-mile-long clump of nearly raw sewage into Lake Michigan. Even the pastoral San Francisco Bay area, home to many leading environmental organizations including the Sierra Club, suffered from excessive water pollution. One wag, a Harvard professor and part-time social critic, sang, "The breakfast garbage that you throw into the Bay / They drink at lunch in San Jose."⁶⁷³

This was not a problem limited to a few major urban areas. Water pollution came in many forms and showed up virtually everywhere in episodes that were in turn tragic and comical. The nation's water supply faced other threats besides raw, unprocessed sewage. Chemical pollutants, including insecticides, weed killers, solvents, industrial wastes, agricultural chemicals, and hundreds of others too numerous to name each posed a potential health risk, and their presence in the

water supplies clearly highlighted the long-range effects of unchecked expansion and growth. Bodies of water that were devoted almost exclusively to industrial use fared even worse. The Houston Ship Canal, for example, no doubt deserved its assessment as "probably the filthiest, worst polluted body of water in the world today."³⁷⁴

Lakes across the nation suffered from both acid rain and direct industrial pollution. The Great Lakes in particular were each affected in separate and often unique ways. Lake Superior contained taconite runoff from decades of intensive mining operations. Southern Lake Michigan was threatened by one of the nation's worst polluters, the enormous United States Steel Corporation complex in Gary, Indiana, which pumped over 330 million gallons of industrial waste into the lake every year. Lake Erie, the most extreme casualty of water pollution of the decade, was declared "dead, or at least a process of decades to clean up."³⁷⁵

The forces of production created one set of problems and the culture of consumption another, each interrelated and dependent. Pollution was a byproduct of the manufacture of consumer goods, a consequence the consumption of those goods and, finally, a result of their disposal after the consumption. Along with obvious culprits like huge steel mills and other industrial complexes, never "environmentally friendly" in the first place, causes far more mundane also served to create major problems. When the cumulative effects were totaled, even minor activities precipitated major and substantial ramifications.

Take laundry, for example. Getting clothes "whiter than white" with a product "stronger than dirt" engendered a pollution problem fraught with complex interrelationships, where attempted solutions only generated even more threatening problems. New, synthetic detergents designed for greater cleaning power were only 50 percent biodegradable, where previous natural laundry products had degraded completely. Because they really *did* work better, the problems caused by changing the chemical makeup of these detergents were compounded by success and excess, brought on by the number of washing machines hooked into water and sewage systems and the number of loads done in those washers. More nondegrading detergents, used in ever more washers, did ever more loads. The resulting walls of suds, the combined residue from millions of wash days, floated down the nation's rivers. On occasion, these foaming walls grew large enough to present a navigation hazard to barge traffic. When the state of Wisconsin passed the nation's first law banning "non-degradable" detergents, one official illustrated his argument by pointing to a wall of sudsy foam thirty-five-feet wide, three-hundred-feet long, and fifteen-feet-high that was currently drifting down the Mississippi River.³⁷⁶

The development and implementation of solutions to this problem created their own unforeseen consequences that, in turn, raised new concerns more frightening than those that had preceded them. In early 1968, nondegradable detergents were phased out, and improved new stain removal products utilizing

enzyme action were introduced on the market. Early on, reports alleged that several workers at an English chemical plant manufacturing these additives suffered skin problems from exposure to enzymes, and enzymes were later linked to other health related problems, including cancer.³⁷⁷

Yet a third laundry-related problem arose from the use of phosphates and their replacement with NTA (nitronuriacetic acid). Phosphates were extremely damaging to the environment and, in 1967, national concern rose to high enough levels to force the passage of several acts banning laundry products with phosphates. Manufacturers replaced phosphates with NTA and obtained apparently suitable results but, by 1970, NTA was also proven unacceptable, providing yet another example of how "a solution becomes a problem."³⁷⁸

The underlying problem was not just the repeated failures of these attempted solutions, but the very nature of this entire cycle, where rampant success itself precipitated cascading failures. In the end it was a simple case of overload, with far too much of a good thing becoming bad when viewed in total. Cars and laundry, such perfect everyday symbols of the American middle-class consumer culture, demonstrated how consumption and excess caused the greatest failure of all, and the most difficult to solve. These technological solutions and programs were not inherently flawed. The danger lay in their very success at doing precisely what they were designed and conceived to do. The American Dream, whether manifested as a Chevy or a sparkling clean shirt without the drudgery in the washing, ultimately

became its own killer curse as the democratic ideal (not to mention the mass consumption/mass production imperative) of widespread ownership was realized. A Chevy was not dangerous in itself, but 60 million of them proved to be deadly. It was this realization that caused the critical eye of the environmental movement to fall not only on industry and big business, but to increasingly turn inward, to the individual citizen, where it balefully regarded the total sum of American modernity and the fulfillment of the Progressive vision.

In the final analysis, particularly within the holistic perspective, all of these problems revolved around smaller decisions. Senator and presidential candidate Edmund Muskie wrote: "it is easy to blame pollution only on the large economic interests, but pollution is a by-product of our consumption-oriented society." Or as one student wrote, perhaps even more poetically than the senator: "the ecology movement cannot be isolated from the framework that made it necessary. Finally, it again boils down to a question of priorities, a question of economics, power and lifestyles. Affluent America is going under in a crush of super V-8 engines, steel mills, chemical mills and oil rigs. The consumer society is consuming us." O'Neil was correct. It was, indeed, "More irony . . . than people could bear."³⁷⁹

Along with the everyday successes and the accumulating ironies, the widely publicized and sensational disasters of the decade also hinted at an imminent ecological crisis, with spectacular reminders of an impending Apocalypse erupting periodically from the background cascade of failures. Vietnam became an initial

focus of ecological studies, but the other war issues overshadowed its ecological aspects. The oil industry, however, provided several extremely tangible and highly publicized failures. Well blowouts and shipping disasters made for spectacular film footage, mobilized thousands of volunteers and, with help from their own particularly arrogant spokespeople, served to cast the oil industry as an easy strawman for the emerging ecology movement. The spills and slicks provided potent images, both of technological failure and its ultimate cost. Few images, in a decade filled with sorrowful pictures, provoked the pity and horror of oil-soaked sea birds floundering on a beach, itself a grim blackened wasteland of surrealistic proportions. Rachel Carson rose to fame worrying about a world "where no bird sings," and here, in glorious color photography, was another vision of that world, where, as Bob Dylan had sung, "black is the color and none is the number."³⁸⁰

Here again, a technological success set the stage for large-scale failure. Prior to the 1960s, oil tankers of 80,000 tons had been considered large but, led by the Japanese, ships with 200,000-ton capacity were numerous, a 300,000-ton ship was to be ready later in 1967 and 500,000-ton ships did not seem far off. On March 18, 1967, the *Torrey Canyon*, a "supertanker" carrying 119,328 tons of crude oil, ran aground off the southwest tip of Great Britain. The tanker was owned by the Union Oil Company of California, registered in Liberia, leased to British Petroleum and carrying an Italian crew, which placed it under Italian maritime law at the time of the grounding. It was on its way from Kuwait in the Persian Gulf to Milford Haven,

Wales, where BP operated a large refinery. The *Torrey Canyon* demonstrated the inadequacy of programs with only a national political focus. They failed to achieve any realistic improvement in what was becoming an endless series of interrelated problems that transcended national borders.³⁸¹

When the *Torrey Canyon* veered off course in March of 1967 it ran into a reef that ripped a 650-foot-long hole in the ship. A "Second Battle of Britain" loomed as an oil slick, sometimes as large as sixty square miles, drifted toward major vacation and tourist destinations in Cornwall. For the first week favorable winds kept the slick at bay but, over the next seven weeks, prevailing easterly breezes covered over 100 miles of British beaches and coastlines with thick crude oil. In the first week there were several unsuccessful efforts to salvage the wreck, but in the end the Royal Air Force bombed the *Torrey Canyon* with napalm and other explosives in an effort to burn off the oil still remaining in her tanks. This effort alone cost the British Government \$2.5 million, and the cleanup totaled an additional \$7 million.

The vessel's location fairly close to shore provided plenty of photo opportunities. The threat it posed to both France and England, along with heavy publicity in the United States, along with the Byzantine chain of responsibility, made this wreck the first real international ecological disaster. The *Torrey Canyon* demonstrated a growing incapacity to deal with problems caused by improvements in technology. Tankers had grown to enormous size, but no corresponding increase in abilities and methods needed to deal with tanker shipping disasters had occurred.

The *Torrey Canyon* provided a foretaste of what would be America's most spectacular environmental disaster of the decade, the Santa Barbara oil spill.³⁸²

Reminiscent of the Bodega controversy, the channel islands that dotted the horizon off the Southern California coast were being considered for national park protection even as the permits to drill in the channel were granted to Union Oil. "The Blob," as the Santa Barbara oil slick became known, looked at first "like a big yellow boil bursting with pus," according to one of the first public officials on the scene, some twenty-four hours after the initial blow out. The well continued to leak for eleven days (with residual seepage occurring over a period of years), slopping some half million gallons of oil from a well less than six miles from shore. With its location so close to the media center of Los Angeles, the spill generated a level of coverage unprecedented for any environmental disaster. Nightly coverage on the location of The Blob was featured on nightly national news, and Southern California, for obvious reasons, was particularly gripped by the coverage³⁸³

Early efforts on the part of Union Oil to deal with the problem proved unproductive. Successive technologies failed, and the company's public relations efforts fell short of reassurance. When the oil slick finally landed on the public beaches of California, "it lay so thick on the water that the waves were unformed, they make a squishing sound." The scope of the disaster and particularly its effect on wildlife proved most disturbing to many people, a pornographic orgy of slow death in a glistening, blackened wasteland. A groundswell of support boosted the

ranks of GOO (Get Oil Out), providing the local group with national exposure, and the episode became a focal point of the ecology movement, which warned that "degradation of the environment could ruin Santa Barbara's pride and turn it into just another technological slum."³⁸⁴

Out of all the water pollution problems throughout the sixties, Lake Erie stood out as the worst-case scenario. Erie suffered severely from an endless litany of problems, one of which reached apocalyptic proportions in the summer of 1967 as a river of fire flowed into a dead lake. The argument for a status quo approach to environmental problems gained little from being illuminated by the light of a burning river, where locals claimed that people who fell in did not drown but suffered slow chemical "decay." Cleveland, located on the shores of dead Lake Erie and bisected by the flaming Cuyahoga River, acquired a reputation as the "Mistake on the Lake," and the local environment was considered by many to be "beyond help." The secretary of the interior pronounced the area "under sentence of premature death." The river of fire captured the nation's imagination in a grim way, providing a real event to demonstrate the possibility that the foretold apocalypse was finally here.³⁸⁵

The Apocalypse In Present Tense

*What have they done to the earth, what have they done to our fair sister?*³⁸⁶

In a 1990 book, Remaking Society: Pathways to a Green Future, ecological pioneer Murray Bookchin remarked that contemporary America was haunted by "nightmares of an ecological apocalypse," but these visions of environmental Armageddons had not always troubled America's sleep. They were a deliberate construction of the sixties attack on progress and technology. One editor of a 1970 anthology of ecological writings stated in his Preface "that the international complexities of the environmental crisis together constitute the most serious problem facing mankind." Such was a standard enough claim for ecological literature that year, yet the author also saw no need to "inventory pollutants or to list the familiar doomsday predictions." These doom and gloom forecasts were familiar to the generation defining the problems. All knew, in the words of Barry Commoner, that "the ecological facts of life are grim."³⁸⁷

The sense of imminent apocalypse made manifest by the development of nuclear weapons and their intercontinental delivery systems lent believability and urgency to environmental issues. This was reinforced by both the cascade of small-scale failures and the momentous nature of the larger ones on two levels. First, as noted, each event in the cascade of technological failures produced a small net impetus to the growing discontent with technological enthusiasm. Secondly, an intellectual framework based on holistic ecology was being constructed to attack

technological enthusiasm and used each such event as a piece in something much greater than the simple sum of its parts. Such a framework allowed these isolated events to be woven together into a single holistic problem that, like a ripple on a pond, eventually affected everything. The impact of these events was amplified by a background of writings that envisioned a stark future of death and destruction unless fundamental changes were immediately implemented. The works of several writers proved key to providing such a framework by developing and exploiting apocalyptic visions, holistic ideals, and solutions drawn from outside of technology. A few notable books dealing with various aspects of the environmental problem were in publication in the early sixties, and by the end of the decade a veritable deluge was underway, but it was the work of one key writer that proved critical in creating an effective systemic interpretation of our increasing technological hazards and breakdowns.

In 1962, Rachel Carson's book Silent Spring stood out. It was an influential book at a time when there still were influential books. Carson's gift lay in her ability to write about science and nature for adults in language that could be easily understood, and she particularly excelled at penning poetic descriptions of biological processes and chemical interactions in the natural world. Her style and arguments seemed a perfect combination for the popular media and culture. An unabashed romantic in her role as a scientist, she lovingly spanned the gap between Snow's "two cultures." Paul Brooks wrote that Carson "was a realistic,

well-trained scientist who possessed the insight and sensitivity of a poet." An alumna of the Johns Hopkins graduate school of biology at a time when few women were active in science, Carson worked for the federal government for years, writing reports and performing field observations while also writing for the popular market. Carson apparently knew well the general tone of popular scientific work in her time, as her publications sold well in both book and article forms. Carson also held solid credentials as a screenwriter for nature films, including one on clouds entitled Something in the Sky, and winning a 1952 Academy Award for Best Feature Documentary, The Sea Around Us. It is more than fair to say that Carson was tuned into popular culture and the mass market in a way shared by few, if any, other scientific writers at the time. The popular success of her book and film of The Sea Around Us brought Carson fame, fortune, a wide audience and the leisure to write on topics of personal interest.³⁶⁸

The end result of the years of work and research that Carson poured into her primary interest would, in the words of one reviewer, "do for the control of chemical pollution of our environment what Upton Sinclair's The Jungle did for the Pure Food and Drug Act in 1906," although in truth, that underestimated Silent Spring. Justice William O. Douglas compared the work to Uncle Tom's Cabin, perhaps a more apt metaphor, as that work was frequently credited with starting a war.

Carson's working title for her book, Man Against the Earth, was planned as a wide, general analysis of chemicals in the environment. As Carson wrote, she

decided to tightly focus her attention on one particular chemical, DDT, analyzing in detail its range of effects on the wildlife, water, and soil, rather than taking on the whole chemical industry in a scattershot approach. Postwar era changes in agricultural production methods had given rise to widespread pesticide use. That these new poisons *were* poisonous was obvious, but Carson carefully traced associated risks that were hard to isolate and difficult to prove, demonstrating that they were far more poisonous than anyone ever imagined. In order to bring her readers to this deeper ecological understanding, Carson meticulously researched the book for over four years and provided more than 50 pages of notes to accompany her 300 pages of text.³⁶⁹

Few books ever attain the fame or level of impact and influence that Silent Spring generated. In a most singular way, Carson's book paved the way for the sixties wave of environmental awareness by extolling a holistic interpretation of the natural world under the term "ecology." This was a new understanding, one where the stakes were no longer a single scenic canyon out West, a beautiful forest grove, or a unique stretch of beach but as with nuclear weapons, all life on earth. Many leading ecology activists of the sixties and since began by reading Silent Spring. Environmental histories acknowledge her influence, stating "the third and largest wave of environmentalism began building in the mid-1960s after the publication of Silent Spring and achieved tremendous momentum and public acknowledgment by Earth Day 1970." Carson's book began a movement that outlasted every sixties

epochal change - the sexual revolution, student activists, the New Left, antiwar mobilization, or the War on Poverty - save feminism. The advice of Christian Century, which wrote: "it ought to be placed in the required reading list of every community leader, every lover of nature, and every citizen who cherishes the great natural resources of our nation," was apparently well taken. In the end, Carson succeeded in "making a book about death a celebration of life."³⁹⁰

Carson's primary message focused attention on the ecosystem, the ecology that tied the bounty of nature to the growth of society and tied the health and strength of society back to nature. As she stated in the true thesis sentence of the book, "the history of life on earth has been a history of interaction between living things and their surroundings." To Carson, nature gave life and, just as importantly, nature gave life meaning; it instilled "a sense of wonder." Carson saw nature as holistic and cyclical, involved with long-term processes of interdependence and interrelation that were constantly and synergistically at work. Her intention was to apply scientific understanding to fashion an argument intended to inspire almost spiritual notions in order to stop "man's war against nature." The end goal was to write a book that adequately explained the ecological point of view, and Silent Spring was a case study that perfectly illustrated the overall tenets of ecology. Central to this point of view was Carson's stressing of alternatives, the "Other Road" of the book's final chapter.³⁹¹

Carson sought to counter the worst tendency of the modern physical sciences, that of reductionism leading to expertise, by stressing an inclusive notion of ecology, which was a unity theory of the life sciences. With Silent Spring, Carson distilled and poeticized these ecological ideals and transformed them into a basis for public action, in effect bringing about the beginning of science in the public interest. Counter-expertise and public information frequently led to reform, political action, legislation, and regulation in a wide variety of fields, and Carson's was the first in a long line of critiques that drew behind them a group of activists and action groups that identified problems and proposed solutions.

The success of the book brought about many sweeping changes in America. Carson became the decade's first great counter-expert, skillfully using science in order to boldly take nature's side in its war with technology, progress, and "the senseless, brutish things that were being done." This was, quite literally, science against technology, with the expressed purpose of being a "witness for nature." In so doing she brought to the forefront the disputes, contradictions, and differences within the scientific community that were increasingly dividing the scientific experts. This presentation of science in conflict, while not at all an unusual condition in science itself, struck the public as novel in the age of monolithic science. Science, particularly the life sciences, was separating from technology and technological enthusiasm, sending the clear message that science would no longer be technological progress's handmaiden.³⁹²

Most importantly, Silent Spring was a nontechnical, yet scientifically literate, attack on technology. The problem of technology lay in the excess of success, rather than any overt failure. The solution had become the problem. "The problem whose attempted solution has brought such a train of disaster in its wake is an accompaniment of our modern way of life." Both the uncontrolled use of agricultural chemicals and their uncontrolled growth in the marketplace mushroomed from a few test applications to mass market quantities in very little time, and with very little study. This postwar generation of pesticides proved far more deadly than originally thought, particularly when augmented by the "rapidity of change" brought about by "the impetuous and heedless pace of man."³⁹³

Some of the problems Carson detailed could be considered, and were argued by the chemical industry, as unfortunate but necessary side-effects of prosperity, their risk and cost written off as the "price of progress." Carson endeavored to demonstrate that the true cost of such developments proved much higher than anyone had been led to believe. Carson linked all forms of contamination of the natural world as pollution and demonstrated its origin "as a byproduct of the industrial and social development," that in turn would become "the central focus of the environmental movement." This identification of pollution as both an acute symptom and as a metaphor and catchword for the failure arising out of technological success, began largely with this ground-breaking presentation by Rachel Carson. "The most alarming of all man's assaults upon the environment is

the contamination of air, earth, rivers, and sea with dangerous and even lethal materials," she wrote. Rather than benefiting man - as progress intended to - the path led to a ruined landscape of death, a wasteland of man's own making that would eventually kill its creator, too.³⁹⁴

In Carson's analysis, the waste, foulness, and avariciousness in America were in themselves only a surface symptom of a profoundly deeper, and even more negative, change in the human nature and spirit. Science itself, particularly chemistry, was dismissed by Carson as antimodern, a Stone Age practice, which was to blame for this decline. Their goal of reducing reality to formulas and allowing science to be commercialized polluted the practitioners' own skills. The many experts who attacked Carson were not to be trusted because these commercial and reductionist tendencies corrupted their objectivity. It only stood to reason that, as Bush would have it in the Endless Frontier, science drove technology, and this led naturally to Barry Commoner's turning Bush's theory around to ponder, "If modern technology has failed, there must be something wrong as well with our science, which generates technology." Reacting to postwar developments, many were seeing for the first time how the new science-based products threatened the very survival of life on earth, at once more banal and more insidious than atomic bombs. These were all man-made replacements for natural processes, and each upset nature's balance. What in the beginning seemed like only a little bit of a problem grew to become an incalculable one with sweeping consequences. A huge and

unstoppable "machine" overtook the landscape and poisoned all Carson saw. Insatiable technological imperatives only created needs and products as goals in themselves rather than enabling means to human ends, which was what the students in Berkeley thought and what many thought Bodega demonstrated.³⁹⁵

The crucial linkage Carson drew in Silent Spring was her deliberate attack on the notion of technological progress, which incorporated the rhetoric of the Cold War and the crisis tone of an imminent Armageddon. Carson lamented that technology was rapidly outpacing human knowledge, and the damage that resulted from this imbalance appeared total and probably irreversible. The consequences of natural destruction frequently occurred far down the line, in unpredictable and often unforeseen manners. Carson's ambivalence toward technological progress, like that of the public she wrote for, arose from nuclear fears and, in particular, the linkage of space and the atom that occurred with the launch of Sputnik. Carson wrote, *a la* Whole Earth imagery, but with much darker undertones and years before Brand's optimism, "man actually seems likely to take into his hands - ill-prepared as he is psychologically - many of the functions of God." Scientific knowledge was becoming widely misapplied through technological development. With the launch of Sputnik this knowledge was misapplied in the heavens and, as Carson set out to demonstrate with Silent Spring, much closer to home. "The whole process ... seems caught up in an endless spiral."³⁹⁶

What Carson accomplished was the linkage of apocalyptic notions of the atomic age to an expanding notion that the earth could not support the continued growth of technological civilization in general. Carson thus not only took full advantage of the growing ambivalence toward science and technology, by examining an agricultural community that she explicitly linked with the menacing atomic community, she also created a new set of fears and concerns far closer to home than nuclear weapons.³⁹⁷

In Carson's Silent Spring, chemical poisoning becomes analogous to fallout, "part of the universal contamination of the planet." The industrial chemicals were "sinister and little recognized partners of radiation in changing the very nature of the world - the very nature of life," so that "along with the possibility of the extinction of mankind by nuclear war, the central problem of our age has therefore become the contamination of man's total environment with such substances of incredible potential for harm."³⁹⁸

The link between the two issues radiates out from Carson's efforts. The widespread fears of the age were voiced in many forms, from editorial cartoons to a bewildered columnist who wrote in 1962: "Isn't it enough to have the threat of atomic war, a population explosion . . . now we must face the prediction that chemical warfare against insects is contaminating our air, sea and ground." There was no safe ground, no safe haven. Whether atomic or industrial in origin, humans now lived in an environment laced with ". . . elixirs of death. For the first time in the

history of the world, every human being is now subjected to contact with dangerous chemicals, from the moment of conception until death.¹³⁹⁹

The image of apocalypse dominates Carson's work, termed by one publication "an angry shrill tract against modern farm chemicals." Though one-sided, Saturday Review nonetheless felt compelled to note that "her distortion is akin to that of the painter who exaggerates to focus attention on the essentials. It is not the half-truth of the propagandist." Silent Spring set a tone of apocalypse in environmental writings in such a manner that Rodrick Nash could write, in a broad survey of the environmental movement, that "fear catalyzed modern environmentalism," and in particular that this fear "developed from an understanding of ecology." This knowledge of ecology brought an understanding of how "a careless technological civilization could impact catastrophically on the health of the entire ecosystem," the very point Carson originally set out to make.⁴⁰⁰

"At least partly, the new millennialism represents a radical attempt to replace the ideology of progress and to dislodge from power its primary perpetrators and beneficiaries." The subtlety of Carson's approach was intentional, as "most influential apocalyptic narratives do not undertake a wholesale attack on the ideology of progress or its attendant faith in science, technology or liberal democracy." Rather than destroy, they erode, so that such "texts appear not as the rhetorical equivalent of total war but as shock tactics to win the hearts and minds of the general public."⁴⁰¹

Following Carson, doom and gloom based on apocalyptic scenarios became the stock in trade of the ecology movement and environmental writings. Enthusiasm rooted in a faith in beneficial progress fell from popular favor, replaced by a technological trepidation encouraged by the ecologists and based on an overt fear of a dark future. Catastrophe, crisis, and calamity such as those that befell Carson's "town in the heart of America" waited just around the corner, and in every case, "the people had done it to themselves." A newly created, or discovered, profusion of experts made careers out of interpreting the funereal handwriting on the wall. Unfortunately, few possessed Carson's literary skills and her subtle, almost poetic, end of the world, more of a *petite mort*, was soon replaced by imposing, stark apocalypses. Carson's world ends with a quiet silence; those that followed her, feeling compelled to more closely match the times, end theirs with a bang. The most obvious of them all (and not inconsequentially the most well known) brought the bomb analogy full circle first fallout, then population, from one bomb to another.

In the late sixties world of prophets of doom, death, and destruction, Dr. Paul Ehrlich reigned supreme. A professor at Stanford, Ehrlich specialized in population biology. Prior to writing The Population Bomb, he had authored over seventy journal articles and scientific papers, as well as several other books on the subject. Critical generational differences were reflected in Carson's romantic descriptions of

the natural world and in the nonconfrontational nature of her book in direct contrast to Ehrlich's urgent screed.⁴⁰²

The paperback edition of Ehrlich's work stands as a textbook example of the brutal tactics of confrontation so well reflected by the politics of the sixties. Individuals were sternly urged to choose between two options, one of which was patently ludicrous, a rhetorical trick that assured near universal agreement, at least at first glance. "POPULATION CONTROL OR RACE TO OBLIVION?" intoned the banner question over the title, which appropriately frames the issue as Ehrlich presents it. Ehrlich does not seek or quibble over a middle ground or speculate on a compromise position in The Population Bomb. The cover's black and white drawing of a bomb with a lit fuse, captioned with the warning "the population bomb keeps on ticking," may well have been a mixed metaphor, but it nonetheless added to the general gloom of the cover.⁴⁰³

What the reader was immediately drawn to, however, was a yellow highlighted box, three-quarters of the way down the cover, which informed the reader that, "While you are reading these words four people will have died from starvation. Most of them children." This text gave the book an immediacy while instilling a certain uniquely sixties guilt, seeking to constantly remind people that, while they were browsing book shops in Palo Alto, the rest of the world was suffering horribly.⁴⁰⁴

Ehrlich begins the doom and gloom in his second sentence, by boldly stating that there will be famines in the 1970's in which "hundreds of millions of people are going to starve to death," and nothing could avert this oncoming problem. The generation of the sixties, reared in "misleading" affluence, faced a radically different world in the future, one where the "standards, politics, and economics of the 1960's are dead."⁴⁰⁵

Ehrlich's own epiphany began, as he recounts, "one stinking hot night in Delhi" when the human dimensions of the population problem struck him for the first time, creating intense fear. This experience "emotionally" brought home what he had already known "intellectually" for a long time, a wonderful example of the growing importance of intuition, in which the superiority of *feeling* to *knowing* became vital, even for Ph.D. scientists at Stanford. Despite years of training, teaching, research, and writing, all of which made him one of the top persons in his field, he did not sense that the population problem was real until he could actually *feel* it (emphasis in original). That it only took a summer's night in Delhi in order to understand the problems of overpopulation and did not require any sort of advanced degree leads one to doubt the validity, necessity, or even desirability of specialized expertise.⁴⁰⁶

Again in Erlich's volume as in Carson's, the excess of success confronted the reader, as the Delhi of Ehrlich's depiction is more than just a population problem, it is technologically dysfunctional. Excess population was linked to success in food

production, medicine, and transportation in a world where births exceed deaths because these technologies amounted in Ehrlich's words to "death control."⁴⁰⁷ Technology, beginning with agriculture, "removed risk from life." The Industrial Revolution furthered the process, and modern developments in medicine, both scientifically and technologically, were "the straw that broke the camel's back." Medical science had both "instant death control" and "exported death control" and was able to lower death rates before anyone really thought about the consequences, which now loomed large. Here in the modern world, as in Delhi, this was not progressive technology but dysfunctional technology, suffering again from an excess of success.⁴⁰⁸

Nor were contemporary efforts to ameliorate the crisis any comfort to Ehrlich. Family planning was "a proven failure," while other ideas were "inadequate in scope." Moreover science itself provided a retrograde influence. Committed only to the "establishment," they were interested only in the commercialized technologies of "death controllers." The scientific establishment, "typified by the behavior of the Committee on Population of the National Academy of Sciences," was dismissed by Ehrlich as a bunch of people on a "sinking ship studying marine engineering."⁴⁰⁹

Ehrlich viewed the population problem holistically, at least in the sense that all other environmental and social problems were tied to population. In his view, a population out of control demonstrated an entire world out of control, and a world out of control was best exemplified by the population explosion. To Ehrlich it did not

matter much what the problem was, environmental deterioration was easy and obvious, but communism, big government, war, taxes, and the leisure for academic studies were also tied to population control. In a final section of the book, entitled "Proselytizing Friends and Associates," Ehrlich demonstrates this by offering a wide variety of approaches to potential "targets," setting up one set of arguments for "extreme liberals" and another group for "extreme conservatives." No approach to moderates was suggested. If the "target" did not have children, Ehrlich suggested pointing out how "they're paying through the nose to raise other peoples' children." The longest and most detailed argument "targets" university professors, who Ehrlich speculates were "intellectually convinced" that there is a population problem but were prone to "form a committee or urge more research" as a solution. Ehrlich does warn that a person who engages in this activity was "at no small risk of being considered a nut."⁴¹⁰

Like Carson, Ehrlich's overall theme stressed the limits of the earth. Obviously in these works the carrying capacity was finite, whether for chemicals or population. Furthermore, both authors stressed that the point of no return was either looming into view or else already well upon us. Both authors also emphasized that science and technology, in and of themselves, offered no new workable solutions. So, not only was the capacity of earth limited, but in a far subtler way both speculated that so too was the planet's available room for improvement. There was little room for progress in a world caught in an escalating

process of diminishing returns, paying ever higher costs for markedly little gain.

The material progress achieved by the Progressive notion turned back on itself, in large part simply through reaching some sort of natural limit or saturation point.⁴¹¹

The limit perfectly illustrated in the Earthrise pictures, readily demonstrated in the cascades of failures, and noted in the work of Carson and Ehrlich, represented a major turning point in American notions not only about technology *per se*, but about the basic utility and desirability of Progressive change, a notion perfectly expressed by the icon of Spaceship Earth. Attributed to Adlai Stevenson, it was a concept promoted by R. Buckminster Fuller, Kenneth Boulding, The Whole Earth Catalog, and others until it finally became a cliché. Clearly demonstrated and virtually enshrined by the NASA pictures, this metaphor is interesting in two ways. First, and most importantly, within the framework of ecological thought, Spaceship Earth points to a holistic planetary ecology within a closed, limited system, an inalterably finite space.⁴¹²

Spaceship Earth also presents a strange mixing of the technological and the natural. The image was a high technology juxtaposition of Adams's Dynamo and the Virgin, where the technological conquest of the planet is fully realized, the earth is defined by its surrounding technology, and the natural strictly limits the technological.⁴¹³

CHAPTER 8

EARTH DAY

*They paved paradise and put up a parking lot.*⁴¹⁴

The first Earth Day, April 22, 1970, hardly stood out as a watershed event, sandwiched as it was between the major national crises of Apollo XIII and the invasion of Cambodia, with the attendant protests climaxing at Kent State with "four dead in Ohio." At the time, Earth Day passed with a mild flourish of coverage but little sustained or substantial national fanfare. One publication termed the events surrounding Earth Day as a "beginning," and in retrospect that seems modest and true enough. Certainly, plenty of writers described it so, yet in the circular nature of life every beginning, in fact, also marks an ending. The celebration of a new idea, a new ethic even, is rarely accomplished without the subtle discarding of its precursor. So it was that Earth Day delineated the culmination of a decade-long drift away from a social belief in salvation through technology.⁴¹⁵

Throughout the spring of 1970, especially during Earth Week and most particularly on Earth Day itself, everyone seemed to have something to say about the state of the earth, mostly focused on the cost of the modern, mechanized, technologically based life. More than just the latest "hot issue of the moment," 1970 was dubbed "Ecology Year" by one publication. Earth Day encapsulated a wide variety of thoughts, ideas, and ideals, part Carson and part Counterculture, tinged with both hope and shadows of the Apocalypse. The arguments put forth to support

the ideals of ecology sharply focused the future debate on issues of limits, the need for new assessments, the reorientation of national priorities, and the readjustment of personal lives in order to accommodate the new reality. Providing unity to the vast spectrum of speeches, announcements and pronouncements was a general intent obvious in the countercultural speakers as well as the establishment's best and brightest, proving just how deep and how wide these ideals had spread by 1970, of submitting the end result of technological advance to a cost/benefit analysis, after which "the price of progress" looked increasingly steep, and the "end of progress" actually seemed within the national grasp.⁴¹⁶

The counterculture in particular set the style and tenor of the event. Organizers redesigned the American flag using green and white stripes, and designed a logo for their movement to replace the field of stars, reminiscent of the popular peace symbol flag. Local events took on a carnival atmosphere, to the extent that one publication deemed the celebration a "bizarre national rain dance from sea to oil-slicked sea." Though schools were not dismissed for this new national holiday, many did the next best thing by skipping regular course studies and devoting the day to what became the last great Teach-In. One relatively new Earth Week organizing group, Environmental Action, spurred this trend by sending out information to 2,000 colleges, 2,000 communities, and over 10,000 high schools to aid this Earth Day effort.⁴¹⁷

The public events allowed the classic street theater tactics and ambiance of the sixties one last curtain call, as protesters cut up oil company credit cards *a la* draft cards, and returned products (and particularly their excess packaging) to the manufacturers in events known as Dump-Ins (of course). Participants also enthusiastically demonstrated nonpolluting alternative transportation modes ranging from the visionary to the ridiculous, including but certainly not limited to bicycles, roller skates, and pogo sticks. Burying auto engines and smashing up cars also proved popular activities, though the environmental value of such activities seemed extremely dubious. Countercultural influences clearly marked one of most surrealistic events, the Dead Orange Parade, staged in Miami with equipment on loan from its more mainstream namesake. Floats were decorated with "toilets, bottled sewage and gas-masked students" in order to win the coveted "most polluted" award. As if to demonstrate the difficulty in creating real change, the parade was misleadingly billed as "car free" when, in fact, Orange Parade floats were all powered by internal combustion engines, being little more than automobiles with the bodies removed from the chassis.⁴¹⁸

Efforts to dramatize and propagate the ecological ideal similarly encompassed a broad spectrum of concrete achievements. Efforts to actually clean up something, to "take arms against a sea of garbage," usually undertaken by the Boy and Girl Scouts or similar locally based community groups, were generally successful given the modest scope of their projects and limited resources, and set a

trend of activity that continues today, often as a state sponsored or sanctioned activity. Groups who attempted to display or collect some damaging environmental feature frequently did receive media exposure and public attention in their local press and fulfilled the goal of educating people about the local problems surrounding them.⁴¹⁹

Overall, though, in direct terms of really aiding the environment, the end result was only a modest one. Ironically, many Earth Day activities (including those at my high school) featured horses, touted as nature's own nonpolluting transportation solution. Few remembered that horses had created a huge environmental problem in the cities for which the automobile was originally put forward as a technological solution. People rode bikes to work and school, an activity inevitably dubbed "Bike-Ins." This proved a one-time occasion for most, but many others discovered a personal motivation and began to extend their efforts beyond the single day in an attempt to create a more ecology-based life. Moreover, the event brought these issues to the public's attention, and environmental factors remained at the forefront of a national and increasingly global debate. In this sense the goal of the movement, to "marshal all the accumulated machinery and manpower of mass protest to demand a halt to the wanton destruction of the nation's - and the world's - life-giving air, water and soil," was effectively met by the celebration.⁴²⁰

Like many movements in the preceding dozen years, the ecology campaign suffered a relatively dismal level of implementation, but it correspondingly brought forth many brilliant theoretical proposals. As a host of notable speakers fanned out across the land, it seemed as if everyone said something about the environmental situation. Speakers included past presidential candidates and future ones, scientists (including a Nobel laureate) many countercultural figures, and at least one obligatory member of the Chicago 7. These speakers generally expounded upon the depths of despair and disillusionment which the effects of science and technology had brought down upon the nation.⁴²¹

In fact, technological enthusiasm was clearly a dead letter in all but a few public pronouncements. At best, the only real supporters of any sort of technological solution were the large corporations and other institutions that stood to lose the most without it. These entities, whose motives were suspect at best but more often simply transparent, often found their public relations efforts scorned and occasionally even singled out as a leading detraction from the general credibility of the event. The fact that most of the organizing for Earth Day events was conducted out of offices in Washington, D.C. and that the idea itself originated in a United States Senate office, also presented a fatal flaw to several detractors.

However, it is a strong measure of the impact of the celebration that the outpouring of public relations efforts frequently originated with the "Most Wanted" ecological targets themselves. The duplicity of many newborn environmental

advocates was noted by a New York congressman who mused: "when you find Nixon, Rockefeller and Reagan on your side, you know you're in trouble" and noted that "the present rush for a seat on the environmental bandwagon is causing quite a clatter." The secretary of the navy hastened to assure his listeners that "the U.S. Navy is deeply involved in the battle against pollution." The Army Corps of Engineers also enthusiastically chimed in, despite the fact that the corps had already been labeled "public enemy number one" by Supreme Court Justice William O. Douglas. They issued a press release stating, "We feel we've done a pretty good job in the environment aspects. Our people are proud of the water fowl flyways they've created, the growth of fishing, the care of ranges, the preservation of forests, the tremendous efforts in improving the quality of water. In fact, we feel we're in the forefront." Such statements rang hollow and appeared to many to be an outright joke, especially the leading proponents of the ecology movement, who held the corps personally responsible for many of the greatest environmental outrages and considered Naval installations to be major water quality offenders. One speaker, noting the Corps of Engineers' sudden environmental fervor, cynically quipped, "the next thing you know, the president of Chevron Oil Company will be applying for membership in the Sierra Club."⁴²²

It should come as no surprise that, in light of the particular targeting of the auto industry as a chief culprit in the fouling of the environment, Ford attempted to address these concerns while depicting themselves as being in the forefront of this

new quest for a clean planet. In a particularly oily public statement, a spokesman gushed, "Ladies and gentlemen, let me state at the outset the Ford Motor Company shares your concern over air pollution." The self-serving aggrandizement continued with Ford proclaiming: "We recognize that we have an obligation to help solve the problem and will continue to go all out in attacking the problem - from every practical standpoint - until it is solved." That the auto industry dismissed almost every pollution reduction measure as impractical (as a matter of fact it was pretty much their stock reply, and had been so for years) certainly left informed persons doubtful as to whether Ford's particular quest for solutions would encompass any possibility that was not based on ever increasing personal ownership of automobiles.⁴²³

This old attitude of expansion apparently did not extend far beyond Ford's boardrooms, and not everyone shared Ford's version of a better idea. Even workers in the auto industry began to doubt the future of the personal automobile, particularly when the legendary head of the autoworkers' union, Walter Reuther, caustically remarked: "It is asinine (I don't know of a better word to describe it) to have hundreds of thousands of people all going to the same place at the same time for the same purpose and all of them dragging two tons of gadgets with them." Reuther's plans did not include putting his workers out of a job, though. The majority of his statement strongly urged public support for federal mass transit

projects as a practical alternative, the construction of which would guarantee continued work to members of the union.⁴²⁴

The activists and the general public had good reason to be particularly cynical about the motives of governmental and commercial entities. Those institutions and corporations directly responsible for a specific aspect of the environmental problem frequently took blatantly crass and duplicitous positions, though for obvious reasons. Pepsi-Cola provided a wonderful example of the price of corporate leadership in the movement. The company encouraged its bottlers to get involved with local anti-litter campaigns and other local clean ups, which was all well and good, but a quote from the president of the Pepsi-Cola Corporation, James B. Sommerall, hinted at a far more devious rationale than eco-friendly concern for the planet. Supporting local feel good efforts "will win many friends and influence those people who might otherwise attempt to push through legislation banning non-returnable (bottles) and cans," a solution to waste and litter which the industry vigorously fought for years in state and local legislatures, despite the obvious environmental benefits of what has proven to be a remarkably easy, practical, and effective program.⁴²⁵

All of this sudden concern on the part of the titans of the establishment caused no small level of corresponding concern within the emerging ecology movement and the countercultures in general, as they saw their concerns coopted by their original targets. After all, the basic premise of Earth Day had been summed

up by a regional coordinator for Environmental Action, who succinctly stated: "What is good for General Motors, what is good for the Interior Department-oil industry-highway builders' complex, and what is good for the Pentagon turns out to be pretty rough on the rest of us." Ramparts responded to this grand establishment end run by advocating a level of direct action that, though few publicly condoned, many still sympathized with on a visceral level with their sweeping pronouncement: "The student at Santa Barbara who burned down the Bank of America probably did more to save the environment than all of the Teach-Ins and Survival Faires put together."⁴²⁶

The element of the Left and other counterculturalists who declined to participate in Earth Day opposed not the goals of the environmental movement but, in true sixties fashion, the relevance of the event to the larger problems of society. In an argument frequently used against the space program, detractors wondered aloud if this celebration of Mother Earth merely served to divert energy from more pressing needs. Many Earth Day speakers responded to this goad, feeling compelled to defend against the accusation that "there is a reasonable segment of the thinking population which consider the environmental-ecologic fanfare a first-class cop-out - a convenient diversion of anger over the injustices of racism, of poverty, of an idiotic, dehumanizing war, of man's general inhumanity to other men."⁴²⁷

There was more than a degree of truth in that. Even establishment stalwarts like Senator Walter Mondale warned about these tendencies, attacking those who sought to portray ecology as a harmless outlet intended to "occupy restless minds and bodies during spring." Mondale cautioned his listeners against adopting an attitude of "let the amateurs clean up America and leave the professionals alone to clean up southeast Asia." Within a holistic framework, such separation proved a superficial distinction, since as even the senator pointed out in a *Whole Earth*-based synopsis, "the crisis of environmental decay is clearly bound to the crises of poverty, blight, racism, war, and economic injustices."⁴²⁸

This relation between problems, the interconnectedness intrinsic to a holistic worldview, was stressed by several speakers. The environmental crisis, perceived from within this framework, was virtually impossible to separate from any other crisis of the day. One speaker noted that "the Vietnam war and the ecological crisis have the same roots," a deep internal linkage which bound both to roots within the Progressive ideology. In the holistic appraisal it wasn't just a question of "pollution" or "war." These apparently discrete problems were only surface manifestations because, on a much deeper level, "both are products of a highly technological, mechanistic, dehumanized society; in the one case ruthlessly expanding its interests in southeast Asia, in the other, ruthlessly expanding its interests at home; in the one case economic imperialism; in the other, ecological imperialism." Those who worried about ecology deflecting attention and energy from other pressing

social problems, whether Viet Nam or any of the others in the preceding litany, could take heart and gain strength by repeating the holistic mantra "One can't fight one without fighting the other."⁴²⁹

These discontents were in fact aspects of one overriding discontent, mere symptoms of a deeper cause. The principal organizer of Earth Day pointed to this single cause when, as part of a widespread assessment, he noted that progress was, well, not *progressing*. "Things as we know them are falling apart," was his gloomy appraisal. "There is an unease across this country today. People know that something is wrong." He summed up his disdain and despair with one concise statement, a simple and powerful lament: "everything we touch turns to garbage."⁴³⁰

It was the notion of scientific and technological progress that was singled out as the root cause of these overall ills. Pilloried from just about every corner and not just by the young, the demise of progress founded on technological enthusiasm had become a general trend, as these ideas moved from one sector of countercultural thought, whose participants were overwhelmingly young, to a more mainstream acceptance. Both the reality and the basic ideals that underlay progress were attacked by a wide variety of speakers. One local activist, a head of GOO from Santa Barbara, wondered, "Isn't 'progress' good for the country? Isn't it progress?" Not anymore apparently, and most particularly not when the basis of progress and its end goals were defined exclusively by "the big interests, the moneyed interests,

the powerful interests" who simply "got their way because that is the way our system traditionally has operated."⁴³¹

Science failed to offer any real solutions and actually only created more problems, frequently greater than their alleged benefits, so to assume that a coming discovery or invention would bail America out, a Manhattan Project solution for the planet, was futile. Assessments of the potential for scientific advancement to foster continued or additional progress predicted only the most dismal results. One speaker quoted George Bernard Shaw's judgment that "science is always wrong. It never solves a problem without causing ten more." Thus the most basic notion of modern American society had finally been canceled out by the blind pursuit of progress, a process that now stood accused of destroying the very quality of life it had been promoted to ensure. Simply and elegantly stated, the result was that "our technology has outstripped our ability to deal with it." Technology created problems and fostered a general decline in the quality of life in the process that no longer afforded anyone the luxury of remaining uninvolved. "The people in this country can no longer remain quiet in the name of 'progress.'"⁴³²

This was not an open declaration of war, but it clearly demonstrated the movement from technological enthusiasm to technological ambivalence. In a tone and with a vocabulary usually reserved to describe errant teenagers, technology was depicted as a criminal on the loose, or more literally a Frankenstein's monster, one with profoundly more widespread and dire consequences than the good

doctor's creation. America was held captive by "a runaway technology, whose only law is profit, [and which] has for years poisoned our air, ravaged our soil, stripped our forests bare and corrupted our water resources." A clearly defined distinction between environmental concerns and technologically based progress had to be drawn, and drawn on the side of nature. "Our environment will only be restored when a 'cease-fire' has been called between this country's advanced technology and our environment." Not that this would be easy, the speaker cautioned, as vested interests with clearly defined goals blocked the way to a more balanced lifestyle. The crux of the issue was "whether industry is willing to sacrifice short-term profits to long-term gains," a prospect viewed as unlikely without massive public pressure and legislation.⁴³³

Those whose livelihoods depended upon technology were forced to acknowledge the scathing attacks and attempt some sort of defense. One speaker noted, "a lot of harsh things have been said against technology" as part of Earth Day, but he pleaded with his audience that "technology can be very useful. It all depends on the way it's used." But even within the ranks of its defenders, technology was to be a more moderate force in the future, based on strong, clear, and realistic assessments and subject to the increasing demands for regulation and control. "In any properly conducted society, all technology new and old should be under constant review in terms of the need and the goals and aspirations of society."

Nor should the nation rely solely on professional expertise in arriving at these assessments. "Who is to make those judgments - for one of our troubles now is that those decisions are all being made by the producers of technology" was the argument of the Bodega protesters, here at last on a national stage. The speaker maintained that: "one should listen to them and all they have to say, but in any properly conducted society, the ultimate decision should be made not by the producer, but by those who will have to live with the product." Interestingly enough, that definition proved problematic even to its propagator, who sheepishly admitted that "of course that's the marketplace argument, isn't it?"⁴³⁴

Overwhelming problems with technology and planning revealed errors in both the vision of the planners and the overall control of the agenda, "the problem of technological man's fixation on the 'now' [with] very little planning for the long range. This leads us to a number of other problems. One is that we constantly overestimate the value of present benefits to future benefits." Simply stated, the costs outweighed the gains, and there was a tendency to casually dismiss the consequences of technologically induced progress. The speaker continued, "we became so now-oriented that we became blinded by all the benefits of population growth so that we could not see the immense cost." His was a familiar lament and a now familiar plight: "we are growing too fast." Too fast, with too little foresight, and straight up a blind alley, one where real failure arose from the mistaken notion of a future without limits or boundaries. "Now, another problem that's related to this

notion that our society is very now-oriented is our failure to look ahead far enough to even *think* about the possibilities that there might be limits on anything."⁴³⁵

This noted biologist then grimly summarized the fate of technological enthusiasm's role in future progress. "You'll all say, 'Well, no problem.' In fact, this is what all the technological optimists say - no problems whatsoever - we're going to be saved by atomic energy. Really?" recalling the grim pronouncements of Carson, Ehrlich, and others when confronted with the proposal of a technological solution to the current problems.⁴³⁶

Rather than settling for a general decline in technological enthusiasm, leading figures now advocated a complete dismissal of its validity as a positive force. There arose from the concept of holistic inclusiveness a need to bring everyone into the ecological effort, even those who were opposed or sought to stifle or detour it. Finding the same source of humor in the situation as O'Neill did, one commentator said: "the ironic aspect arises because no favored group will be able to find a plastic bubble in which to hide from the consequences of an unbridled Madison Avenue hucksterism bent upon the creation of products and diversion of energies into activities that are both totally unrelated to worthwhile human needs and goals."

A new accounting demanded a shift in national values, readjusting notions and concerns to meet the needs of the earth, rather than enterprise, while steadily moving away from the demands and dictates of technological progress. This

accounting incorporated a deeper and more holistic notion of what constituted good and sought a far less favorable reading of technology. "With the worship of the Gross National Product, atomic energy developed the motto that 'good is up,' no matter how this did or did not relate to societal or human needs." America had become caught up in "a mad rush to 'more,'" a rush where the nation lost what "should be obvious, that the benefits achieved must clearly outweigh the risks (even though neither was subjected to measurement or other scrutiny)." This changing perspective on social notions was underpinned by taking the holistic approach and increasing the diligence and scope of the accounting for the price of progress. "For a promoter of technology, such a hazard [deadly radioactive waste] is, simply stated,⁴³⁷

The NASA program and recent near-tragedy of Apollo XIII were mentioned by several speakers, serving as a focus for their discontent with technological progress. At Harvard a speaker pressed the issue, singling out the NASA program as a prime example of the nature of warped technocratic values, poignantly reminding his listeners that "there's nothing in the entire remainder of the solar system as precious as one acre on the Earth. I'm terribly glad that we got those three astronauts back. Thank heavens for that. There's only one thing to add. They shouldn't have gone."⁴³⁸

Other speakers also made their points by using NASA to positively underscore the obviousness of the holistic world view. Brand's dream of a unifying

ideal of the planet, which he sought to emphasize by using the whole earth, became acknowledged in the larger national platform and debate. One speaker said of the *Earthrise* photos, "we have reached for the moon and beyond, and looking back through space we have been confronted by the insignificance of the planet which sustains us."¹⁴³⁹

Many struck a pessimistic note, disputing the very notion of the desirability of progress rather than merely criticizing the premises and practices by which progress was attained. A more thoughtful recollection, and perhaps a far more melancholy one, originated from the pen of a former major figure in the New Left movement, who wrote in his summation of Earth Year, "I've often wondered aloud at my luck for being twenty-three years old in a time and place in which only the past offers hope and inspiration; the future offers only artifice and blight." One New York Earth Day speaker stressed his own bleak outlook, one that starkly "suggests calamities ahead." He was no doubt correct as he surveyed the ruins of the Progressive dream from the perspective of his Earth Day platform and succinctly proclaimed: "The future today isn't what it used to be."¹⁴⁴⁰

NOTES

¹ Bob Dylan, "Subterranean Homesick Blues," Bringing It All Back Home. Columbia CK 9128, 1965. The album peaked in the number six position on May 15, 1965, spending a total of 32 weeks in the top 40 charts. The single fared somewhat poorer, rising only as high as number 39 on the same date, spending only one week in the charts. Bob Dylan sold most of his records as LPs opposed to 45 rpm singles, pointing to an older, more affluent and upscale audience. All lyrics for Bob Dylan songs checked using; Bob Dylan, Lyrics, 1962-1985 (New York: Alfred A. Knopf, Inc., 1973), revised and updated 1985. Dylan personally checked the galleys for the book and for this reason it is considered the definitive source for his lyrics as they appeared on the recorded versions. Live versions of his songs frequently differ. For precise recording information the most comprehensive guide is: Clinton Heylin, Bob Dylan: The Recording Sessions, 1960-1994 (New York: St. Martin's Press, 1995). The Billboard Book of Top 40 Hits, 5th ed. Joel Whitburn ed. (New York: Billboard Books and Watson-Guphill Books, 1992). Billboard was, and remains, the industry standard for record sales in the United States.

² Ralph Bellamy, Looking Backwards, 2000-1887 (New York: Random House, 1982) first printed in Boston, 1888: King Camp Gillette, The Human Drift (Boston: New Era, 1894), cited in Howard P. Segal, Technological Utopianism in American Culture (Chicago: University of Chicago Press, 1985). The airplane, like other inventions, was seen as offering the ability to lead man into utopia, always creating a "dazzling future, a virtual millennium." Joseph Corn, The Winged Gospel: America's Romance with Aviation, 1900-1950 (Oxford: Oxford University Press, 1983), 135.

³ Alan I Marcus and Howard P. Segal, Technology In America (New York: Harcourt Brace Jovanovich, 1989), 301-311. The atomic scientists predominated in the important postwar coverage, but popular science and technology magazines covered many of the less dramatic inventions. The best written coverage for World War II was Hanson Baldwin's reporting for the New York Times. Bush wrote, "without scientific progress no amount of achievement in other directions can insure our health, prosperity, and security as a nation in the modern world". The endless frontier, and Bush's comment in particular, are interesting for the blurring of distinctions between science and technology until they seemed to be one indistinguishable entity. Though an endless series of discussions and papers inside the scientific establishment and the academy debated the crucial differences between science and technology, particularly the issue of basic research vs. application, general audiences did not, assuming, (as Bush did, even if inadvertently), that they were pretty much the same thing. Vannevar Bush, Science, The Endless Frontier: A Report To the President (Washington, D.C: United States Government Printing Office, 1945), 1. The best sources on postwar enthusiasm are

Popular Science and Popular Mechanics for the years 1946-1955. Particularly noteworthy "Possible Dreams: Popular Mechanics and America's Enthusiasm for Technology" an exhibit at the Henry Ford Museum, February, 1992 to January 1994, Dearborn, Michigan. Exhibit poster from the author's collection. The author wishes to thank the gracious staff at the Edison Institute and their intern, Dave Harmon who facilitated my visit in the summer of 1993.

⁴ Thomas Park Hughes, American Genesis: A Century of Invention and Technological Enthusiasm, 1870-1970 (New York: Penguin Books, 1989), 1-3.

⁵ Ibid.

⁶ Thomas Park Hughes, Changing Attitudes Toward American Technology (New York: Harper & Row, 1975), vii.

⁷ Bobby Womack, "All Over Now." Originally recorded by Womack on Motown Records, the hit version was the cover by the Rolling Stones, London 9687, which peaked at number twenty-six in August, 1964. The song was also covered by Rod Stewart and the Grateful Dead at various points in their careers.

⁸ Magol, Shapiro & Julien, "Live For Today," The Grass Roots, Dunhill 4084, 1967. The record rose to the number eight position in June of 1967. "We want the world" from The Doors. The Doors, "Five To One," Waiting For The Sun Elektra 74024, 1968. The LP rose to the number one position in August of 1968

⁹ V. Bush, Endless Frontier. Intellectuals and pseudo-intellectuals both could ramble on - and did - about the Military Industrial Complex, which often proved too ethereal, too remote and too complex to truly constitute an icon. At its most elementary level, the MIC was merely the elaborate system created to supply and care for The Bomb.

¹⁰ Worse, the main strategic goal of this new style technological warfare, the doctrine of deterrence, became totally useless the instant the weapons were actually used. Robert Jay Lifton, Indefensible Weapons: The Political and Psychological Case Against Nuclearism (New York: Basic Books, 1982)

¹¹ Barry Commoner, "The Ecological Facts of Life, A Background Paper Prepared for the 13th National Conference of the U.S. National Commission for UNESCO, 1969." Reprinted in The Ecological Conscience: Values for Survival, Robert Disch, ed. (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1970.), 14, 15-16.

¹² Participation in 1970 Earth Day surpassed even the largest antiwar protests, the 1969 National Moratorium. See Chapter 8. John Lukacs, "It's Halfway to 1984," New York Times Magazine (January 2, 1966). Reprinted in; Technology and Social Change, Wilbert E. Moore, ed. (Chicago: Quadrangle Books, 1972), 131-141.

¹³ Grace Slick, "White Rabbit," Jefferson Airplane, Surrealistic Pillow, RCA 9248, 1967. The single rose to the number eight spot in July of 1967, the LP peaked at the number three position in May of the same year.

¹⁴ Christopher Lasch, The True and Only Heaven: Progress and Its Critics (New York: W. W. Norton & Co., 1991). In this seminal work Lasch examines a wide array of examples examining how Americans differ in their attitudes and faith in progress. Progress for individuals, grounded in the faith that technological changes

could continue to indefinitely advance prosperity and further human happiness, what one European critique specifically referred to as "an Americanized vision of scientifically wrought social hope." F. R. Leavis, "The Significance of C. P. Snow," Spectator 9 (March, 1962), 300. Quoted in; Tom Sorrell, Scientism: Philosophy and the Infatuation with Science (London: Routledge, 1991), 100. F. R. Leavis, a Cambridge teacher of Literature, criticized Snow in his 1962 Richmond Lecture, which is reprinted above.

¹⁵ William F. Ogburn, "Can Science Bring Us Happiness?" New York Times Magazine (December 4, 1949). The short answer, at least in 1949, was a definitive "yes". But actual happiness proved far more elusive to define and even harder to produce and manufacture. The creation of an abundant material culture failed to alleviate, if it did not actually exacerbate, the desires of segments of the population for less quantitatively measurable spirituality, contentment, peace, love and happiness.

¹⁶ The early Progressives clearly understood that progress differed from mere change, and intended change to be directed toward a set of goals. "Progress is not synonymous with change, for change may be for better or worse, it means mere quantitative variation and implies no idea of value . . . progress is evolution measured by an assumed standard of human value." A. J. Todd, Theories of Social Progress (New York: Macmillan, 1918), 94.

¹⁷ Whitfield and Strong, "Ball of Confusion," The Temptations, Gordy 7099, 1970. The single reached the number three position in June of 1970. Though Dylan and other "protest" singers garnered accolades for their consciousness raising efforts, few groups put out a string of records containing sophisticated social commentary in the way Temptations did in the last half of the sixties. "Ball of Confusion" joined "Cloud 9," "Psychedelic Shack," and "Runaway Child, Running Wild," all of which led up to their masterpiece "Papa Was a Rolling Stone."

¹⁸ The most insightful of the academic commentators remarked; "What a strange beast it is, this patrician technocracy that makes total war on tradition in the name of development, growth, progress. . . . Industrial haze clouds their historical horizons; they see nothing on the far side of the smoke. The appeal to scientific values, the appeal to the future; these, once the ideological colors of revolution, now pass into the invidious service of the 'new industrial state'." Theodore Roszak, "The Human Whole and Justly Proportioned," the Introduction to; Sources: An Anthology of Contemporary Materials Useful for Preserving Personal Sanity While Braving the Great Technological Wilderness (New York: Harper & Row, Publishers, 1972), xii. William O'Neill, Coming Apart: An Informal History of America in the 1960's (New York: Quadrangle Books, 1969), 47.

¹⁹ One historian who, after his student activist days, attempted to define the split between the Old and New Left, confessed his perception of the older movement: "The only survivors I know of were a few relatives in my parent's generation, wonderful and well-loved people who kept the most recent copy of Political Affairs on a shelf in the bathroom for convenient reading, but who were

getting on and were, besides - I thought a little guiltily - irrelevant." Maurice Isserman, If I Had A Hammer: The Death of the Old Left and the Birth of the New Left (New York: Basic Books, 1987), xi. On the particular contempt of the SDS for the Old Left see: James Miller, Democracy Is in the Streets: From Port Huron to the Siege of Chicago (New York: Simon & Schuster, 1987).

²⁰ Bedtime for Bonzo was a typical presixties presentation of collegiate life. The costar of the film was the future Governor of California and President of the United States, Ronald Reagan. Like all movies with a featured animal, the animal was the true star, in this case, Bonzo the chimpanzee.

²¹ "In the future the struggle between these three orientations - technological, humanistic and reactionary - will inevitably continue." The institutions of the Progressive establishment, attacked by the two different Radical discussions of values, found themselves crippled. Having signed on to a program that proclaimed value neutrality, they found they had little to offer when the debate took up fundamental issues that were value laden. The internecine struggles of the countercultures occurred between those humanists who sought a more utilitarian technology and those who nostalgically sought a more romanticized premodern existence. Kenneth Keniston, "Does Human Nature Change?" New York Times (January 6, 1969). Reprinted in Technology and Social Change, Wilbert E. Moore, ed. (Chicago: Quadrangle Books, 1972), 49-53.

²² Graffiti cited in Michael Davies' In the Future Now: A Report from California (London: Hamish Hamilton, 1972), 225. Also quoted in Imagining Tomorrow: History, Technology, and the American Future, ed. Joseph J. Corn (Cambridge: The MIT Press, 1986). 1. From the introduction written by Joseph Corn. Originally coined by Valery who said: "The main trouble with the world today is that the future is not what it used to be." This view would grow to the point where it was frequently cited in popular literature and music, becoming a popular theme. Declaring the nihilistic world view of the first post-hippie phase of pop music, The Sex Pistols screamed "There's no future!" Tom Petty used the line in the song "Spike:" "Bet he's got a motorbike / Whadda y'all think / Bet if we be good we'll get a ride on it / If he ain't too mad about the future / Maybe we oughta help him see / The future ain't what it used to be." Rhythm Corps titled their 1991 record with the same phrase. "God Save the Queen," Never Mind the Bullocks Here's the Sex Pistols, Sex Pistols, Warner Brothers, W2 3147, 1977. Tom Petty, "Spike," Southern Accents. Tom Petty and the Heartbreakers, MCA Records, MCACD-5486, 1985. Rhythm Corps promotional poster, Epic Records YS46846, from author's collection.

²³ *Streets full of people, all alone / Roads full of houses, never home / Church full of singing out of tune / everyone's gone to the moon.* Jonathan King, "Everyone's Gone To the Moon," Jonathan King, Parrot 9774, 1965. The record topped out at the number seventeen position on the Top 40 survey.

²⁴ The fear generated in the wake of Sputnik was real and creditable. After all, the United States used the weapons as soon as we developed them. Would the Russians - less moral, "Godless" in fact, and more ruthless than the Americans

were (at least according to standard Cold War propaganda and rhetoric) - hesitate to do the same?

²⁵North American Aviation sounded a note along this line in an ad that could be summarized as saying "We could have ... if we had wanted to."

²⁶"Sputnik II," The New Republic 137 (November 11, 1957): 3; "The Nation: A Time of Danger," Time 70 (November 11, 1957): 24; "giant strides" from "And in Four Years?" The New Republic 137 (October 21, 1957): 4. This avalanche of positive public relations was not the result of any Kremlin master plan. Khrushchev failed to understand the importance at first but, as Western reaction grew hysterical, he systematically exploited every aspect of the launch for maximum public relations value. As the new weapons of the Cold War were measurably different from their predecessors, so too the public relations aspects of the Cold War represented a quantum advance over older style propaganda, in content, delivery, and, most crucially, in overall importance. The Cold War balance sheet was calculated, not in battles, but in shifting commitments in what were then termed "nonaligned nations." Thus, the real Cold Warriors did not fight epic battles or design super weapons, they wrote speeches, policy, and press releases.

²⁷"Science: The *Sputnik*," Time 70 (October 14, 1957): 46; "Space (Special Section): The Red Conquest," Newsweek 50 (October 14, 1957): 38-39; "Sputniks and Budgets," The New Republic 137 (October 14, 1957): 3-4.

Several inaccuracies dealt with American efforts, largely because the Russian efforts were shrouded in intense secrecy. The Sputnik project leader was referred to only as "the Chief Designer." His name, Sergei Korolev, would not become public until he died in 1965. One news weekly identified Scott Crossfield as "the first human space traveler" due to his flights on the X-15. "Man in Space," Newsweek (October 21, 1957): 36. Even if the presumption of the "X" program as true "space fights" was valid - and it wasn't - the first such flight was made by Col. Chuck Yeager, U.S.A.F. Tom Wolfe, The Right Stuff (New York: Farrar, Straus & Giroux, 1979).

²⁸"The Nation: Red Moon Over the U.S.," Time 70 (October 14, 1957): 27-28; "Into Space: Man's Awesome Adventure," Newsweek 50 (October 14, 1957): 37-38; "Sputniks and Budgets," The New Republic 137 (October 14, 1957): 3. Quote from John Patrick Diggings, The Proud Decades: America in War and Peace, 1941-1960 (New York: W. W. Norton, 1988), 312.

²⁹"Washington Wire: Crisis of Confidence," The New Republic 137 (November 4, 1957): 2.

³⁰"one iota" *ibid*. To be fair, most responses from the 1957 White House were tepid and Eisenhower was not prone to overstatement. One running Washington joke constantly referred to 1600 Pennsylvania Avenue as "The Tomb of the Well-Known Soldier." "Washington Wire: Disenchantment," The New Republic 137 (November 25, 1957): 2. Commentators failed to note that what made Dwight David Eisenhower "Ike" was his ability to remain, or at least appear, sanguine in the face of overwhelming confusion .

³¹"Stay Cool, Folks," The New Republic 137 (October 28, 1957): 3. The case for panic was well made by a scientist: George Price, "Arguing the Case for Being Panicky: Scientist projects blackmail steps by Which Russia Could Conquer Us," Life 43 (November , 1957): 125-128.

³²"waits in vain" from "Sputniks and Budgets," New Republic; "Into Space: Man's Awesome Adventure," a special section of Newsweek 50 (October 14, 1957): 39.

³³Gerald W. Johnson, "The Superficial Aspect: Eisenhower and Truman," The New Republic 137 (October 28, 1957): 9; "Defense: The Race to Come," Time 70 (October 21, 1957): 21 & 23. Charles E. Wilson, "Engine Charlie," was referred to by The New Republic as "perhaps the ablest industrial manager in the country." Appointed by Eisenhower to "trim the fat" in the defense establishment, he was frequently accused of cutting too much.

³⁴"Pressure in Congress," Newsweek 50 (October 21, 1957): 32; Kurt Stehling, "The Missile 'Experts,'" New Republic 137 (December 23, 1957): 7.

The need for a czar appears slightly more curious. Described by Newsweek as someone who "would have almost unlimited power to merge rival programs, control interservice bickering, and toss economy directives into the Pentagon wastebasket," or in less lofty terms as "someone who could knock heads together," the czar concept seemed undemocratic and, in reality, unworkable. Future crises would provoke a similar reaction in the decades to come when energy czars and drug czars both had their day, though, like the missile czar, never really solved the problems they were created to handle.

³⁵"Design For Space," The New Republic 138 (April 14, 1958): 5. This article details Eisenhower's initial program, The National Aeronautics and Space Act of 1958, which established NASA. The preeminent issue was, like nuclear power, whether the new agency would be under civilian or military control. "Higher and Higher," "Rivalry between the military services (and too much tolerance of it) has caused major delays," "Sputniks and Budgets," The New Republic, 3, 5. The former Air Force Assistant Secretary for Research, Trevor Gardner was quoted supplying the real reason for interservice overlap: "Each service has seen in this missile art the design of the future and so each service has been reaching out with grasping hands." "And in Four Years?" New Republic, 5. "balanced budget" "Stay Cool Folks," New Republic, 8. Missile Czar and Manhattan both recommended by Gardner in: "Sputnik II," New Republic.

According to a Brookings Institution study, the true cost of America's nuclear weapons program has totaled five and half trillion dollars, about 11% of the total federal budget from the Manhattan project through 1990. The nuclear program ranks third in overall spending in the years 1945-1997 after conventional weapons and social programs, as the realities of nuclear war did not prevent the need for high levels of what were now referred to as "conventional" forces. Atomic Audit: The Costs and Consequences of U.S. Nuclear Weapons Since 1940, ed. Stephen I. Schwartz (Washington: Brookings Institution Press, 1998). See also: Richard Ned

Lebow and Janice Gross Stein, We All Lost the Cold War (Princeton: Princeton University Press, 1994).

³⁶ This was even acknowledged by a Russian scientist: "In America, several companies are working on this project. There is friction between them, because they compete with each other. In my country, all the efforts are coordinated under our government. Therefore, we came through before the U.S." A. W. Kasatkin quoted in "The Russians - And the 'Losers,'" Newsweek 50 (October 14, 1957): 39; "Dr. Vannevar Bush Talks," Newsweek 50 (October 21, 1957): 30-1.

³⁷ Bob Dylan, "With God On Our Side," The Times They Are A-Changin', Columbia 8905, 1963. The LP reached the number twenty position in March of 1964.

³⁸ "National emergency" from Karl Shapiro, "Why Out-Russia Russia?" The New Republic 138 (June 9, 1958): 10. "Reexamination" from "The Nation: Summit Meeting," Time 70 (October 28, 1957): 17.

³⁹ "Second best" from "Lecture Two," New Republic 137 (November 25, 1957): 3. "controlled scientists" from "Into Space" Newsweek, 37, 38 and 40. "Red triumph" from "The Sputnik," Time 70 (October 14, 1957): 46.

⁴⁰ "first time ever" from "Can the U.S. Catch Up?" Newsweek 50 (November 11, 1957): 36.

⁴¹ "Man's Awesome Adventure," Newsweek. Senator Jackson quoted in "Defense: The Race to Come," Time 70 (October 21, 1957): 21. Senator Henry Jackson, who represented the state of Washington, consistently supported military spending as it related to aviation and avionics, to the extent that he was often referred to as "The Senator from Boeing." A figure of three years, two "if we really try" were being cited as late as May 1958. "Exploring Space" The New Republic 138 (May 26, 1958): 4.

⁴² "Space and the Atom: Sputnik II: The Surge of Soviet Science," Newsweek 50 (November 11, 1957): 73-4.

⁴³ Others also worried about the prestige aspect. "The shattering detonation was not that of the rocket, but that of American prestige." Gerald W. Johnson, "The Superficial Aspect: What Blew Up?" The New Republic 137 (December 23, 1957): 9. Hans J. Morgenthau, "The Decline of America: I. The Decline of American Power," The New Republic 137 (December 9, 1957): 10-14. Hans J. Morgenthau was Director of the influential Center for the Study of American Foreign Policy at the University of Chicago. Morgenthau viewed the world situation as a simple question of power relationships. As a result, he was often referred to as the "father of power politics" as a school of political science analysis. The other three qualities Morgenthau pointed to as comprising American greatness were freedom in government, opportunity in society, and a high standard of living, none of which seemed significantly shattered by the Sputnik launch.

⁴⁴ Ibid.

⁴⁵ "Space and the Atom - In the Country: The Go-Ahead Feeling," Newsweek 50 (November 18, 1957), 39-40; James R. Killian, Jr., Sputnik, Scientists, and

Eisenhower: A Memoir of the First Special Assistant to the President for Science and Technology (Cambridge: MIT Press, 1977), 3.

⁴⁶ Morgenthau, "Decline of America," New Republic, 13. The inability to trust official statements was a situation that would only grow, eventually leading to the famous "credibility gap" of the sixties. It was a gap opened by Sputnik and further exacerbated by subsequent events, including U2 flights, the Bay of Pigs and the Vietnam War.

⁴⁷ "dimming the bright optimism which had characterized the century, where the sole image the American has of himself was that of a man with clear blue eyes who looked beyond - with curiosity, with hope, and with confidence."

⁴⁸ "Why We're Lagging, Into Space: Man's Awesome Adventure," Newsweek 50 (October 14, 1957): 41.

⁴⁹ "Enterprise: Over the Rainbow," Newsweek 50 (October 25, 1957): 82. "Business: Trains In Pink, Dolls In Mink... In Santa's Bag," Newsweek 50 (November 11, 1957): 106-7. "Retail Trade: Challenge for Parents," Time 70 (December 2, 1957): 81-2. Popular items included rocket kits and chemistry sets. The chemistry set in its 1957 configuration was extremely dangerous, routinely containing chemicals that easily rendered explosive mixtures. Safety standards for children's toys and product liability suits have worked to tone down these toys and sets to today's rather banal levels. One booster of missile and rocket amateurs wisely commented, "If parents knew what was going on in their basements, some of them wouldn't go to bed at all at night." "Space and the Atom: Junior Rocketeers," Newsweek 50 (December 30, 1957): 38.

Eventually Cold War tensions broke down one of the deepest taboos of American children, that of boys playing with dolls. The introduction of G.I. Joe was a phenomenal success. Barbie may have been the most popular of a wide number of dolls aimed at girls, but G.I. Joe, made by the same company, was the only such product for the boys' market. Like Barbie, Joe himself was relatively inexpensive but the accessories - in Joe's case, a literal arsenal of democracy in miniature - were not. At least in this sense toys mirrored the real world of defense spending. And as long as we are on the subject of missiles and Barbie, I would be remiss in not noting that Barbie was designed by Jack Ryan, a Yale electrical engineer whose previous job had been designing Sparrow and Hawk missiles for Raytheon - so Barbie really *is* rocket science. M. G. Lord, Forever Barbie: The Unauthorized Biography of a Real Doll (New York: William Morrow, 1994), 24.

⁵⁰ "T.R.B. 'Look Up,'" and "Disenchantment," The New Republic 137 (November 25, 1957): 2. The most comprehensive history of the educational reaction to the Sputnik crisis can be found in Barbara Clowse's Brainpower for the Cold War, where she states in her introduction that: "The Russian achievement produced in America a peculiar and definite mixture of depression and panic that lasted for months." She attributed the act to public pressure on Washington to "take action to correct the conditions that had allowed the country to suffer this scientific and technological 'defeat.'" Barbara Barksdale Clowse, Brainpower for the Cold War.

The Sputnik Crisis and the National Defense Education Act of 1958 (Westport CT: Greenwood Press, 1981), 6-7.

⁵¹ "What Price Life Adjustment?" Time 70 (December 2, 1957), 53.

⁵² "Education: The Danger of Importance," Time 70 (October 21, 1957): 52-3; "Dollars Over Minds," The New Republic 138 (February 3, 1958), 5.

⁵³ "Ivan and Natasha," The New Republic 138 (February 24, 1958): 5; "Education: Shooting For the Stars," Time 70 (December 16, 1957): 56.

⁵⁴ "American Education And the Sciences," The New Republic 137 (November, 25, 1957): 4-5.

⁵⁵ "Lecture One," The New Republic 137 (November 18, 1957): 3; "National Affairs: Lines of Decision," Time 70 (November 25, 1957): 25.

⁵⁶ "Education: The Danger of Importance," Time 70 (October 21, 1957): 52-3.

⁵⁷ "American Education," New Republic, 4.

⁵⁸ "Opinion: Of Science and Shelters," Time 70 (October 21, 1957): 32-24.

Teller made his remarks about the emerging superiority of Russian science originally in 1956 in Air Force Magazine. "Eggheads" from Gerald W. Johnson's weekly column, "The Superficial Aspect," New Republic 137; "The Ears of Midas," (November 15, 1957), 9. and "What's Worth Respect?" (December 9, 1957), 7.

⁵⁹ Shapiro, Karl "Why Out-Russia Russia?" The New Republic 138 (June 9, 1958), 10-12.

⁶⁰ Ibid.; Burton Rubin, "Retreat Into The Sciences," The New Republic 137 (December 9, 1957); 23. Rubin quotes from the book he was reviewing: Soviet Education, George L. Kline, ed. (New York: Columbia, 1957).

⁶¹ Henry Hazlitt, "Business Tides: Wake Up the Educators," Time 70 (November 25, 1957): 111; "Science: Red Troubles," Time 77 (February, 17, 1961): 53.

⁶² Bob Dylan, "Talkin' World War III Blues," The Freewheelin' Bob Dylan, Columbia 8786, 1963. A masterpiece of the folk revival era in American popular music, the album sold an unprecedented (for a folk record) 200,000 copies its first two months of release and reached the number twenty-two spot on the Top 40 list in September of 1963.

⁶³ The masterpiece of this manner of thought - "thinking the unthinkable" in the parlance of the time - was the chilling work of Herman Kahn for the RAND Corporation. Kahn, the real life model for Dr. Strangelove, assumed that the United States could absorb up to twenty percent casualties and still not be totally decimated, a "tragic but distinguishable postwar states." His calculations on post nuclear exchange recovery rates postulated that one hundred and sixty million dead would require one hundred years in order for the nation to reach "economic recuperation." Twenty million dead would require a mere decade and the country could recuperate in only one year after two million deaths. Kahn stressed that: *"Despite a widespread belief to the contrary, objective studies indicate that even though the amount of human tragedy would be greatly increased in the post war world, the increase would not preclude normal and happy lives for the majority of*

survivors and their descendants." (italics in original) It should be noted that many considered Kahn an optimist, while others considered him a madman. Herman Kahn, On Thermonuclear War (Princeton: Princeton University Press, 1960).

"Gentlemen, you can't fight in here this is the War Room!" Few films ever captured the grim realities and the absurd qualities of nuclear war in the way Stanley Kubrick's 1963 release, Dr. Strangelove or: How I Learned To Stop Worrying And Love The Bomb did. Good movies usually received a review in the New York Times. Important movies might receive two reviews. Kubrick's Dr. Strangelove received three. One critic of sixties film noted: "No other comedy is as serious as this one, no thriller as amusing, and what fairy tale ever seemed so historical?" From auto-destruct mechanisms blowing themselves up to doomsday machines that can't be turned off, Kubrick offered a vision of nuclear madness competing with totally dysfunctional technology. Ethan Mordden, Medium Cool: The Movies of the 1960's (New York: Alfred A. Knopf, 1990), 131.

"The machines and the men and the decisions got out of phase" was the rationale offered up in Fail-Safe for the United States Air Force dropping four twenty-megaton nuclear bombs on New York. Eugene Burdick and Harvey Wheeler, Fail-Safe (New York: Dell Books, 1962). The movie version was released in 1964.

⁶⁴ Such was not ever the case. Launch sequences for nuclear missiles require far more rigor than a single push of a button but far less effort than say, D-Day, or even the flight of the *Enola Gay*. The chance of an "accidental" explosion or war was extremely remote but not necessarily impossible, and was incorporated into popular culture: "One nuclear bomb can ruin your whole day." To date there has not been an accidental triggering of a nuclear weapon, though nuclear warheads have been inadvertently jettisoned from missiles and been lost in the Atlantic Ocean as the result of a B-52 crash. Tad Szulc, The Bombs of Palomares (New York: Viking, 1967); William K. Wyant, Jr., "That Lost Bomb," The New Republic 156 (May 20, 1967): 36-37.

⁶⁵ Their chosen weapon was induced technological revolution, followed hard by government control of research, education, economic fine tuning, and social welfare in all its manifestations. Foreign political and domestic social challenges, it was believed, were equally susceptible to the technological and managerial fix; revolutionary change without revolution, qualitative problems solved with quantitative methods. Under the impact of the Cold War, technocracy came to America. Walter A. McDougall, ... And the Heavens and the Earth: A Political History of the Space Age (New York: Basic Books, 1985), 8. This work remains the finest single volume of the space race. McDougall's research and conclusions have yet to be challenged a decade later, despite a publishing boom in volumes dealing with the history of the space age.

⁶⁶ Jerry Lee Lewis, "Great Balls of Fire," Sun Records 281, 1957. The single reached the number eight position in February of 1958.

⁶⁷ "Black Comedy," Time 77 (March 10, 1961): 100; "Guilt and Anxiety," Time 77 (March 31, 1961): cover.

⁶⁸ "Science: Outward Bound," Time 77 (January, 27, 1961): 46.

⁶⁹ "Toys: Just a Boy," Time 77 (February 3, 1961): 74-76.

⁷⁰ "Idaho: Runaway Reactor," Time 77 (February, 1961): 18-19.

⁷¹ "Science: Secrets of the Universe," Time 77 (May 5, 1961): 44 .

⁷² "Science: Radiation Sense," Time 77 (April 14, 1961): 64.

⁷³ Dickie Thompson, "Thirteen Men," Miss Ann-Margret, The Vivacious One RCA LPM-2251, 1962.

⁷⁴ One historian wrote of what she termed "domestic containment" as one result of bringing the Cold War down to the family level. Elaine Tyler May, Homeward Bound: American Families in the Cold War (New York: Basic Books, 1988).

⁷⁵ "Spires Or Tombs?" America 73 (August 18, 1945): 394. For a longer discussion on the immediate moral reaction to nuclear weapons see: Lester Poehner, Pilot Lights for the Apocalypse: The Initial Christian Response to Nuclear Weapons, Master's Research Essay, Iowa State University of Science and Technology, 1995. The following articles contain a mixture of opinions that are representative of the thinking of the time: "Against the Silent Killer," Time 74 (July 20, 1959): 18-19; "Bomb Shelters Will Not Save Us," Coronet 48 (September, 1960): 62-68; "Day of the H-bomb" Commonweal 70 (September 18, 1959): 509; S. Meisler, "The Charade of Civil Defense," Nation 190 (June, 1960): 507-510; L.A. Hoegh, "Reply to S. Meisler," Nation 191 (August 20, 1960): inside front cover; "Defense Against the Bombs," Commonweal 72 (May 20, 1960): 197; "Honest Curtis LeMay," Nation 190 (April 9, 1960): 306.

⁷⁶ For a few early examples see: "Are Individual Shelters Worth While: Can Group Shelters Save Lives, a Discussion," Progressive Architecture 32 (September, 1951): 64-7; "Bomb Shelters: What Kind and When?" and "Civil Defense Plan Moves Slowly," Architectural Record 109 (February 1951): 12-15; "Exploded: Bomb Shelter Idea," Architectural Forum 94 (October 1951): 9.

⁷⁷ "Science and Shelters," Time, 70. The remarks on shelters were originally published in This Week.

⁷⁸ Kennedy's inaugural speech quoted in opening to "The Cold War: The Creative Task," Time 78 (September 28, 1961): 13. The best single volume on the Cuban Missile Crisis remains Raymond L. Garthoff, Reflections on the Cuban Missile Crisis (Washington D.C.: The Brookings Institution 1987).

⁷⁹ "Duck and Cover," the song Bert the Turtle taught to a generation of schoolchildren as part their civil defense training. The viewers of the civil defense film were taught that "duck and cover" was the correct response "when you see the flash," an exercise fondly remembered for making the children get under their school desks for protection from thermonuclear explosions. The Atomic Cafe, Kevin and Pierce Rafferty and Jayne Loader, producers and directors, Thorn/EMI Video, 1982. The phrase itself originated in: Federal Civil Defense Administration, Survival Under Atomic Attack (Washington, DC: Government Printing Office, 1950), 1. The

announcers break in Bert the Turtle's song cautioned: "Now you and I don't have shells to crawl into like Bert the Turtle, so we have to cover up in our own way. Paul and Patty know this. No matter where they go, or what they do, they always try to remember what to do if the atom bomb explodes right then. It a bomb! Duck and cover! Here's Tony going to his Cub Scout meeting. Tony knows the bomb can explode any time of the year, day or night. Duck and cover! Atta' boy Tony. That flash means act fast." Civil defense movies at the Archive of Factual Film, Special Collections, Parks Library, Iowa State University, Ames. Thanks to Becky Jordan and her staff for their assistance.

⁸⁰ Electromagnetic Pulse Radiation (EMP) following any nuclear blast would effectively incapacitate radio stations. "Civil Defense: Facing Up to Fallout," Time 75 (Feb., 29, 1960): 27. Note the domestic stress in the following articles: "Family Room of Tomorrow," Farm Journal 84 (March, 1960), 132; "Spare Room Fallout Shelter," Life 48 (January 26, 1960): 46-29.

⁸¹ "Importance of Air Raid Shelters," Address of Nelson Rockefeller, reprinted in Vital Speeches of the Day 26 (April 15, 1960): 411-413; "Life and Love in Your Own Shelter," Nation 189 (July 18, 1959): 22; "Old Subject is Reopened: Survival," Life 47 (July 20, 1959): 30; "Right to Die," Time 74 (August 17, 1959): 22; Rockefeller's Civil Defense Program," Bulletin of the Atomic Scientists 16 (April 1960): 134-136; "Rocky's Fight on Fallout," Life 48 (April 11, 1960): 81-82; "Rocky's Folly," Nation 190 (March 5, 1960): 199; "Shelter is a Nice Word," Nation 189 (September 12, 1959): 122.

⁸² "Their Sheltered Honeymoon," Life 47 (August 10, 1959): 51-52.

⁸³ Cover Story, "The Sheltered Life," Time 78 (October 20, 1961): 21-25. One could even import a little glamour into the sheltered life. Time noted a Jacksonville, Florida man who equipped his swinging shelter with a pool table and a keg of wine. Lest this seem an aberration, in the 1970's following the broadcast of a melodramatic made-for-TV movie, The Day After, the countercultural head of Herbal Essence Teas refurbished an Arkansas cave to serve as a the post-apocalypse Playboy pad with all the comforts of said lifestyle. The cave recently sold for \$3.5 million.

⁸⁴ *Ibid.*, 21.

⁸⁵ *Ibid.*, 22.

⁸⁶ *Ibid.*, 23.

⁸⁷ "Modern Times: Built-in Bomb Shelters," Time 77 (March 24, 1961): 19.

⁸⁸ "Next Civil Defense Drill," Nation 190 (May 14, 1960): X; "For New Yorkers: Compulsory Shelters," Newsweek 54 (July 20, 1959): 24. The drill also received international attention because famed French modern architect Le Corbusier arrived at Columbia in the midst of an air raid drill, witnessing student protesters carrying signs which read, "Shelters are no substitute for peace!" Le Corbusier agreed with the students outlook in his speech. Cover story, Time 77 (May 5, 1961): 60.

⁸⁹ "The People: Ready To Act," Time 78 (September 29, 1961): 13-15. Chicago Psychiatrist Milton A. Dushkin was given credit for identifying and naming the new

ailment. The use of the suffix "phobia" implied that such fears were irrational, when the reverse was probably truer.

⁹⁰ Bob Dylan, "A Hard Rain's A-Gonna Fall," Freewheelin'.

⁹¹ "Religion: Gun Thy Neighbor?" Time 78 (August 18, 1961): 58. McHugh taught ethics at Georgetown University and contributed a regular science column to the publication.

⁹² L. C. McHugh, S. J., "Ethics at the Shelter Doorway," America 105 (September 30, 1961): 824-826. The federal government had little of this queasiness about who to gun down at the shelter door. Standing orders specified that no unauthorized persons could enter any federal shelter and armed guards were posted to make sure none did. Longtime Washington presidential reporter Hugh Sidey recalled being told by a member of the Kennedy Administration that he (Sidey) was on a list to be admitted to one such shelter, but Sidey's wife and children were not on the list - a chilling anecdote detailing the surreal grotesque choices posed by atomic realities that reversed the traditional beliefs and values which called for sacrifice on the part of the parent for the child. "Women and children first" was now obsolete. Hugh Sidey, lecture at Iowa State University, November 9, 1995. Author's notes.

⁹³ McHugh, "Ethics," America, 824: "Gun Thy Neighbor," Time, 78.

⁹⁴ "Gun Thy Neighbor," "Organizations: The Minutemen," Time 78 (November 3, 1961): 19. The link between the atomic holocaust and fervent anticommunism would spur the creation of these renegade groups. Unchecked, they grew into the domestic terrorist movements of the eighties and nineties. An odd, but sure, outcome of the shelter survival debate.

⁹⁵ L. C. McHugh, S. J., "More on the Shelter Question," America 106 (November 25, 1961): 267.

⁹⁶ Ibid. The popular TV series The Twilight Zone covered the issues involved in nuclear war several times in the first few seasons. Episode eight of the first season is the well remembered classic, "Time Enough At Last" where a bank teller is the only survivor of an atomic bomb. Feeling liberated from work and given eternity to read without being bothered, the final scene shows the tellers glasses broken on the steps of the library. Episode fourteen, "Third From the Sun" dealt with survivors leaving a war ravaged Earth. Episode sixty-six in season three started with "Two," a post-holocaust Adam and Eve scenario. Possibly the closest to the point being made here was episode sixty-eight, "The Shelter" which aired on September 29, 1961. The show demonstrated the slow drift into anarchy, neighbors shooting neighbors and "ethics at the hatch" caused a false alarm. Creator and narrator Rod Serling ended the show by saying "No moral, no message, no prophetic tract, just a simple statement of fact: for civilization to survive, the human race must remain civilized. Tonight's very small exercise in logic from the Twilight Zone." From the Twilight Zone web site, run by Rutgers and St. Louis University. Also quoted in Margot A. Henriksen, Dr. Strangelove's America: Society and Culture in the Atomic Age (Berkeley: U of California Press, 1997), 213-214.

⁹⁷ "Shelter Owners Pro-War," Science News 83 (April 20, 1963): 246; "Civil Defense: Louisiana Haymaker," Time 77 (April 14, 1961): 30.

⁹⁸ M. Mayer, "Digging a Hole Is Not Enough: Mr. Babcock's Folly," Better Homes & Gardens 40 (January, 1962): 6-7; "Fallout Shelters: The Great Controversy," Good Housekeeping 154 (February, 1962): 34; W. Goodman, "Truth About Fallout Shelters," Redbook 118 (January, 1962): 40-43. Other articles documenting the decline of shelters in the period following include: F. X. Lynch, "Adequate Shelters and Quick Reaction to Warning: A Key to Civil Defense," Science 142 (November 8, 1963): 665-667; "Chain Reaction," Newsweek 61 (June 8, 1963): 34; J. Wash, "Civil Defense: Housing Reverses Direction and Approves Fallout Shelter Program," Science 141 (September 27, 1963): 1264-1265; E. Langer, "Civil Defense: Make Haste Slowly Is Watchword of Current Strategy on Fallout Shelter Program," Science 141 (July 26, 1963): 340-341; S. Chapman, "Do We Want Fallout Shelters?" Bulletin of the Atomic Scientists 19 (February 1963): 24-26; "Favored Few: Civil Defense Center, Pomona, California," Newsweek 63 (March 9, 1964): 58; "More Shelters?" Newsweek 62 (July 22, 1963): 66; "Sheltered Life; No Market for Shelters," Newsweek 64 (July 27, 1964): 75. "Revival of Survival: Federal Fallout - Shelter Programs," Time 82 (September 27, 1963): 21; M. E. Rozen, "Some Reflections on Civil Defense," Bulletin of the Atomic Scientists 20 (June 1964): 21-24; D. Oberdofer, "Survival of the Fewest," with editorial comments, Saturday Evening Post 236 (March 23, 1963): 17-21.

⁹⁹ "Nuclear Medicine: Radioactive Diagnosis and the Cow," Time 89 (January 6, 1967): 44.

¹⁰⁰ Lu Waters, "Blues Over Bodega," Fantasy Records 5016, 1963.

¹⁰¹ That dichotomy is illustrated by the degree to which people routinely referred to the time as "the atomic age." "Too cheap to meter" was one of the more enthusiastic promises, as it turned out to be "too expensive to use," at least without massive government subsidies, particularly in the area of insurance. "Too expensive," Ralph Nader, speech at Iowa State University, February 6, 1995. Author's notes.

¹⁰² One of the leading figures in the fight eventually wrote a book that viewed the Bodega debate largely as a battle about expertise. The volume contained a wealth of background information, particularly in the introduction. Joel Hedgpeth, Bodega: A Case History of the Failure of the Experts, (self published by the author in Newport, Oregon, 1971). A copy can be found at Sonoma County Public Library/Petaluma Branch Historical Room, Bodega Bay Atomic Park file, hereafter SCPL/PBHR, BBAP.

¹⁰³ Ibid. See also: K. S. Roe, "Bodega: Symbol of a National Crisis," American Fortune 69 (December, 1963), 22-25; P. M. Tilden, "California Atom Controversy: Bodega Head, Sonoma County," Natural History 72 (December 1963)64-65.

¹⁰⁴ "Tidal Wave of Opposition Washes Bodega Bay Plan," and "On the Beach," Santa Rosa Press Democrat (January 20, 1960): 1. The Sonoma County Board of Supervisors would receive a large amount of public criticism, including a court case

about their failures to follow open meeting laws and, in the case of Guidotti, a recall election was held to remove him from office. Much of this was probably undeserved. In either case, whether the land went to the State for a park or to PG&E for a power plant, the supervisors had little actual power. Both entities enjoyed the power of eminent domain. Though a park might have proved more popular - PG&E would attempt to split the difference and call the plant an "atomic park" - the inclusion within the Master Plan did not speed up the rather glacial pace of the Parks board in acquiring the land. PG&E was the sure bet. "State Parks Chiefs Surrendered to PG&E," Santa Rosa Press Democrat (January 15, 1960): 1. For full plans of "The Atomic Park" see: "Bodega A-Site Park Plans Told by PG&E," Santa Rosa Press Democrat (June, 24, 1964).

¹⁰⁵ Letter to Petaluma Argus Courier, dated January 10, 1958, describes in detail Gaffney's argument. "One angry gal" from letter from Rose Gaffney to Ed Mannion dated January 10, 1958. Ed Mannion Papers file, SCPL/PBHR, BBAP.

¹⁰⁶ Additional background information provided by "Bodega Head, PG&E and Rose Gaffney, Bugle (December - January, 1970-1971); "The Battle of Bodega Head," Bodega Bay Navigator (September 24, 1987); Gaye Le Baron, "Insight," Santa Rosa Press Democrat, Date Unknown. All articles Sonoma County Public Library/Santa Rosa Historical and Genealogical Annex, hereafter SCPL/SRH&GA, BBAP.

¹⁰⁷ A complete chronology of permits and certificates, as well as an entire background of the area can be found in The Dissenting Opinion of the president of the California Public Utilities Commission in the order denying reopening of hearings on the application for a certificate of public convenience and necessity for the Bodega Bay Atomic Park, Decision no. 65701. Reprinted by the Sierra Club, July 26, 1963. SCPL/SRH&GA, BBAP.

¹⁰⁸ Ibid.

¹⁰⁹ Harold Gilliam, "Atom vs. Nature at Bodega," San Francisco Sunday Chronicle, *This World* section, (February 11, 1962): 21. SCPL/PBHR, BBAP. "PG&E A-Power Plant Gets State Approval," Santa Rosa Press Democrat (November 11, 1962): 1.

¹¹⁰ "Bodega A-Plant Case Re-opened," Santa Rosa Press Democrat (April 25, 1962): 1.

¹¹¹ Don Engdahl, "Bodega Head Nuclear Reactor Safety Factors Questioned," Santa Rosa Press Democrat (November 12, 1962): 1.

¹¹² "New Block Aimed At PG&E Plant," Santa Rosa Press Democrat (November 28, 1962): 1.

¹¹³ "Another Petition On A-Plant," Santa Rosa Press Democrat (November 29, 1962): 1.

¹¹⁴ What Is Happening At Bodega Bay? Broadside for a public meeting held on November 10, 1962. Event cosponsored by NCAPBH&H. SCPL/SRH&GA, BBAP.

¹¹⁵ Waters, "Blues Over Bodega." For a review of the record and its role in the fight for Bodega see; Ralph J. Gleason, "The Lively Arts: Powerful Waters For The

Bay," San Francisco Chronicle, Date Unknown. Clipping in SCPL/PBHR, BBAP. The file also contains a justifiably anonymous song entitled "The Ballad of Bodega Head," Sebastapool Times, Date Unknown. "Balloons and Jazz Float Across Head," Santa Rosa Press Democrat (May 31, 1963): 1-2.

¹¹⁶ Ibid. Estimates of crowd size varied according to the source. NCAPBH&H reported attendance at 300, while the Press Democrat hedged a bit and placed the figure at "250 to 300". PG&E officials "reported they counted 90 to 95 persons."

¹¹⁷ "Atoms vs. Beauty At Bodega Bay," San Francisco Examiner (August 26, 1963). SCPL/SRH&GA, BBAP.

¹¹⁸ Earthquakes, The Atom and Bodega Head, written and published by NCAPBH&H, 1965. SCPL, Santa Rosa Branch, closed stacks. "Newsmen Visit Bodega Head Hole," "PG&E Paid Consultants Back Bodega 'Glory Hole,'" and "...And Anti-Atomic Group Fires Its Guns," Petaluma Argus-Courier (October 8, 1963):1. SCPL/PBHR. BBAP.

¹¹⁹ "Bodega Site Flawed Says Expert," Santa Rosa Press Democrat (August 29, 1963): 1.

¹²⁰ "Quake Crack in Bodega Reactor Pit," San Francisco Chronicle (January 21, 1964). NCAPBH&H Newsletter dated September 10, 1964, contains a notice of the event. "After Bodega — A Celebration," San Francisco Chronicle (November 22, 1964). SCPL/SRH&GA, BBAP.

¹²¹ "PG&E Withdraws Bodega Head Atom Plant Application," Petaluma Argus-Courier (October 30, 1964); "Bodega Atomic Plant Plan Withdrawn," and "Typical Press Comments on Bodega Decision," PG&E Progress (December 1964); SCPL/PBHR, BBAP. Without fail, the reprinted editorials from the Chronicle, S.F. News Call Bulletin, San Jose Mercury and Sacramento Bee all praise the decision using words like "wise," "commendable," "an A-plus for community responsibility."

¹²² Remarks by David Pesonen before the Executive Meeting of the California State Central Democratic Committee. Heading: "NEW BUSINESS —Bodega Bay." (December 8, 1962): 5. SCPL/SRH&GA, BBAP.

¹²³ "Difficulty" from Bodega Bay: The People vs. the Experts, a transcript of a radio program produced by Joan McIntyre for Pacifica Radio Station, KPFA (FM) Berkeley, California. First aired on "Eleventh Hour" November 16, 1962. Transcript of show in SCPL/SRH&GA, BBAP.

¹²⁴ Weinberger would go on to serve under Governor Ronald Reagan in Sacramento and as president of the Bechtel Group, the world's largest builder of nuclear power plants, and was later appointed Secretary of Defense by President Ronald Reagan. Clausen quoted in "PG&E Withdraws Bodega Head Atom Plant Application," Petaluma Argus-Courier October 30, 1964). SCPL/PBHR, BBAP. Weinberger quoted San Francisco Chronicle, August 8, 1963, 4.

¹²⁵ William Kortum, D.V.M., "Plea For More Public Debates," Santa Rosa Press Democrat (February 9, 1964). "Letters to the Editor." Pesonen, A Visit to the Atomic Park.

¹²⁶ Warren E. Olson, Statement to the Sonoma County Board of Supervisors, December 11, 1962. Olson was identified as a professor of philosophy at Sonoma State College. SCPL/SRH&GA, BBAP.

¹²⁷ David Pesonen, "The Atom's Lengthening Shadow," The Liberal Democrat (September, 1963): 3. SCPL/SRH&GA, BBAP.

¹²⁸ "Editorial: A-Plant Bugaboo," Santa Rosa Press Democrat (November 25, 1962): 4A.

¹²⁹ David Pesonen, Remarks before the Executive Meeting of the California State Central Democratic Committee, Santa Rosa, December 8, 1962, 1. SCPL /SRH&GA, BBAP.

¹³⁰ Pesonen before Democratic Executive Committee, 3.

¹³¹ Pesonen, "Atom's Shadow," 3-5.

¹³² David Pesonen, Letter to members of the NCAPBH&H urging support of the Berkeley Free Speech Movement, December 14, 1964. SCPL/SRH&GA, BBAP.

¹³³ See footnote 79 for information on "duck and cover." For an excellent overview of Civil Defense efforts see: Guy Oakes, The Imaginary War: Civil Defense and American Cold War Culture (New York: Oxford University Press, 1994). See also: Spencer R. Weart, "History of American Attitudes to Civil Defense," Civil Defense: A Choice of Disasters, ed. John Dowling and Evans M. Harrell, (New York: American Institute of Physics, 1987), 11-32. See also the chapter "Duck and Cover" where the long reach of "The Bomb" on the sixties generation is detailed. David Lance Goines, The Free Speech Movement: Coming of Age in the 1960s (Berkeley: Ten Speed Press, 1993), 19-26.

¹³⁴ "This sense of importance of the present moment may be laid to the bomb, of course, and that explanation is attractively obvious. I think it is too simple, though the necessity of the past generation to come to terms with the bomb may well have a good bit to do with it." Delbert L. Earisman, Hippies in Our Midst: The Rebellion Beyond Rebellion (Philadelphia: Fortress Press, 1968), 141.

¹³⁵ "There is, however a sense in which the Sixties began much earlier; on August 6, 1945, the day the first atomic bomb was dropped on Hiroshima. And in that sense, they have not ended yet. For the political, cultural, and spiritual revolution that erupted in the Sixties can be seen as a response to the challenge of the Atomic Age." Annie Gottlieb, "Do You Believe in Magic?": Bringing the 60's Back Home (New York: Simon & Schuster, Inc., 1987), 18-19.

¹³⁶ The other nightmares mentioned were Auschwitz, the Cold War, and United States Senator Joseph McCarthy. Michael V. Miller, "Student State of Mind," in Revolution At Berkeley, ed. Michael V. Miller and Susan Gilmore (New York: Dial Press, 1965), 60. Toby Thompson, The '60s Report (New York: Rawson, Wade, 1979), xii. Similar feeling were expressed by an historian of the sixties, who wrote: "We were the first generation to be born into the world with the Bomb, and our early intimacy with the reality of Armageddon gave us a unique adolescence." Charles Kaiser, 1968 In America: Music, Politics, Chaos, Counterculture and the Shaping of a Generation (New York: Weidenfield & Nicolson, 1988), xvii.

CONELRAD were the two national civil defense broadcast frequencies, 640 and 1040 on the AM dial. They are typically the strongest two stations in every market to this day, i.e., WOI and WHO in central Iowa.

¹³⁷ Civil defense films at the American Archive of Factual Film in the Special Collections Department of the Parks Library, Iowa State University, Ames, Iowa. The archive was extensively used during the production of Atomic Cafe.

¹³⁸ Louis W. Cartwright, "The New Hero," in To Make A Difference: A Student Look at America, Its Values, Its Society, and Its System of Education, ed. Otto Butz (New York: Harper & Row, 1967).

¹³⁹ Bob Dylan, "Masters of War," Freewheelin'

¹⁴⁰ Goines, Free Speech, 21. Another writer expressed it this way. "VE Night took place in one word and JV Night in another. . . . The first was a victory confirming our merits and security. The second victory destroyed them irrevocably. . . . The people who had not yet reached puberty at the time of the bomb were incapable of conceiving of life with a future. . . . They never knew a sense of future." Jeff Nuttall, Bomb Culture (London: MacGibbon & Kee, 1968), 20, 21, 22.

¹⁴¹ Todd Gitlin, The Sixties: Years of Hope, Days of Rage (New York: Bantam Books, 1987), 21-25.

¹⁴² Malcolm X's classic rewrite of "the ends justify the means" was delivered at an Oxford Union Society debate, December 3, 1964.

¹⁴³ If not all students believed this, then certainly more did than in any previous generation.

¹⁴⁴ Bob Dylan, "My Back Pages" Another Side of Bob Dylan, Columbia CS 08993, 1964.

¹⁴⁵ Several commentators noted Berkeley's unique qualities, speculating that the Free Speech Movement was an extraordinary event, one that could not be duplicated in other college settings. To the degree that central dissatisfaction with the industrial reality would never be so clearly articulated and debated, they were correct. To the extent these writers were predicting quiet campuses elsewhere, they could not have been more wrong.

¹⁴⁶ Berkeley had seen its share of protests prior to the advent of the Free Speech Movement. Its students were instrumental in the House Un-American Activities Committee protests of 1960. By 1963, hundreds of students were attending CORE-sponsored civil rights protests and, during the Christmas week, several students participated in "shop-ins" in Berkeley supermarkets where, in order to protest the lack of minority employees, students would load up shopping carts with groceries and leave them at the check-out aisle. Many Berkeley students were among the 767 people arrested at the Palace Hotel protests in San Francisco in March of 1964. As for the effect of the HUAC demonstration itself, Goodman remarks: "For the students, the upsurge in San Francisco proclaimed the end of a decade of cold-war hibernation; college campuses were becoming centers of national discontent over larger issues than the Un-American Activities Committee." An overview of the history of protest on the UC campus is well presented in: Milton

Viorst, Fire in the Streets: America in the 1960s (New York: Simon & Schuster, 1979), 275-306; Walter Goodman, The Committee: The Extraordinary Career of the House Committee on Un-American Activities (New York: Farrar, Straus & Giroux, 1968), 429-430, 433.

¹⁴⁷ Collier and Horowitz describe Berkeley in the early sixties in glowing terms, a "paradise lost." Other left-leaning student radicals and Kerr himself fell into similar pastoral nostalgia in their descriptions of the pre-FSM university. Peter Collier and David Horowitz, Destructive Generation: Second Thoughts About the Sixties (New York: Summit Books, 1989), 254. See also Goines, Free Speech, 33-35 and 62; Clark Kerr, The Uses of the University (Cambridge: Harvard University Press, 1963), 49.

¹⁴⁸ The students at Berkeley were blessed with Clark Kerr, an administrator whose views were clearly stated and widely disseminated. Kerr himself had risen to the position of President after heading the Institute of Industrial Relations, which Governor Earl Warren established at the Berkeley campus shortly after the war. Prior to that, Kerr had served in Washington as vice-chairman of the War Labor Board during the Second World War. Speaking before the Harvard School of Public Administration in their 1963 Godkin Lecture series, Kerr spoke to the history of higher education, its present condition, particularly as it concerned public land-grant universities, and the future possibilities for higher education. Published by Harvard in 1963 under the title The Uses of the University, and widely reprinted in various permutations and in several anthologies, including: Revolution At Berkeley; The Berkeley Student Revolt: Facts and Interpretations, ed. Seymour Martin Lipset and Sheldon Wolin, (New York: Anchor Books, 1965); Beyond Berkeley: A Sourcebook on Student Values, ed. Christopher G. Katope and Paul G. Zolbrod (New York: Harper & Row, 1966). For a similar take in a different locale, the University of Illinois at Champaign/Urbana, see: Nicholas Von Hoffman, The Multiversity: A Personal Report on What Happens to Today's Students at American Universities (New York: Holt, Rinehart & Winston, 1966). The long range view on the importance of the Berkeley revolt can be found in: Wolin and Schaar, "Berkeley and the University Revolution," New York Review of Books (February 9, 1967): 18-24.

¹⁴⁹ Larry D. Spence, "Berkeley: What It Demonstrates," Studies on the Left (Winter 1965), reprinted in: Revolution At Berkeley, 219. Robert M. Hutchins was a well regarded academic critic. He served as President and Chancellor of the University of Chicago from 1929 to 1951. In the 1960's he headed the Center for the Study of Democratic Institutions.

¹⁵⁰ ". . . steady encroachments by the spirit of hucksterdom, the blight of weaponry, the disease of tainted research. There is a steady surrender to educational gimmickry which short-changes the students and educational big-enterprise which seduces the professors. . . . Much more menacing, as it seems to me, is the professor-entrepreneur busy with a mess of grants, textbooks, institutes, conferences, consultations, indeed, with everything but serious teaching

and intellectual work." Irving Howe, "Introduction: Berkeley and Beyond," Revolution At Berkeley, xii-xiii, xiv.

¹⁵¹ Kerr, Uses, 86-88.

¹⁵² Ibid. A discussion of the widespread nature of these changes can be found in: Harold Taylor, "The Academic Industry," Commentary 38 (December, 1964): 68-73. For a history of the Students for a Democratic Society see: Jack Newfield, A Prophetic Minority (New York: NAL, 1966).

¹⁵³ Kerr, Uses, 88. See also: Don Pitcher and Malcolm Margolin, Berkeley Inside/Out (Berkeley: Heyday Books, 1989), 69.

¹⁵⁴ Kerr, Uses, 49-9.

¹⁵⁵ Ibid., 37-38. "The complete bureaucrat does not approve of moral indignation or the political protest and struggle, not because he is cruel and unfeeling, but simply because these phenomena do not file neatly: they upset routine; they raise nonregulation questions; they cannot be budgeted for in advance; they are refractory to manipulation." Hal Draper, The Mind of Clark Kerr (Independent Socialist Club, October 4, 1964). Reprinted in Revolution At Berkeley, 77. The Free Speech Movement were not the first students at Berkeley to think of the university as factory or a machine, see: David Horowitz, Student, (New York: Ballantine Books, 1962).

¹⁵⁶ Kerr, Uses, 56.

¹⁵⁷ Ibid., 40. In attempting to plan the future, Kerr would have been wise to follow the decree of one of the first great planners, Daniel Burnham, who allegedly stated, "make no little plans, they have no magic to stir men's blood," and these were indeed little plans, failing to power the imagination of a generation who expected a bolder statement, or at least a more exciting execution of Kerr's rather bland values. Daniel Burnham, attributed, see: Henry M. Saylor, "Make Not Little Plans": Daniel Burnham Though Did He Say It?" Journal of the American Institute of Architects 28 (1957): 3.

¹⁵⁸ Kerr et al., Industrialism and Industrial Man (Cambridge: Harvard University Press, 1960), 282-284. The 1964 Oxford paperback revision was considerably toned down in an effort to attract a wider audience, or to offend fewer people.

¹⁵⁹ Kerr, Uses, 6. Quote from Jim Morrison, "The Soft Parade," The Soft Parade, The Doors, Elektra, 1969. CD re-release, Elektra 75005-2.

¹⁶⁰ Ibid. 26 & 124.

¹⁶¹ Sol Stern, "A Deeper Disenchantment," Liberation (February 1965). Reprinted in Revolution in Berkeley, 227 & 235.

¹⁶² Kerr, Uses, 29.

¹⁶³ Dylan, "Subterranean."

¹⁶⁴ Sheldon Wolin and John Schaar, The Berkeley Student Revolt: Facts and Interpretations, (Garden City, NJ: Doubleday-Anchor, 1965), xvii.

¹⁶⁵ "The Position of the Free Speech Movement on Speech and Political Activity," California Monthly (February 1965), in The Berkeley Student Revolt, 202.

¹⁶⁶ This explanation should not be taken as an Alpha-Omega explanation of the unrest. "Nearly everyone who has tried to account for the recent uprising on the Berkeley campus has drawn a picture of students struggling for identity in a vast, impersonal education and research factory run by IBM cards, remote professors subsidized by federal funds, and administrators with the temperaments of corporation executives." The writer disagreed, "however plausible it may be, the multiversity analysis portrays the landscape of the Berkeley rebellion without sufficient color or contour." Sol Stern, "A Deeper Disenchantment," Liberation, (February 1965). Miller, "Student State of Mind," Revolution At Berkeley, 227 & 235. See: Terry H. Anderson, The Movement and the Sixties: Protest in America From Greensboro to Wounded Knee (New York: Oxford University Press, 1995), 95-97.

¹⁶⁷ Kerr, Uses, 86-87.

¹⁶⁸ Ibid., 37-38.

¹⁶⁹ The Radical Left: The Abuse of Discontent, ed. William P. Gerberding and Duane E. Smith (Boston: Houghton Mifflin Company, 1970).

¹⁷⁰ The non-violent tactic of simply sitting down and refusing to move garnered some success in the Civil Rights movement, where it was used primarily to desegregate public facilities, most memorably lunch counters. Auto workers in Flint, Michigan successfully used the tactic in a 1938 strike against General Motors. Paul Goodman, "Thoughts on Berkeley," New York Review of Books (January 14, 1965). The best overview of the events at Berkeley is Goines, Free Speech.

¹⁷¹ Mario Savio, Sproul Hall, September 30, 1964. Savio's speeches are quoted verbatim in Goines, Free Speech, 151-153. Goines created transcripts from the field recording tapes at KPFA and also consulted film shot during the disturbance.

This does not imply that the Free Speech Movement was uncorrupted by cynical drifters and those just lost in the twentieth century: "Another segment of the student body constitutes, more or less, a community of self-pity. It is made up mostly of older undergrads and a few beginning graduate students who have sulked through their years at Berkeley in a pose of militant sensitivity. ... Perhaps such students are a little too quick to blame their stifled creativity on the system, or their inability to find the structure of modern society. Their politics border on melodrama. They are the specialists in alienation." Sol Stern, "A Deeper Disenchantment," in Revolution in Berkeley, 53-54.

¹⁷² Kerr's vision of the "Ideapolis" originated the third section of Uses, "Future City of the Intellect," 91-94. Savio quoted from Goines, Free Speech, 152.

¹⁷³ Mario Savio, December 24, 1964. Transcribed by Goines, Free Speech, 361.

¹⁷⁴ Ibid. Not that everyone felt the Free Speech Movement accomplished all that much. For one negative viewing of its effects see: Christopher Lasch, The Agony of the American Left (New York: Alfred A. Knopf, 1969), 184-187.

¹⁷⁵ Roger Rapoport, "In Defense of the Multiversity," The Atlantic 219 (June, 1967): 73-74. Rapoport was editor in chief of the Ann Arbor Michigan Daily in 1967.

¹⁷⁶ Paul Goodman, "Berkeley in February," Dissent 12 (Spring, 1965).

¹⁷⁷ Collier and Horowitz, Destructive Generation, 253. Sol Stern, "A Deeper Disenchantment," Revolution in Berkeley, 226.

¹⁷⁸ Bedtime For Bonzo, Warner Brothers, 1951. Sequel Bonzo Goes to College, Warner Brothers, 1952. Both films starred Ronald Reagan, who was elected Governor of California in 1966 and 1970, and President of the United States in 1980 and 1988. The Absent Minded Professor, Buena Vista, 1961. Starring Fred McMurry, it was one of the top grossing films of the year

¹⁷⁹ John A. Hansen, Asterisk, 2 (date unknown, 1967). Quoted in Ethel Grodzins Romm, The Open Conspiracy: What America's Angry Generation Saying (Harrisburg, PA: Stackpole, 1970), 38.

¹⁸⁰ Mario Savio, "An End to History," Humanity (December, 1964). Reprinted in Associated Press, The World in 1964: History as We Lived It (New York: 1965), 30-35.

¹⁸¹ Original Cast of Hair, RCA 1150, 1968. The LP was a number one record for three weeks, spending a total of 59 weeks in Top 40. The Fifth Dimension, "Aquarius / Let the Sunshine In," Soul City 772, 1969. The single was the nation's number one record for six weeks in early 1969 and spent a total of 16 weeks in Top 40 earning the Fifth Dimension a RIAA Certified Gold Record. On the ill fated Apollo XIII mission the lunar lander (LEM) was named *Aquarius*. And "Aquarius," was "one of the first songs the astronauts had requested when they made up their playlist." Jim Lovell & Jeffrey Kluger, Lost Moon: The Perilous Voyage of Apollo 13 (Boston: Houghton Mifflin Company, 1994), 262.

¹⁸² "Although at first political New Leftists tended to distance themselves from the hip counterculturalists, by the end of the sixties these countercultural values were increasingly articulated within the heart of the New Left political movements, and the popular perception that these two tendencies represented one unified phenomenon increasingly approximated the reality." Michael Lerner, "The Legacy of the Sixties for the Politics of the Nineties," Tikkun 3 (Spring 1990): 89. Lerner was a member of the executive committee of the Free Speech Movement and chairman of the Berkeley Students for a Democratic Society.

¹⁸³ "Youth: The Hippies," Time 90 (July 7, 1967): 18. In fact Grey Line Tours in San Francisco offered a "Hippie Hop" sightseeing tour billed as "the only tour of a foreign country within the United States." Similar tours brought sightseers to the East Village. As a protest, a group of East Village residents chartered a bus and toured bowling alleys and supermarkets in Queens. Their goal was to "terrorize the straights by perpetrating inconceivable weirdness upon them." They undoubtedly succeeded. "60 Hippies in a Bus See the Sights of Quaint Queens," New York Times (September 23, 1968): 24.

¹⁸⁴ Despite many obituaries - and even a formal funeral - for the hippies, there are probably more hip counterculturalists in America today (1999) than at the height of either 1967's Summer of Love or 1969's Woodstock Nation. "The great contradiction of the 1960s was exactly how much we pulled off - how far we got with

how few and how little knowledge." Abbie Hoffman, "The Young Have To Be There," The Best of Abbie Hoffman (New York: Four Walls Eight Windows, 1989), 1986. Article originally published in Social Policy, 1986.

¹⁸⁵Theodore Roszak, Making of a Counter Culture: Reflections on the Technocratic Society and its Youthful Opposition (Garden City, N.Y.: Doubleday and Company, Inc., 1969), xi.

¹⁸⁶David Steigerwald, The Sixties and the End of Modern America (New York: St. Martin's Press, 1995), iv.

¹⁸⁷At the point when the mainstream media picked up on the trend and began broadcasting it, both movements changed. Hippies made great copy and provided even better film stock and still pictures. Wacky fun and zany pranks combined with surreal dress and grooming, underlying a general atmosphere of sexual liberation, made the hippies "a gold mine of fun to reporters." In a mass media age, they quickly became the darlings of the mass media and, of course, even more rapidly were overexposed and discarded by the media. Jan and Michael Stern, Sixties People (New York: Alfred A. Knopf, 1990), 161-163.

¹⁸⁸Michael V. Miller, "The Student State of Mind," Dissent (Spring, 1965). Reprinted in Revolution At Berkeley, ed. Michael V. Miller and Susan Gilmore, (New York: Dial Press, 1965), 56. First printing, September, 1965. Second printing, November, 1965.

¹⁸⁹Stokely Carmichael's ill-conceived retort indicating his belief that the only appropriate position for women in the Civil Rights Movement was "prone," was echoed by many of his fellow white revolutionaries, if not always in colorful public statements then certainly in their private lives. Not to be outdone in this aspect the hip counterculture created a totally different but equally constricting image. One tome on countercultural communes noted as a caption to a picture of several women sewing: "Lorien's girls find a certain relevance in sewing, cooking and light labor," though several of the pictures also depict the same girls finding relevance in showering naked. Men, of course, were plowing the earth. More to the point might be Stern's remark: "Chicks, mystical chicks: being witchy and spiritual was the main contribution women were supposed to make to commune life. That and dinner." Carmichael quote in, "Know Your Enemy: A Sampling of Sexist Quotes," Sisterhood Is Powerful: An Anthology of Writings From the Women's Liberation Movement, ed. Robin Morgan, (New York: Vintage Books, 1970), 35. William Hedgepeth and Dennis Stock, The Alternative: Communal Life in New America (New York: Macmillan, 1970), text 52, nude photo 34; Stern, Sixties People, 156; Jimi Hendrix, "Are You Experienced?", Are You Experienced?, The Jimi Hendrix Experience, Reprise 6261, 1967. The LP reached the number five spot in September of 1967, spending a total of seventy-seven weeks in the Top 40.

¹⁹⁰"There are no leaders. We're trying to move away, more or less, from leadership." A young communal follower quoted in: Lew Yablonsky, The Hippie Trip (New York: Pegasus, 1968), 125. The National Conference for New Politics, held in Chicago's Palmer House over Labor Day Weekend, 1967, attempted to bring

various leftist groups together in order to form a common agenda with an eye toward the formation of a third party. They could not even agree on lunch. One historian of the New Left concluded the convention, "convinced some New Left onlookers that the future of radical politics was bleak and the National Conference for New Politics was one more example that the movement was degenerating." Edward J. Bacciocco, Jr., The New Left In America: Reform to Revolution (Stanford: Hoover Institution Press, 1974), 195. Walter Goodman, "Yessir, Boss Said the White Radicals: When Black Power Runs The New Left," New York Times Magazine (September 24, 1967): 28; Jerry Garcia, Jann Wenner and Charles Reich, Signpost To A New Space: The Rolling Stone Interview (San Francisco: Straight Arrow Press, 1972).

¹⁹¹ Isley, Isley and Isley, "It's Your Thing," Isley Brothers, T-Neck 901, 1969. The single reached the number two Pop position and number one Soul position in March of 1969. "Leaders" and "weatherman" quotes from Bob Dylan, "Subterranean."

¹⁹² The problems of studying any specific aspect of the counterculture were frequently thwarted: "A study of hippies, however, cannot be conducting in the usual manner of interviewing and observation. Hippies have little respect for sociology." Geoffrey Simon and Grafton Trout, "Hippies in College" The Anti-American Generation, ed. Edgar Z. Friedenberg (New Brunswick, NJ: Trans-action Books, 1971), 20. Originally printed in transaction (December, 1967). Timothy Leary, interviewed shortly before his death on the Canadian Broadcasting System program As It Happens. May, 1996. Author's notes.

¹⁹³ Delbert L. Earisman, Hippies in Our Midst: The Rebellion Beyond Rebellion (Philadelphia: Fortress Press, 1968), back cover; William Braden, The Age of Aquarius: Technology and the Cultural Revolution (Chicago: Quadrangle Books, 1970), 18 and 294. Current efforts continue to fall into this trap. A recent work on the Grateful Dead stated "the guys here all look like Charles Manson and the women all look like Sharon Tate." Douglas Coupland, Polaroids from the Dead (New York: HarperCollins, 1996), 13.

"The alienation and meaninglessness of American life, against which earnest idealists of the early sixties rebelled, was soothed by the marketing of youth culture, based on its own clothes, music, drugs of choice, sexual values, and politics." In the end not much has changed on these counts. Steigerwald, The Sixties and the End of Modern America, 2. The countercultural take was slightly more bitter: "Meanwhile, corporate America discovered something. 'High' was as in as sex. The 'pseudo-high' [sic] might sell the product as well as does the 'pseudo-sex.'" "Psychedelia, Capitalism and Double-think," Lux Verite (November 1, 1967). A more recent work painstakingly details the advertising world's usurping of the counterculture as a sales tool: Thomas Frank, The Conquest of Cool (Chicago: University of Chicago Press, 1997).

¹⁹⁴ The hip segment of the counterculture is frequently referred to by the pejorative title of Hippie. Because many members of the counterculture find the

term offensive, and because I feel that it is misleading, I will attempt to refrain from using it. Columnist Herb Caen, a legendary fixture at the San Francisco Chronicle, frequently receives credit for originating the term. Though Caen deserves credit for "beatnik," hippie has a much older usage. On the origin and use of the word Hippie see: Tom Dalzell, Flappers 2 Rappers: American Youth Slang (Springfield, MA: Merriam-Webster, 1996.), 154-5.

¹⁹⁵ The Doors, "The End," The Doors, Elektra 74007, 1967. The LP reached the number two spot on the Top 40 chart in June of 1967. It spent a total of 53 weeks in the Top 40 charts. The song might include its own answer with the line "lost in a Roman wilderness of pain / and all the children are insane."

¹⁹⁶ An excellent example of the growing separateness of the youth culture can be found in the extremely interesting volume "It's Happening" which details the youth scene in Los Angeles far in advance of Haight-Ashbury and the Summer of Love. J. L. Simmons and Barry Winograd, "It's Happening": A Portrait of the Youth Scene Today (Santa Barbara: Marc-Laird, 1966).

¹⁹⁷ Loudon Wainwright, "The View From Here: The Strange New Love Land of the Hippies," Life (March 13, 1967): 14.

¹⁹⁸ Jack McDonough, San Francisco Rock: The Illustrated History of San Francisco Rock Music, 1965-1985 (San Francisco: Chronicle Books, 1985), 17; Michael Fallon, "A New Paradise For Beatniks" San Francisco Examiner (September 5, 1965) 5. The other articles in the series were "New Hip Hangout," September 6, page 14; "Bohemians New Haven," September 7, page 1 & 8; "Are Beats Good Business?" September 8, page 11. Thanks to Tom Webb for looking these up for me in San Francisco. One of the best first person accounts of the origins of the Haight-Ashbury scene was written by the "leader" of the Diggers, a much-publicized anarchistic, theatrical, communal arrangement. Emmett Grogan, Ringolevio, A Life Played for Keeps (London: Heinemann, 1972). An inspirational force for many and a crucial instigator of much of the bizarre mirth, outrageous street theater, and true love that the hip counterculture projected, Grogan sadly died of a heroin overdose in a New York subway. "Seems a common way to go," as Robert Hunter would later write. Hunter-Garcia, "Row Jimmy" Grateful Dead, Wake of the Flood, Grateful Dead Productions GD CD4002, 1973. In many ways this moody and introspective effort is a true coda to the sixties by the decade's longest running icons of the time.

¹⁹⁹ Charles Perry, "The Sound of San Francisco," Rolling Stone Illustrated History of Rock & Roll, ed. Jim Miller (New York: Random House / Rolling Stone Press, 1980), 269. On San Francisco's historical tolerance toward illegal intoxicants see: Kenneth D. Rose, "The Wettest of the Wets: San Francisco and Prohibition." California History (December, 1968): 286-295.

²⁰⁰ In large part, this situation was due to a quirk in the Selective Service Act, with its allowance for draft deferments until graduation. The need to stay in school for as long as possible was never greater, and the demand sustained several

marginal educational institutions until the law was changed. Anderson, The Movement, 140, 159 & 165.

²⁰¹ For one example: "Initially the hippies were an outgrowth of the beatniks and were dominated by artists, poets and those I have called seekers." Donald B. Louria, M.D., The Drug Scene (New York: McGraw-Hill, 1968), 170. Louria was the chief public health officer for the City and Country of San Francisco before the Haight-Ashbury crisis prompted his replacement by the unfortunately named Ellis D. Sox, who of course became known as LSD Socks overnight. The most complete account of the bus adventure can be found in: Paul Perry, On The Bus: The Complete Guide to the Legendary Trip of Ken Kesey and the Merry Pranksters and the Birth of the Counterculture (New York: Thunder's Mouth Press, 1990), 114. The Prankster caveat being that every participant had their own account, and each one was, more or less, true and false. As they themselves preached, "Never trust a Prankster."

²⁰² The classic account of the entire Kesey experiment can be found in Tom Wolfe, The Electric Kool Aid Acid Test (New York: Farrar, Straus & Giroux., 1968). Jerry Garcia flatly stated "the Acid Test was the prototype for the whole Grateful Dead trip." What was true for the Dead turned out to be true for the whole San Francisco rock scene, and eventually the nation. The large-scale rock festivals owed more to Kesey and Brand than to anyone else save Bill Graham, who took the idea and ran with it. David Gans and Peter Simon, Playing In The Band: An Oral and Visual Portrait of the Grateful Dead (New York: St. Martin's Press, 1985), 42. Handbill advertising the first Bill Graham show, Jefferson Airplane at the Fillmore Auditorium, featuring "the sights and sounds of the trips festival," author's private collection.

²⁰³ Gene Anthony, The Summer of Love: Haight-Ashbury at its Highest (Berkeley: Celestial Arts, 1980), 106; Charles Perry, The Haight-Ashbury: A History (New York: Rolling Stone Press, 1984). These two works contain the most complete and accurate information. Sherri Cavan, Hippies of the Haight (St. Louis: New Critics Press, 1972) and Burton H. Wolfe, The Hippies (New York: NAL-Signet Books, 1968), were both of some use, but contain much misinformation and are both confused and confusing. "Drugs: The New Prohibition?" Newsweek (February 7, 1967): 21-22, covers the Trips Festival largely as a rehearsal for an intensified Federal crackdown on the psychedelic drug scene, an effort that continues unabated up to this moment.

²⁰⁴ Lewis Yablonsky, "Ah, Wilderness," The Nation (April 1, 1967): 23. Ad for "A Gathering of the Tribes for a Human-Be-In," The Oracle, 1 (January, 1967): back cover. Steve Levine, "Be-In: A Gathering of the Tribes, A Baptism, Notes from the San Andreas Fault," San Francisco Oracle 1 (March, 1967): 3. Helen Swick Perry, The Human Be-In (New York: Basic Books, 1970) is a complete look at the event from the inner circle of its creators. Despite Marshall McLuhan's assertion that the sixties were a post-literate age, one in which television provided the ultimate experience, the counterculture (which owned no television networks, or

even television stations) is best grasped through the underground press. Particularly in 1967, at the beginning of the nationalization of the movement, it provides the best primary source of the original views guiding the formation of the counter culture. The underground press put writers' ideas on the streets with a minimum of hassle, censorship, or (unfortunately) proofreading. These papers saw and described themselves as far more than merely printing presses. The premiere '60s San Francisco underground paper, The Oracle, stated on its masthead, and in all seriousness: "The Oracle is a newspaper, but it is more than that. It will shortly be incorporated as a religious association, dedicated to sharing the insights gained from the psychedelic experience that others may ennoble their lives and place themselves in harmony with the universe." "The Oracle Effect," San Francisco Oracle (various 1967 copies), also Los Angeles Oracle 1 (April, 1967): 2. See: *Note On Sources*. "Life and Leisure: Dropouts With A Mission," Newsweek (February 6, 1967): 92-95. "Legendary before it happened," from Stern, Sixties People, 152.

²⁰⁵ The Seattle event was billed as "Chief Seattle's Flowerpotlatch & Isness-In" and was held on April 30, 1967 at Volunteer Park. Announcement of "The Second Coming" in Helix 1 (April 13, 1967): 6. The same issue also covered the Be-In in Vancouver, B.C. on Easter Sunday. The Chicago Be-In was held on May 14, 1967 at North Avenue Beach. "Chicago Be-In," The Seed 1 (April, 1967): 7; "Tribes Assemble on North Avenue Beach," The Seed 1 (May-June, 1967): 3. Milwaukee even held several in 1967, with the third on October 8. Local coverage described the event as "a pathetic non-spectacle attended by 40 part-time hippies, 7 straight observers, a four-man film crew, and 287 narcs." Jay Richards, "Milwaukee's Third Be-In," Kaleidoscope 1 (October 27- November 10, 1967): 6. "Narcs" was sixties slang for undercover narcotics police.

²⁰⁶ East Village Other coverage of the Be-In in Sheep Meadow in Central Park, Easter Sunday, 1967. Quoted in Daniel Foss, Freak Culture: Life-Style and Politics (New York: E.P. Dutton, 1972), 56-57.

²⁰⁷ Levine, "A Gathering of the Tribes," 3.

²⁰⁸ Hunter S. Thompson, "The 'Hashbury' Is the Capital of the Hippies," New York Times Magazine (May 14, 1967): 29. "Challenge to the Hippies," America, (September 2, 1967): 216.

²⁰⁹ "Hippies: Where Have All The Flowers Gone?" Time 90 (October 13, 1967): 30-31. Earl Shorris, "Love Is Dead," New York Times Magazine (October 29, 1967): 114. Not all were encouraged by the demise of the hippies. One publication (not particularly noted for countercultural sympathies), suggested: "Hippiedom is dead? Here comes straight, uptight society. Are we better off with Up with People, Dean Rush, Ronald Reagan and other nonhippies making their way our way on the Good Ship Lollipop?" "Pen-ultimate: De Mortuis," The Christian Century 84 (November 15, 1967): 1479. A view from inside the hip underground on the demise of the Summer of Love: Thorne Dreyer, "Love and Haight," The Rag 1 (June 5, 1967): 1. The Rag was published in Austin, Texas.

²¹⁰ O'Neill, Coming Apart 254. Joan and Robert K. Morrison, From Camelot to Kent State: The Sixties Experience in the Words of Those Who Lived It (New York: Times Press, 1987), 283. Rubin would later write a successful countercultural screed. Jerry Rubin, Do It! Scenarios of the Revolution (New York: Simon & Schuster, 1970).

²¹¹ "Psychedelic Lighting for Your Backyard," Women's Day Magazine (August / September, 1968): 37.

²¹² "Youth: The Hippies," Time 89 (July 7, 1967): 18.

²¹³ Quote from; Roszak, Making 36. For contemporary critiques of the hippie experience see; Hans Toch, "The Last Word on the Hippies," The Nation 205 (December 4, 1967): 582-588.

²¹⁴ "Editorial: The Splendid Desire for Nothing," America 116 (May 20, 1967): 746. William K. Zinsser, "The Love Hippies," Look 31 (April 16, 1967): 4. On the topic of the American marketplace's ability to manufacture and sell desire as the primary motivation for consumption see: William Leach, The Land of Desire: Merchants, Power, and the Rise of a New American Culture (New York: Vintage Books, 1993).

²¹⁵ Earisman, Hippies in Our Midst, 141.

²¹⁶ Norman K. Gottwald, "Hippies, Political Radicals and the Church," The Christian Century 84 (August 16, 1967): 1043.

²¹⁷ Quoted in Yablonsky, The Hippie Trip, 106.

²¹⁸ "A Proposal," Seattle Helix 1 (April 13, 1967): 8. The Helix was edited by Tom Robbins, who would later write many successful novels.

²¹⁹ "Interview with Timothy Leary, Allen Ginsberg, Allen Watts and Gary Snyder," Oracle 1 (February, 1967): 8. This remarkable piece of countercultural thought was done at the very beginning of the movement, only a few days after the first Human Be-In. "After not hearing the news for three days with its poison dancing like an idiot in the air between the cloven hoof beats of commercials. I dreamed I was young and climbing the quiet little hills of yesterday." William Walter De Bolt, "After Not Hearing the News for Three Days," The Christian Century 84 (August 16, 1967): 1045.

²²⁰ Ken Cowan, "The Hippy in Your Head," Indianhead 1 (September 1, 1967): 7. Published in Santa Ana, California by the Orange County Underground. Yablonsky found that the hippie belief that "we have in our motorized, mechanized society moved too far away from each other and the basic quality of the natural environment." Yablonsky, The Hippie Trip, 302.

²²¹ "The Iron Cage," Illustrated Paper (1967). Published in Mendocino, California. No volume, number or page number.

²²² "In terms of the currently accepted picture of the relation of man to technics, our age is passing from the primeval state of man, marked by his invention of tools and weapons for the purpose of achieving mastery over the forces of nature, to a radically different condition, in which he will have not only conquered nature, but detached himself as far as possible from the organic habitat." Lewis Mumford, The

Myth of the Machine: Technics and Human Development (New York: Harcourt, Brace & World, Inc., 1967), 3.

²²³ Foss, Freak Culture, 61.

²²⁴ Mike Baldwin, "20,000 Miles of America," The Seed 1 (Date unknown, 1967): 3. Reprinted from an uncirculated, somewhat censored issue of the East Village Other. The Seed was published in Chicago. Student quoted in; "Youth: The Hippies," Time 90 (July 7, 1967): 20. For elaboration on the "sick society" theme: Lester L. Poehner, "*I Didn't Want To Get Involved: The Lessons of the Kitty Genovese Murder*," delivered at the Society for the Interdisciplinary Study of Social Imagery, University of Southern Colorado, March, 1995.

²²⁵ (That's It For) The Other One: Cryptical Envelopment, Anthem of the Sun, Grateful Dead, Warner Brothers WS 1749, 1968. Over their thirty year, 2046 concert career the Dead performed this song over 500 times, in effect making it one their true theme songs. The standard reference source for the Grateful Dead's performances is the self-published Deadbase, the equivalent of a Baseball Abstract for Deadheads. Deadbase: The Complete Guide to Grateful Dead Set Lists, 8th ed., ed. Mike Dolgushkin, Stu Nixon and John W. Scott (Hanover, NH: Deadbase, 1995).

²²⁶ That drugs became a major social problem in the sixties, a problem which persists to the present, is undeniable, but the real scope of the problem is rarely faced. "The inhabitants of the earth spend more money on illegal drugs than they spend on food. More than they spend on housing, clothes, education, medical care, or any other product or service. The international narcotics industry is the largest growth industry in the world. Its annual revenues exceed half a trillion dollars - three times the value of all United States Currency in circulation, more that the gross national products of all but a half dozen of the major industrialized nations." Author's claims based on "classified documents prepared with the participation of the Central Intelligence Agency and the National Security Agency." James Mills, The Underground Empire: Where Crime and Governments Embrace (Garden City, NY: Doubleday, 1986), 3. This volume continues to be the only comprehensive work on the international drug problem which uses as its basis the true stories of Centac, a unit set up under the auspices of the Special Action Section of the Drug Enforcement Administration.

²²⁷ "God" from Romm, Open Conspiracy, 87; "permanently bedazzled," from "The Hippies," Time 90 (July 7, 1967): 18. For information on the ancient uses of psychoactive agents see two excellent anthologies: Flesh of the Gods: The Ritual Use of Hallucinogens, ed. Peter T. Furst (New York: Praeger Publishers, 1972); Hallucinogens and Shamanism, ed. Michael J. Harner (New York: Oxford University Press, 1973).

²²⁸ Mark Gerzon, The Whole World Is Watching (New York: Viking Press, 1969), 116.; Donald B. Louria, The Drug Scene (New York: McGraw-Hill, 1968), 15. Louria's take on the drug scene was largely negative, however, the 1968 work was far less haranguing than his earlier work; Nightmare Drugs (New York: Pocket

Books, 1966). The climate of opinion surrounding many of these drugs before the sixties drug crisis can be sampled in: R. S. De Ropp, Drugs and the Mind (New York: Grove Press, 1957.); D. Ebin, The Drug Experience (New York: Orion Press, 1961).

²²⁹ Bob Dylan, "Rainy Day Women, #12 & 35," Blonde On Blonde, Columbia Records 43592, 1966. The single rose to the number two position in April of 1966. The LP, Columbia 841 [2] peaked at the number nine spot in August.

Drugs were such an integral part of the Woodstock experience that Wavy Gravy's stage announcement, "Stay away from the brown acid" was included on the record. Deke Slayton, at Mission Control in Houston, is quoted as suggesting to Jim Lovell, "Hey Jim. While you're up ... you might want to dig out the medical kit and pull out a couple of those Dexedrine tablets apiece." Lovell & Kluger, Lost Moon, 314. That the government could supply and encourage the astronauts to use Dexedrine and arrest people coming home from Woodstock for possessing the same drug makes blaming the young highly problematic. One well regarded study in the late sixties found that "the pattern of youthful drug use in many respects duplicates the pattern of the older American's drug use." Joel Fort, The Pleasure Seekers: The Drug Crisis, Youth and Society (Indianapolis: Bobbs-Merrill, 1969), 210.

²³⁰ Overviews on the historical aspects of America's drugs problem can be found in: Sara Harris, Skid Row, U.S.A. (New York: Belmont Books, 1956) and Luc Sante, Low Life: Lures and Snares of Old New York (New York: Farrar, Straus & Giroux, 1991). Reefer Madness was a 1936 anti-drug film directed by Louis Gasnier. Popular at midnight movies through the sixties due to its ludicrous and insane portrayal of marijuana, which provided Reefer Madness with an extremely high camp quotient. The subject of camp is itself a unique part of the sixties. The two best known essays were: Susan Sontag, "Notes On Camp," 1964, reprinted in Against Interpretation (New York: Farrar, Straus & Giroux, 1966); Dwight McDonald, "Masscult and Midcult," 1960, reprinted in Against the American Grain (New York: Random House, 1962).

²³¹ It was rumored, beginning with the Berkeley Barb, (which, up until then, had never been taken as a notable source of accurate information by the mainstream) that by frying banana peels and scraping the residue into a pipe and smoking it, one could obtain some variety of psychedelic experience. The entire episode was later revealed to be a prank, though the United Fruit Company was not amused. To be sure, United Fruit was not all that popular in Berkeley, either. An early example of hysterical reaction can be found in: "Donna and the Sugar Cube," Newsweek (April 18, 1966), 100.

²³² The range of legal drugs, available by prescription and mass marketed through doctors and pharmacies, was deep and wide. Categories ranged from uppers - myriad forms of amphetamine often dispensed as diet pills, and Ritalin which was used for hyperactive children - to downers (barbiturates such as Seconal and Tuinal) and various mood medications lumped together as tranquilizers, most

notably Valium and Librium. The range of painkillers available to doctors included cocaine, central nervous system depressants like Darvon, and the range of synthetic opiates like codeine, morphine and Percodan.

Attacks on pop music often focused on its pro-drug stance. This interpretation rarely pans out in a truthful analysis of pop hits. The Rolling Stones ditty about mom's drug problem shared chart space with a song about her children's problem. *Well you think you found the answer on a magic carpet ride last night, but when you wake up in the morning the world still gets you uptight / Well there's nothing left that you ain't tried, to fill that hollow emptiness inside / but when you come back down girl, you still ain't feeling right / Don't you know your kicks just keep getting harder to find, and all your kicks ain't bringing you peace of mind / before you find out it's too late, girl you better get straight - Oh but not with kicks!* Barry Mann and Cynthia Weil, "Kicks," Paul Revere and the Raiders, Columbia 43556, 1966. Peaked at number four position in March of 1966. Jagger-Richards, "Mother's Little Helper," Rolling Stones, London 902, 1966. Peak at number eight in July 1966. "White Rabbit," Surrealistic Pillow. For the record, the Jefferson Airplane, and Grace Slick in particular deny that they wrote the song with drugs in mind. Ralph Gleason, The Jefferson Airplane and the San Francisco Sound (New York: Ballantine, 1969).

²³³ Hendrix, "Are You Experienced?"

²³⁴ Steven B. Duke and Albert C. Gross, America's Longest War: Rethinking Our Tragic Crusade Against Drugs (New York: G. P. Putman's Sons, 1993), 101; "Acid Impressions" Lux Verite (True Light) 1 (November 1, 1967): 15. Published in Lafayette, Indiana. Psychedelic Art, ed. J. Houston and R. E. L. Masters. (New York: Grove Press, 1968), offers the best overview of the decade's art movement.

²³⁵ The foundation of later drug laws can be found in Strategy Council on Drug Abuse, Federal Strategy: Drug Abuse Prevention (Washington, DC: Government Printing Office, 1976).

²³⁶ Psychotechnology: Electronic Control of Mind and Behavior, ed. Robert L. and Ralph K Schwitzgebel. (New York: Holt, Rinehart & Winston, 1973). Marilyn Ferguson, The Aquarian Conspiracy: Personal and Social Transformation in the 1980s (Los Angeles: J. P. Tarcher, 1980). One medical researcher wrote about LSD, "Its potency, however, is truly amazing. One kilogram is equivalent to slightly more than two pounds. One one-thousandth of a kilogram is a gram. One one-thousandth of a gram is a milligram. One one-thousandth of a milligram is a microgram, and only 100 to 250 micrograms need be administered by mouth to produce a potent four to twelve hour hallucinogenic experience." Louria, The Drug Scene, 131. A manual put together for law enforcement professionals noted the same information in the sixties: "Because the drug is extremely powerful in its effects, it is dispensed in extremely small doses, between 100 micrograms and 250 micrograms per dosage." Narcotics and Hallucinogenics: A Handbook, ed. John B. Williams. (Beverly Hills: Glance Press, 1963), 152. Revised Edition, 1967.

²³⁷ Roszak, Making, 177.

²³⁸ As late as 1969, the National Institute of Mental Health still held out hope that LSD could be used to treat "alcoholism and emotional problems, and as a way to provide some mental relief for persons with terminal illness." LSD : Some Questions And Answers, U.S. Department of Health, Education and Welfare, Health Services and Mental Health Administration, National Institute of Mental Health - Public Health Service Publication No. 1828. (Washington, DC: Government Printing Office, 1969). Author's collection. Earlier types of advocacy can be found in: "LSD Helps Severely Disturbed Children," Science News 89 (May 14, 1966); "LSD Helps Alcoholics," Science News 90 (July 9, 1966): 22. A large collection of scientific articles and appraisals can be found in: The Use of LSD in Psychotherapy and Alcoholism, ed. Harold Abramson. (Indianapolis: Bobbs-Merrill, 1967). B. H. Golightly and P. G. Stafford, LSD: The Problem Solving Psychedelic (New York: Award Books, 1967 offers another example.

²³⁹ Early advocates, and even press accounts, occasionally speculated that LSD was, in fact, just the beginning. "LSD and the current mind drugs are only the curtain raisers for the brave new world taking shape in the lab." "LSD and the Drugs of the Mind," Newsweek 67 (May 9, 1966): 64.

²⁴⁰ Jay Stevens, Storming Heaven: LSD and the American Dream (New York: Atlantic Monthly Press, 1987), 371. "Why the drugs were outlawed is related to the conflict between the nature of the psychedelic experience and the values of American society. Government authorities, both legislators and enforcement officials, asserted that the drugs were as dangerous, if not more so, than narcotics, thereby ignoring a good deal of the relevant research." Alan Watts, "Psychedelics and Religious Experience," in Psychedelics: The Uses and Implications of Hallucinogenic Drugs, ed. Bernard Aaronson and Humphry Osmond. (Garden City, NJ: Anchor Books, 1970), 135. "Epidemic of Acid Heads; Post-LSD Symptoms After Non-Medical Use," Time 87 (March 11, 1966): 44; and "Law & LSD," Time 88 (June 10, 1966): 34; J. A. Osmundsen, "Other Side of LSD: The Promise and the Peril," Look 31 (August 8, 1967).

²⁴¹ "The next stage, so to speak, although not directly distinguishable because of the extremely fluid boundaries and the elimination of structured spatiality, was an acute loss of time perspective or time-bound ness." Rolf von Eckartsberg, "A Kind of Harmonious and Convincing Equilibrium," in The Ecstatic Adventure, ed. Ralph Metzner. (New York: Macmillan, 1968), 40. Originally published in Psychedelic Review 2 (1963).

²⁴² Noted researcher of sixties youth Kenneth Keniston described it as a "fantasy of fusion and merger" on which the LSD user arrives at an "almost mystical union with nature, with their own inner lives, or with other people." These experiences of "oneness with nature" that the student trippers he interviewed described were, according to Keniston, the type that "characterize intense religious experience." Kenneth Keniston, "Drug Users: Heads and Seekers," Youth and Dissent: The Rise of a New Opposition (New York: Harcourt Brace Jovanovich, 1971), 239. Original

essay published in The American Scholar as "Heads and Seekers: Drugs on Campus, Countercultures and American Society," (Winter, 1968-1969): .

²⁴³ Ray Thomas, "Legend of a Mind," In Search of the Lost Chord, The Moody Blues, Deram 18017, 1967. The LP peaked at number twenty-three in October of 1968.

²⁴⁴ LSD was created in Switzerland amid the chaos of World War II. At the Sandoz laboratories, a 37 year old chemist named Albert Hoffman had been working for eight years on synthesizing ergot, a derivative of rye mold. Looking for a new analeptic for use in migraine headaches, Hoffman painstakingly synthesized over twenty different compounds of the ergot lysergic acid. It was the twenty-fifth version that would cause the problems. In the process of synthesizing LSD-25, Hoffman somehow ingested some (probably by skin absorption) and, on Friday, April 16, 1943, he took the first acid trip. The result, according to his own report to his supervisor, produced hallucinations of "an uninterrupted stream of fantastic images of extraordinary plasticity and vividness and accompanied by an intense kaleidoscopic play of colors." Hoffman termed LSD his "problem child" but he could not keep it to himself - the explosion of psychoactive chemicals grew to become a global problem. Albert Hoffman, LSD: My Problem Child. (New York: McGraw-Hill, 1980), 15. "Long strange trip" from: Garcia-Weir-Lesh-Hunter, "Truckin," American Beauty, The Grateful Dead, Warner Brothers. WS 1893, 1970. The LP rose to number thirty in December of 1970.

²⁴⁵ In the Second World War, the German Air Force performed experiments with mescaline along with other atrocities at the Dachau concentration camp. Their goal was to find a drug that would "eliminate the will of the person examined." The OSS followed up on the Dachau experiments after the war. Several compounds were tested at St. Elizabeth's Hospital in Washington DC, but these American doctors, looking for a truth serum that would help them root out suspected communists, had their best results with THC, the active component of marijuana. In 1947 the CIA was chartered and the agency continued the experiments. The research expanded into project MK-ULTRA, an effort to secure a mind control drug for use in covert operations and a truth serum for use in intelligence gathering activities. In a series of experiments performed on unsuspecting citizens that were the focus of extensive Senate hearings in the 1970's, the CIA administered LSD to anyone it could get its hands on. Greater ramifications would arise from other CIA sponsored experiments at opposite ends of the country, at Harvard and Stanford universities. Tad Szulc, "The CIA's Electric Kool-Aid Acid Test," Psychology Today 11 (November, 1977): 22-25. Martin A. Lee, "High Spy" Rolling Stone (September 1, 1983). The comprehensive revelations uncovered by Congress can be found in Biomedical and Behavioral Research, 1975, Joint Hearings before the Subcommittee on Health of the Committee on Labor and Public Welfare and the Subcommittee on Administrative Practice and Procedure of the Committee on the Judiciary, United States Senate, September, 1975; and Project MK-ULTRA, The CIA's Program of Research in Behavior Modification, Joint Hearing before the Select Committee on

Intelligence and the Subcommittee on Health and Scientific Research of the Committee on Human Resources, United States Senate, 1977. For a detailed examination of the CIA's program to develop mind altering weapons for military and intelligence purposes see: John Marks, The Search for the Manchurian Candidate. (New York: Times Books, 1979); Martin A. Lee and Bruce Shlain, Acid Dreams, The Complete Social History of LSD: The CIA, the Sixties, and Beyond (New York: Grove Weidenfeld, 1985). Both are exceptional works.

²⁴⁶ Quotes from Timothy Leary interview, "Editors' Preface," Perry, On The Bus, xix.

²⁴⁷ Leary outlines his background in various autobiographies: Timothy Leary, High Priest (New York: World Books, 1968); Confessions of a Hope Fiend (New York: Bantam Books, 1973); and Flashbacks: An Autobiography (Los Angeles: J. P. Tarcher, 1983). Huxley writes about the early Leary experiments in: Aldous Huxley, The Doors of Perception and Heaven and Hell (London: Penguin, 1961). Huxley was guest lecturer at MIT when Leary first proposed to work with psychoactive chemicals. The two took psychedelics together at least once, as recalled in: Moksha: Writings on Psychedelics and the Visionary Experience (1931-1963), ed. Michael Horowitz and Cynthia Palmer. (New York: Stonehill, 1977). For a personal look at both Leary and the Millbrook milieu, particularly reveling in its mundaneness, see an interesting interview with Leary's daughter, a college student at the time of the interview. M. Mannes, "Young People and LSD: A Talk With Susan Leary," McCall's 47 (July, 1966): 14. Clear and non-hysterical treatment can also be found in: William Braden, The Private Sea: LSD and the Search for God (Chicago: Quadrangle Books, 1967).

²⁴⁸ E. James Lieberman, "Psycho-Chemicals as Weapons," Bulletin of the Atomic Scientists, (January, 1962). Leary wrote a follow-up with George Litwin, Michael Hollingshead, Gunther Weil and Richard Alpert entitled "What to Do When the Vietcong Drop LSD in Our Water Supply," Bulletin of the Atomic Scientists (May, 1962). Hollingshead fueled the Millbrook experiment by supplying Leary with a half-gram of pure LSD, enough for 5,000 trips. Michael Hollingshead, The Man Who Turned On the World (London: Blond & Briggs, 1973).

²⁴⁹ T. R. Leary, G. H. Litwin and R. Metzner, "Reactions to Psilocybin Administered in a Supportive Environment," Journal of Nervous and Mental Disease (1963): 561-573. Details the results of the Concord Study.

²⁵⁰ Richard Norton Smith, Harvard Century: The Making of a University to a Nation (New York: Simon & Schuster, 1986), 236-237. The Harvard Review, I (Summer 1963), created much of the controversy. The volume featured R. Gordon Wasson writing about "The Mushroom Rites of Mexico" and Leary and Alpert's "The Politics of Consciousness Expansion," later reprinted as "The Fifth Freedom - the Right to Get High." R. Vaughan, "Is This Trip Really Necessary? Dr. Leary's LSD Road Show," Life 61 (November 11, 1966): 24, offers a look at Leary's initial efforts at mass popularization.

²⁵¹ Leary quoted in Perry, On the Bus, 100-101. Art Kleps, Millbrook (Oakland: The Bench Press, 1975). Leary died in 1996 of prostate cancer, a common old guy type illness, even though Art Linkletter bitterly stated "it was pretty good evidence about what happens to you when you live that kind of life." Leary was 75 years old and continued to take LSD to the end and became the first person to die "online" in what he called "Designer Dying" an attempt to "illuminate the last taboo." A sampling of reaction to Leary's death, including the Linkletter quote from the Los Angeles Times were reprinted in: "Epistles To Timothy," High Times 19 (November, 1996): 20.

²⁵² Albert A. Kurland, et. al., "The Therapeutic Potential of LSD in Medicine," in LSD Man & Society, ed. Richard C. DeBold and Russel C, Leaf (Middletown, CT: Wesleyan University Press, 1967) provides a solid overview of LSD articles.

²⁵³ "Hippies: The Creator," Newsweek 71 (January 8, 1968); "The Hippies," Time 92 (July 7, 1967): 22.

²⁵⁴ *ibid.* See also: Wolfe, Electric Kool Aid, 186-189.

²⁵⁵ Owsley and Scully's chemical distribution efforts are detailed in Roger Lewis, Outlaws of America (London: Penguin, 1972); and Lee and Shlain, Acid Dreams, 240-282. See also, Stevens, Storming Heaven, 309-319.

²⁵⁶ Timothy Leary wrote of his experience with Owsley in an article entitled, "God's Secret Agent A.O.S. 3." Reprinted in; The Politics of Ecstasy (Berkeley: Ronin Publishing, 1990), 277-289. Ralph Metzner, unpublished manuscript, cited in Stevens, Storming Heaven, 313. Metzner worked with Leary and Alpert on the original Harvard studies.

²⁵⁷ *ibid.*

²⁵⁸ Timothy Leary, "Ecstasy Attacked - Ecstasy Defended," Esquire (November, 1963). Reprinted in a slightly expanded form in; Timothy Leary, The Politics of Ecstasy (Berkeley: Ronin Publishing, 1990), 74; originally published by G.P. Putnam's in 1968. Leary had been linking atomic energy and LSD in the press since 1966, see his quote in; "Drugs of the Mind," Newsweek, 62.

²⁵⁹ "Better Living Through Chemistry" was the corporate slogan of Monsanto, one of the world's largest chemical companies. It was well known through constant use in mass market advertising, and through Monsanto's popular exhibit at Disneyland.

²⁶⁰ This quotation comes from the title of a wonderful and neglected book that dealt with the gradual deterioration of four American missionaries in the Amazon jungle. An account in the book detailed a four day psychedelic experience under the influence of ayahuasca (also known as yage) which is why it was chosen for this section. It should also have been mandatory reading at every commune in America for its vivid portrayal of an extremely malevolent Nature, and dangerous natural world. Peter Matthiessen, At Play In The Fields Of The Lord (New York: Random House, 1965).

²⁶¹ Walter N. Pahnke, LSD and Religious Experience," LSD Man & Society, in Food of the Gods: The Search For The Original Tree of Knowledge, A Radical

History of Plants, Drugs, and Human Evolution, ed. Terence McKenna (New York: Bantam Books, 1992). It should be noted that this topic remains one of the more controversial aspects of LSD. Sociologists stated that "there is a significant sociological difference between the mental illness and mystical interpretations of the psychedelic experience. One is legitimated by the institutional structure, while the other is the belief of a deviant group," but psychiatrists were not so sure, as the symptoms of both mimicked each other, leading down a slippery slope where all religious inspiration could come to be seen as a psychosis. W. David Watts, Jr., The Psychedelic Experience: A Sociological Study (Beverly Hills, CA: Sage Publications, 1971), 34.

²⁶² The original article was written by R. Gordon Wasson, "Seeking the Magic Mushroom" Life 42 (May 27, 1957): X. Wasson, an East Coast socialite and financier with Morgan Guaranty, was also a world-renowned amateur mycophile. For Luce and LSD see: W.A. Swanberg, Luce and His Empire (New York: Charles Scribner's Sons, 1972), 463, and Wilfred Sheed, Clare Boothe Luce (New York: Dutton, 1982), 125. Lee and Shlain in Acid Dreams cite Clare Boothe Luce's admission to Dick Cavett in 1982 as a casual "Oh sure, we all took acid.": 305, notes to Chapter Three, third reference. Humphry Osmond, an early Canadian researcher of LSD and a pioneer in the study of alcoholism, commented "it is painful to admit that the major magazines have probably done a better job than newspapers in reporting on LSD." Moreover the effect of such stories was powerful. "There is no question, but that the role of the press has been significant in creating interest in psychedelics, fear of psychedelics and the existence of a psychedelic movement." Psychedelics: The Uses and Implications of Hallucinogenic Drugs, ed. Bernard Aaronson and Humphry Osmond (Garden City, NY: Anchor Books, 1970), 399 and 416.

²⁶³ Wolfe, Electric Kool Aid, 113.

²⁶⁴ James Hitchcock, "The Christian and the Hippie," The Christian Century 84 (August 16, 1967): 1041. Shorris, "Love Is Dead," 114. "Typical attitudes of this group are a tendency to disbelieve middle class ideals, and an inclination to seek satisfaction through social reforms and/or personal pursuits that emphasize the importance of personal experience over social imposed standards." John L. Haer, "The Psychedelic Environment: A New Psychological Phenomenon," Journal of Popular Culture 3 (Fall, 1969): 260-266.

²⁶⁵ Timothy Leary, "The Seven Tongues of God", originally delivered at the 71st convention of the American Psychological Association, August 30, 1963. Later published in Psychedelic Review, 3 (1964). Reprinted in The Politics of Ecstasy, 13. Leary's "The Religious Experience: Its Production And Interpretation" stated similar findings with an experimental group consisting of deans, chaplains, religious philosophers, and editors. Leary wrote: "At this point it is conservative to state that over 75 percent of these subjects report intense mystico-religious responses, and considerably more than half claim that they have had the deepest spiritual experience of their life."

²⁶⁶ "LSD and the Third Eye," Atlantic Monthly 218 (September, 1966): 65.

²⁶⁷ Ginsberg quoted in: Bruce Cook, The Beat Generation (New York: Charles Scribner's Sons, 1971), 244.

²⁶⁸ Ibid.

²⁶⁹ "The Hippies," Time 90 (July 7, 1967): 19.

²⁷⁰ Louria, The Drug Scene, 143.

²⁷¹ Ginsberg quoted in Notes from the New Underground: An Anthology, ed. Jessie Kornbluth (New York: Viking Press, 1968), 69.

²⁷² "Dropouts," Newsweek Of all the groups in San Francisco at the dawn of the Age of Aquarius, the Psychedelic Rangers are the most difficult to pin down. They were largely a one man group, the creation of Michael Bowen, who was arrested with Leary, et. al. at the Millbrook raid by future Watergate felon G. Gordon Liddy. He also helped instigate the Be-In, the March Against the Pentagon, turned on Jerry Rubin, and provided office space for the first few issues to the publishers of the Oracle. A follower of John Cooke, an artistic LSD guru living in self-imposed exile in Mexico, little more is known about him. Anthony, Summer of Love, 14-23. Richard Brautigan, All Watched Over By Machines of Loving Grace Brautigan waxes about the coexistence of man and nature "where mammals and computers / live together mutually / programming harmony." A cybernetic ecology if you will. For a longer discussion on Brautigan's visions of technological and natural harmony see: The Exploited Eden: Literature on the American Environment, ed. Robert J. Gangewere (New York: Harper & Row, 1972); 376.

²⁷³ John Lennon and Paul McCartney, "I Am The Walrus," The Beatles, Magical Mystery Tour, The Beatles, Capitol 2835, 1967. Both the single - "Walrus" was the "B-Side" of "Hello, Goodbye" Capitol 2056 - and the LP reached the number one position in December of 1967. As a rule Top 40 radio stations played both sides of Beatles singles, the only group that ever really happened for.

²⁷⁴ Yablonski, The Hippie Trip, 360; Pahnke, "LSD and Religious Experience," 63 & 65.

²⁷⁵ von Hoffman, We Are The People.

²⁷⁶ "Acid Impressions" Lux Verite 1 (November 1, 1967): 15. von Hoffman, We Are The People, 107. Time reported one tripper's recollection of pondering a plant. "I thought the plant was very friendly and very, very closely related to me as a living thing. For a while, I became a plant." "LSD and the Drugs of the Mind," Newsweek (May, 9 1966): 59. This experience was common, identified in one clinical study as "experiences of plant consciousness" where the subjects came to see "plant life as a model for ideal human conduct." Stanislav Grof, M.D., Realms of the Human Unconscious: Observations from LSD Research (New York: Viking Press, 1975), 182. Grof worked at the Esalen Institute and wrote this book after 17 years of observations with LSD.

²⁷⁷ William Hedgepeth, "Inside the Hippie Revolution," Look 31 (August 22, 1967): 64. Jane Dunlop, My LSD Experience.

²⁷⁸ Reverend Mary Hart, "The Oneness in God, the Vision of Christ, the Crucifixion," The Ecstatic Adventure, ed. Ralph Metzner (New York: Macmillan, 1968), 80.

²⁷⁹ John Blofeld, "Consciousness, Energy, Bliss," The Ecstatic Adventure, 129.

²⁸⁰ Quoted in Keith Melville, Communes in the Counter Culture: Origins, Theories, Styles of Life (New York: William Morrow, 1972): 162.

²⁸¹ Yablonski, Hippie Trip, 233: "fusion" from, William Hedgepeth, "Hippie Revolution," Look: 64. From a section entitled "Oneness with Life, and with All Creation." "Similar insights can be experienced in regard to the interaction of different life forms in all the permutations of their synergism and antagonism within the framework of planetary ecology. The consciousness of all living matter can also be associated with the exploration of the contradictions and conflicts intrinsic to life, with attempts to estimate the relative power of life's self-preserving forces versus self-destructive potentials, and with an assessment of the viability of life as a cosmic phenomenon. Experiences of this kind can result in an enhanced awareness and sensitivity to ecological problems related to technological development and rapid industrialization." Grof, Realms of the Human Unconscious, 183-4.

²⁸² Quoted in: Judson Jerome, Families of Eden: Communes and the New Anarchism (New York: Seabury Press, 1974), 260-1. Follow up interviews, articles and reminiscences from many of the principals can be found in: Psychedelic Baby Reaches Puberty, ed. Peter Stafford (London: Academy Editions, 1972).

²⁸³ King, Goffen and Wexler, "A Natural Woman (You Make Me Feel)," Aretha Franklin, Atlantic 2441, 1967. Franklin's single rose to the number eight position in October of 1967. Later, King would rerecord the song for her LP Tapestry, which was released in early 1971. Aside from revolutionizing women's music by virtually inventing the genre, King's record broke all sales records set up to that point. It would remain the largest selling record until 1980, when Pink Floyd's Dark Side of the Moon would finally eclipse it. All told, Tapestry spent three hundred and two weeks in the Top 40. Lou Rawls, "Natural Man," MGM 14262, 1971. The two songs effectively frame the time period under consideration here.

²⁸⁴ Sources on fashion in the sixties are numerous. Of the weekly photo journals, Look in particular possessed a heightened sense of fashion and is a good place to start. The Sixties: A Decade in Vogue, ed. Nicholas Drake (New York: Prentice Hall, n.d.), covers the fashion changes from the perspective of the decade's leading fashion magazine. Marilyn Bender, The Beautiful People (New York: Coward-McCann, 1967), and Barbara Benson, Fashion in the 60's (New York: St. Martin's Press, 1978), John Peacock, Fashion Sourcebooks: The 1960's (New York: Thames and Hudson, 1998), all offer overviews and analyses of sixties fashion trends and fads. The single best academic work on fashion is Fred Davis, Fashion, Culture and Identity (Chicago: University of Chicago Press, 1992). Early indications of the primitive trend can be seen in Paul Goodman, Rural Life: 1984, written in 1967, and Fred Davis, "Haight-Ashbury's Hippies and the Future Society," reprinted in Society As It Is, ed. Glen Gaviglio and David E. Raye (New York:

Macmillan, 1971), 153-165. Originally printed in transaction Magazine (December, 1967).

²⁸⁵ Warren James Belasco, Appetite For Change: How the Counterculture Took on the Food Industry, 1966-1988 (New York: Pantheon Books, 1989), 18. Belasco wrestled with the use of the word natural within the counterculture. "Although defenders of mainstream cuisine liked to point out how ill-defined, indeed contradictory, the concept of natural could be, within the countercuisine the adjective was attractive precisely because it was so expandable. Basically, natural had three reference points: content, time and attitude. As a state of mind, it suggested an enchantment with anything that was not too rationalized, predictable, standardized. In all, natural seemed a useful opposition category because it was defined by what it was not." Page 41. The best known of the countercuisines was the macrobiotic diet, meaning prolonging life. It is most closely associated with brown rice and sprouts. Advocates claimed that such a diet was "like drugs, only better," largely because these foods allow "your mind escapes your body." Yin, Yang, and MB," Time 83 (April 3, 1964): 60. Craig Cox, Storefront Revolution: Food Co-ops and the Counterculture (New Brunswick, NJ: Rutgers University Press, 1994), examines the impact of these changes on the production and retail levels. "Paranoia" from Stewart Brand's review of Adelle Davis's vanguard cult classics, Let's Cook It Right and Let's Eat Right To Keep Fit in The Whole Earth Catalog (Fall, 1969), 79.

²⁸⁶ Shorris, "Love Is Dead," 27 & 113. S. B., "Living With The Land," Oracle 1 (March, 1967): 15.

²⁸⁷ "Going Up The Country," Canned Heat, Woodstock, Atlantic, 1970. The phrase was fairly popular in older country blues lyrics. The most comprehensive research on such lyrics cited 11 examples dating back to the 1920's, but heck, it was new to most of the Woodstock crowd. Michael Taft, Blues Lyric Poetry: A Concordance (New York: Garland Press, 1984).

²⁸⁸ "With the blossoming in a few cities of large hippie colonies, the street-corner press began reporting an ongoing exodus of groups calling themselves tribes, or communists, organized into communes. They are young people in their teens and 20s, white and mostly middle class, from perhaps six to 18 in number who go to flower-filled farms far away from the asphalted cities, leaving the constricted apartment homes of their nervous, unhappy parents to experience communal living with a joyous extended family, never their own." Romm, The Open Conspiracy, 59 and 61. An overview of the entire movement is given in Ron Roberts, The New Communes: Coming Together in America (Englewood Cliffs, NJ: Prentice Hall, 1971). J.R. Goddard, "Zen Retreat in California: Not for the Frivolous," The Village Voice (July 16, 1967), covers the early days of one extremely successful effort. Another successful western commune, the Hog Farm, was loosely run by Hugh Romney, better known as Wavy Gravy, he of the infamous brown acid announcements at Woodstock and permanent baby-sitter for the Grateful Dead right through to the end in 1995. Hugh Romney, "The Hog Farm," in Side Saddle on

the Golden Calf: Social Structure and Popular Culture in America, ed. George Lewis (Pacific Palisades: Goodyear, 1972).

Several contemporary works on communes focused on sex exclusively, grouping experiments in group sexuality modeled after Harrad with the nudity regularly practiced as part of the natural, back-to-the-land ethic. Though Harrad styled experiments clearly ran counter to traditional American culture they are nonetheless outside the scope of this investigation. Richard Atcheson, The Bearded Lady: Going on the Commune Trip and Beyond (New York: The John Day Company, 1971). Atcheson served as travel editor for Holiday magazine and the book was cast in that style, with strange sexual occurrences substituting for trips to Tahiti. The sexual aspects of communal living were a critical issue in one prominent court case: Seth Many and Carolyn Peck, Lewd (Boston: Beacon Press, 1972). The most flagrant example of sexual exploitation can be found in W.D. Sprague, Case Histories from the Communes (New York: Lancer Books, 1972). Only six people are interviewed, and those interviews focused exclusively on sex written up in a True Confessions style.

²⁸⁹ Shorris, "Love Is Dead," 27. "Where Are They Now?: The Haight-Ashbury Scene," Newsweek 74 (December 2, 1969): 20. "15 minutes of fame" is a paraphrase of Andy Warhol's famous quotation, one of the decade's most insightful and profound remarks.

²⁹⁰ One young female Digger in New York said, "There's no love here anymore. Everyone is scared to death. Everyone carries weapons. Even I carry a knife now." "Life and Leisure: Trouble In Hippieland," Newsweek 70 (October 30, 1967): 84. The grizzly murder (his body was discovered in chunks, one piece at a time) of a Haight drug dealer named Superspade generated similar feelings in San Francisco. See von Hoffman, We Are The People, 89.

²⁹¹ William Hedgepeth, "Inside the Hippie Revolution," Look 31 (August 22, 1967): 62.

²⁹² Robert S. Fogarty, American Utopianism (Itasca, IL: F. E. Peacock Publishers, 1972). "The Commune Comes to America," Life (July 18, 1969): 16. The linkages between western symbolism and the hip counterculture were examined in a paper by the author, "Cowboys and Indians in Haight-Ashbury: Hippies and the Reconciliation of the American West," delivered at the 1994 meeting of the Society for the Interdisciplinary Study of Social Imagery at the University of Southern Colorado.

²⁹³ quote: William Hedgepeth and Dennis Stock, The Alternative: Communal Life in New America (New York: Macmillan, 1970), 69. By 1970, the New York Times had managed to identify "nearly 2000 communes in 34 states." This figure was frequently quoted in later, often by writers who felt the numbers were underestimated. Bill Kovach, "Communes Spread as the Young Reject Old Values," New York Times (December 17, 1970). Also cited in Fogarty, American Utopianism. Steigerwald cites a figure of 4,000 in 1970 but offers no documentation for the source of that figure. Steigerwald, Sixties and the End of Modern America,

254. The West, of course, kept moving throughout American history - the fringe in the 19th century was Indiana and later Iowa, both of which hosted several famous communal movements. The twentieth century frontier was California. Notable presixties utopian efforts in California included; Holy City, Pisgah Grande, various Theosophist communities and Fountain Grove Ranch, (which adjoined my high school in Sonoma County). Paul Kagan, New World Utopias: A Photographic History of the Search for Community (New York: Penguin Books, Inc., 1975). By the way, the reference to L'Amour and McMurtry is not as far-fetched as it seems. In fact, the first destination of Kesey's bus trip was to visit his buddy from the Stanford writing program, Larry McMurtry. Perry, On The Bus, 72-75.

²⁹⁴ James Hitchcock, "The Christian and the Hippie," The Christian Century 84 (August 16, 1967): 1042. William M. Kephart, Extraordinary Groups: An Examination of Unconventional Life-Styles (New York: St. Martin's Press, 1987), Third Edition, also notes the lack of outreach activities, attributing this largely to the negative impact of publicity.

²⁹⁵ Kris Kristofferson and Fred Foster, "Me and Bobby McGee," Janis Joplin, Columbia 45314, 1970. The single reached number one following the tragic death of Janis Joplin. The Grateful Dead had been playing the song live since 1969. Full lyrics are reprinted in David Dalton, Janis (New York: Simon & Schuster, 1971), 190-192

²⁹⁶ Quoted in Melville, Communes in the Counter Culture.

²⁹⁷ Gilbert Zicklin, Countercultural Communes: A Sociological Perspective (Westport, CT: Greenwood Press, 1983), 1-2.

²⁹⁸ Thompson, "Hashbury," 124.

²⁹⁹ Philip Slater, The Pursuit of Loneliness: American Culture at the Breaking Point (Boston: Beacon Press, 1970). Avoid the 1976 revision. The basis for much of this philosophy can be found in the works of Norman Brown, particularly Love's Body which was popular in the sixties.

³⁰⁰ Quoted in: Hedgepeth and Stock, The Alternative, 4. For a more in-depth critique see; Bennett M. Berger, "Hippie Morality - More Old Than New," The Anti-American Generation, ed., Edgar Z. Friedenberg (New York: Trans-Action Books, 1971), 81-98. Originally published in *transaction* Magazine, 1968. Richard Wizansky took exception to Mungo (one of his fellows on the farm) and other leftists who were dissatisfied with the present and longed to return to an idealized past, feeling this mindset preempted the ability to plan for a bold new future.

"Disaffection with a way of life and a yearning to return to what was probably a romanticized version of a happier past are in themselves insufficient to produce a direction for useful change. One has to glimpse a possible avenue toward the future, a light that points to a possible way out of the past." Total Loss Farm: Stories and Scenes of Life on a Total Loss Farm, ed. Richard Wizansky (New York: Saturday Review Press, 1973), 36, 38.

³⁰¹ Leary and Snyder quoted from; "Interview, Leary, et. al.," Oracle, 10.

³⁰² The attempts to devise "a physical setting that will endow each resident with a sense of membership in a coherent community and simultaneously offer him the greatest possible choice of styles for his own life." Richard Clark, "New Towns, U.S.A.," Modern Utopia 1 (March-April, 1967): 6-9. Modern Utopia originated at Tufts University, Boston. Total Loss Farm and Elaine Sundancer, Celery Wine: The Story of a Country Commune (Yellow Springs, OH: Community Publications Cooperative, 1973). Both books offered first person accounts of communal life in the late sixties. Celery Wine takes place from the spring of 1968 through the spring of 1970 on High Ridge Farm in Oregon, which Sundancer refers to with the pseudonym Saddle Back Ridge and places in California in an attempt to protect the anonymity of its residents. Total Loss Farm takes place on the East Coast in 1968 through 1971. High Ridge Farm and Tassajara both arose out of the same Berkeley discussion group. One of the best selling countercultural books was a volume on bread produced by the Tassajara commune in the hills above Big Sur and Carmel, California, which was followed up by an even more expansive cookbook. Edward Espe Brown, The Tassajara Bread Book (Berkeley: Shambala Publications, Inc., 1970); Tassajara Cooking (Berkeley: Shambala Publications, Inc., 1973). Stephen Gaskin, Monday Night Class (Berkeley: Book People, 1970), details the ideas from his standpoint as the founder and leader. The Merry Prankster's "Chief," Ken Kesey, quoted in Robert Houriet, Getting Back Together (New York: Avon Books, 1971), 57- 146, 220-221. Houriet's accounts present the best overall glimpse of many of these communes, including High Ridge Farm.

³⁰³ "Masthead, Statement of Purpose," L. A. Oracle 1 (March, 1967): 1. Peter Bergman, "On the Hopi Indian" L. A. Oracle 1 (August, 1967): 6. Peter Bergman was one of the founders of the counterculture comedy group Firesign Theater. For plans on "How To Build A Tipi and Wikiup" L. A. Oracle 1 (June, 1967): 17. This feeling was not confined to the West Coast. One Chicago paper reviewed a book on American Indian spirituality and commented: "spiritually aware Americans naturally come upon the power and relevance of American Indian traditions. Great attention has been paid to the rites and customs of the Indians of the Southwest, mainly by seekers of truth living in the west." "Reviews," The Seed 1 (July, 1967): 7.

³⁰⁴ Hugh Gardner, The Children of Prosperity: Thirteen Modern American Communes (New York: St. Martin's Press, 1978), 15. Studies and interviews in the book date from 1969 and 1970.

³⁰⁵ "Youth: The Hippies," Time 90 (July 7, 1967): 22.

³⁰⁶ Melville, Communes in the Counter Culture, 28. A solid single volume examination of the fertile sixties commune movement around Taos, New Mexico. Incidents at the area's Free School served as the basis for the weepy and maudlin countercultural exploitation film Billy Jack.

³⁰⁷ Gardner, The Children of Prosperity, 134-135. "The Hippies," Time 90 (July, 1967): 22. "no" quote from Sara Davidson, "Open Land: Getting Back to the Communal Garden," Harper's Magazine 240 (June, 1970). Reprinted in

Communes: Creating and Managing the Collective Life, ed. Rosabeth Moss Kanter (New York: Harper & Row, Publishers, 1973). Snyder quote, "Interview, Leary, et. al.," Oracle, 11.

³⁰⁸ "The Iron Cage," Illustrated Paper (1967). Published in Mendicino, California. No volume or page number.

³⁰⁹ Zicklin, Countercultural Communes, 1-2 & 10.

³¹⁰ "The Hippies," Time 90 (July, 1967): 20. Actually, the theory was not original with the countercultures, but originated with John Kenneth Galbraith in The Affluent Society (Boston: Houghton Mifflin, 1958) and reached its apogee in his classic The New Industrial State (Boston: Houghton Mifflin, 1967) .

³¹¹ Most of these problems were common in most efforts. A succinct cycle was sketched out in Robert Houriet, "Life and Death of a Commune Called Oz," New York Times Magazine (February 16, 1969): 30-31. A longer case study of one of the best known communes, the semi-technology free effort in Colorado known as Drop City can be found in; Peter Rabbit, Drop City (New York: Olympia Press, 1971). Joyce Gardener, Cold Mountain Farm: An Attempt at Community (n.p.: 1970?), was a disturbing and depressing account of a New England failure. Booklet in the archives at the Sonoma County Public Library, Santa Rosa Historical and Genealogical Annex (SCPL/SRH&GA), Morningstar file.

³¹² Yablonsky, Hippie Trip, 195.

³¹³ Snyder quote, "Interview, Leary, et. al." Oracle, 8.

³¹⁴ Morningstar resident quoted in Elia Katz, Armed Love (New York: Holt, Rinehart and Winston, 1971), 176.

³¹⁵ Health and sanitation problems are covered in almost every volume ever written on the commune movement.

³¹⁶ John van der Zee, Canyon: The Story of the Last Rustic Community in Metropolitan America (New York: Harcourt Brace Jovanovich, 1971), 5. An early effort at restructuring work and careers can be found in the publication, Vocations For Social Change, which originated and was published in Canyon.

³¹⁷ *Ibid.*, 137.

³¹⁸ Michael E. Brown, "The Condemnation and Persecution of Hippies," transaction Magazine 6 (September, 1969): 33-46. Details many of the negative incidents attending to countercultural interactions with mainstream America. Mark Kramer, "Folk Wisdom: City Cousins and Country Radicals," The Phoenix 2 (December 8, 1970): 3 & 6, also examines these tensions and the resulting problems. The Phoenix was published in Boston.

³¹⁹ Gottlieb quoted in Houriet, Getting Back Together, 15. See also; Kenneth Lamott, "Doing Their Own Thing at Morningstar," reprinted in Utopias Social Ideals and Communal Experiments, ed. Peyton E. Richter (Boston: Holbrook Press, 1971), 155-164. Originally printed in Horizon (Spring, 1968): 14-19. "Dope" quote from Frank Zappa, "Who Needs the Peace Corps," We're Only In It For The Money, Verve 1967. Rereleased in 1986 by Rycodisc, RCD 40024, copyright held by Barking Pumpkin, 1985.

³²⁰ See Houriet, "The Battle of Sonoma Country," Getting Back Together, 14-16; See also "The Morningstar Bummer" in Yablonsky, Hippie Trip, 181-198. Many press clippings, particularly covering the fight over deeding the property to God, and many letters detailing local opposition can be located at the SCPL/SRH&GA, Morningstar Ranch folder and Wheeler Ranch folder. One particular feature of areas that successfully closed down communes was socioeconomic status. Alameda and Sonoma Counties were wealthy areas, and did a much better job of dislodging communes through legal means than poorer areas did. One observer noted: "Had the community [Wheeler] been located in Colorado's Huerfano Valley, southwestern Oregon, or even Taos - all poor areas which never mounted decisive, organized resistance to the communes in their midst," it might well have survived much longer than it did. One of the grimmest books on the commune movement details a cross country journey of fear and paranoia, taken in the winter of 1968-69, as those areas of the counterculture most in the media spotlight came under enough pressure to collapse. Peace and love quickly transmuted to suspicion, hostility and violence, particularly when the anonymity and the diversity found in the cities was removed in rural areas. Gardner, Children of Prosperity, 147.

³²¹ By late 1969 Wheeler Ranch was little more than an ecological disaster populated by human casualties. Personal observations made on two separate visits at that time match those of the author who described an "appearance of wasted, post-Civil War bleakness." Katz, Armed Love, 172-203. Davidson, "Openland" Harper's Magazine (date?) 91-102, also looks at Wheeler Ranch in depth and examines many of its problems.

³²² Paul Kantner, "Crown of Creation," Crown of Creation, Jefferson Airplane, RCA 4058, 1868. The LP peaked at the number six spot in September of 1968.

³²³ Whole Earth Catalog: Access to Tools, ed, Stewart Brand (Fall, 1969): inside cover page. Published by the Portola Institute, Menlo Park, California. "Difficult but possible" from the "Supplement Function," inside cover, all editions.

³²⁴ "Purpose," Whole Earth Catalog, (hereafter WEC) inside cover page, all editions.

³²⁵ Quotes from, Melville, Communes in the Counter Culture, 200. "Function," WEC, inside cover page, all editions. The Whole Earth Catalog was only the most successful of a number of publications focusing on personal development through appropriate technologies. The Foxfire series of books was another example. In large part Foxfire was a how-to book, but it also catered heavily to a nostalgia born of an older local color movement. Information ranged from a solid guide to log cabin construction, making moonshine, and other food preparation and storage methods, to rambling accounts covering planting by the signs of the zodiac and various folk remedies. In some respects this literature can be seen as a reflection of American pastoral ideals combined with Americana crafts traditions as well as a foreshadowing of the seventies self help movement. Abbie Hoffman's, Revolution For The Hell Of It (New York: Dial Press, 1968) and Steal This Book (New York: Pirate, 1971), also offered up advice to the would-be urban guerrilla, but Hoffman's

overall vision failed to sustain any real or permanent change, which was not his purpose at any rate. The Foxfire Book: hog dressing; log cabin building; mountain crafts and foods; planting by the signs; snake lore, hunting tales, faith healing; moon shining; and other affairs of plain living, ed. Eliot Wigginton (Garden City, NJ: Anchor Books, 1972). The book is largely a collection of pieces which originally appeared in Foxfire magazine from 1968 through 1971. Foxfire was very favorably reviewed in WEC (Spring, 1970): 45.

³²⁶ Brand's role in organizing the Trips Festival, which sought to "celebrate the new feelings, the higher consciousness that people were trying to express," was critical. Anthony, Summer of Love, 99-103. "Stewart Brand took over where the Pranksters left off." Perry, On The Bus, 153. Brand was assisted by a young adman, Jerry Mander, who later wrote a well received work on electronic mass media, one that given his countercultural background not surprisingly called for abandoning the technology altogether. Jerry Mander, Four Arguments For The Elimination of Television, (New York: Morrow Quill Paperbacks, 1978). Italics in original. See footnote number four in this chapter for one of Stewart Brand's early attempts at incorporating Native American ideals into the counterculture.

³²⁷ Stewart Brand, review of Tao Teh King, WEC, (Spring, 1969): 10

³²⁸ WEC, (Fall, 1969), Science of Artificial review, 10-11; Wall Street Journal and Fortune reviews, 66. Jane and Michael Stern commentated that "Hippie theory, such as it was, made small distinction among a mind-bending acid trip, divine communion, and beautiful scenery; and so it came to be that hippie trippers often contemplated neurological voyages and the pontification of the religious convert with pilgrimages to the mystical-religious-exotic wonders of the world, especially the East: The beach at Goa, the shrines of the Himalayas, and the holy cities of North Africa. Their grail was double-size - big enough to hold not only the sixth century wisdom of the Tantrics but also pipeloads of dynamite hash." Stern, Sixties People, 155.

³²⁹ WEC (Fall, 1970): 10.

³³⁰ WEC (Fall, 1969): 5; Barry Commoner, Science and Survival (New York: Viking Press, 1966); The Subversive Science: Essays Toward an Ecology of Man, ed. Paul Shepard and Daniel McKinley (Burlington, MA: Houghton Mifflin, 1969), v-vi. From the "Editor's Forward" by A. Starker Leopold. HH, "Counter Culture," a review of Counter Culture: The Creation of an Alternative Society, ed. Joseph Berke (London: Peter Owen, Ltd., 1969) in WEC (Fall, 1970): 57. Several specific critiques of the technological society, including Mumford's Technics and Civilization, Drucker's The Age of Discontinuity: Guidelines to Our Changing Society and Rene Dubos' Man Adapting, Ellul's Technological Society stress a common theme, best expressed by the commentary on Teilhard de Chardin's The Phenomenon of Man, where the "vision and expression of that vision are beautiful - of man evolving a super- abundance of mind: in the noosphere where the All and the Person are one," a statement that could lead the reader to "feeling bullshitted" unless the book itself was actually read.

³³¹ Naturally, several books on organic gardening, rural industry and animal husbandry were offered. Wood burning stoves, wind power generators and a set of U.N. documents on alternative sources of energy were also included in the section. These gentler options to large scale industry and industrialism were in line with the Whole Earth ideal.

³³² The interest in learning would spin off in a sister publication, the short lived Big Rock Candy Mountain, also published by the Portola Institute. Quotes from Gurney Norman, reviewing Mike and Marilyn Ferguson, Champagne Living on a Beer Budget (New York: G. P. Putnam's, 1968) in WEC (Fall, 1969): 88; and Joan Ranson Shortney, How To Live on Nothing (New York: Pocket Books, 1961), WEC (Fall, 1969): 88. Norman wrote an expanded review of the two books together in WEC (Spring, 1970): 94.

³³³ Outward Bound review, WEC (Fall, 1969): 117. Outward Bound was a program for urban and suburban adolescents designed to enhance self-image and provide personal motivation - referred to in the parlance of the time as grit and determination - through the use of peer pressure in high-risk activities set in a wilderness environment. Though elements of Outward Bound, Ranger training and Prankster life all resembled a forced march under extreme duress, it should be noted that while participation in both the Pranksters and the Rangers was voluntary, Outward Bound rarely was. Programs based on this model continue within American corporate culture as team building exercises for young executives.

³³⁴ Particular attention was paid to the emerging areas of computers and cybernetics. Two early versions of home computers were offered, the Hewlett-Packard 9100A and the Wang 700, both priced in the mid \$4,000 range, a fairly expensive item at the time. Attention was also given to a wide array of technologies associated with artistic endeavors: cameras, sound equipment and art supplies. WEC (Fall, 1969): 69. In 1985 Brand founded the WELL (Whole Earth 'Lectronic Link,) the first public access connection to the Internet and the forerunner to America Online et al. The WELL predated the national obsession with the information superhighway and the World Wide Web by at least seven years. In many respects the World Wide Web may well be the true first step into the Electric Tibet. This computerenthusiasm did not find total favor within the counterculture. See: Kirpatrick Sale, Rebels Against the Future: The Luddite Lesson for the Computer Age (Reading, MA: Addison-Wesley, 1995).

³³⁵ The second section, "Shelter and Land Use," on geodesic domes and other innovative shelter technologies that could be easily mastered by average workers with common tools. Tensile structures and guyed mast structures were covered, as well as more primitive structures that demonstrated man's capacity to work "in conjunction with nature" as opposed to our traditional building methods, which were seen as subverting and perverting nature. The emphasis in this section, as in all the other sections, was on personal ability. Several titles, The Owner Built Home, Wiring Simplified, House Carpentry Simplified and Your Engineered House stressed this personal, hands-on approach in contrast to modern reliance on experts. Earth

homes and wilderness cabins shared space with the hippies' most favored domicile (at least in a fantasy sense) the Tipi. Tools for the house itself were also reviewed, including Aladdin Kerosene Lamps, advocated over Coleman lamps which "are terrible - they hiss and clank and blind you, just like civilization."

³³⁶ Reviews of How to Keep..., WEC (Spring, 1970): 113. The sixties trend of producing manuals for the "complete idiot" culminated in the nineties with the "for Dummies" line of manuals that were subtitled with a very WEC outlook as "references for the rest of us," and which by 1997 had sold over 25 million copies, including DOS for Dummies, Resumes for Dummies and the ever popular Sex for Dummies. Quality Paperback Book Club, Camp Hill, PA, advertising circular Q9702-D, 1997. Author's collection.

³³⁷ Ibid. After their car broke down on a research trip, largely due to neglect, one set of communal researchers concurred with the Whole Earth outlook, though they were probably unaware of it. "When we went back to the Hilton, and before we fell into a restless midday sleep, we agreed that Princeton and MIT had been very mistaken to give us degrees. What sort of society is it, we wondered, that turns out imbeciles like us from the nation's finest institution, alleging that we are educated, when we don't know the first thing about how to operate and care for the most ubiquitous machine in our lives? A pretty dumb society, we decided - very nearly as dumb as we were. There we are, millions of us zooming all over the country every day in cars that might as well be magic carpets for all we understand of their mysteries. We thought of the two or three communes we'd heard of, where no one is permitted to possess any machine he cannot take apart and put back together again. A damn good policy, we concluded. Stupidity like ours was intolerable in any sensible man; for God, it was nothing short of sacrilege." Atcheson, The Bearded Lady, 278-279.

³³⁸ The "Industry and Craft" section, for example, offered several volumes on design and understanding technology, including The Way Things Work, a masterpiece of basic technological education. Basic volumes dealing with physics and chemistry, as well as alternatives to the Western tradition such as Science and Civilization in China, set up practical alternatives to standard means of technical education. Crafts appropriate to the new society included pottery, castings, macramé and weaving as well as furniture building, glass blowing, candle making and woodcarving. Books on Native American crafts, Indian Crafts and Lore, and buckskin, (essential to the hip counterculture's unique fashion sensibilities) were also featured in the section.

³³⁹ WEC (Fall, 1970): 10.

³⁴⁰ Ibid.

³⁴¹ WEC (Spring, 1969): 5.

³⁴² WEC (Fall, 1969): 4. Albert Rosenfeld, The Second Genesis: The Coming Control of Life (Englewood Cliffs, NJ: Prentice-Hall, 1969). Rosenfeld was the science editor for Life.

³⁴³ WEC (Fall, 1969): 5. Barry Commoner, Science and Survival (New York: Viking Press, 1966); The Subversive Science: Essays Toward an Ecology of Man, ed. Paul Shepard and Daniel McKinley (Burlington, MA: Houghton Mifflin, 1969), v-vi. From the "Editor's Forward" by A. Starker Leopold.

³⁴⁴ Ecotactics and The Environmental Handbook, ed. Garrett De Bell (New York: Ballantine Books, 1979). Robert Heinlein, Time Enough For Love, the Lives of Lazarus Long (New York: G. P. Putnam's, 1973). Heinlein's work, particularly his book Stranger in a Strange Land (New York: G. P. Putnam's, 1961), was very popular in the hip counterculture, were the expression "Grok" (to comprehend and agree on a visceral and intuitive level) became a hip watchword.

³⁴⁵ For a recent compilation of Whole Systems thought, see Jose Arguelles, Earth Ascending: An Illustrated Treatise on the Law Governing Whole Systems (Boulder, CO: Shambala Publications, 1984).

³⁴⁶ The holistic outlook fundamental to the new understanding was termed by Brand as Whole Systems. This theory was largely suggested by the work of R. Buckminster Fuller. WEC offered six different Fuller titles on the page dedicated to his work, including Operating Manual for Spaceship Earth and the older classic, Nine Chains to the Moon. The Luddism that the early ecology movement was occasionally accused of is quite out of synch with the text that reproduces Fuller's basic proposed curriculum redesign, and was far more scientific than any national proposals following Sputnik, though written decades prior to it. A fourteen point program of Design Science including studies in synergetics, defined by Fuller in another work as "the unique behavior of whole systems unpredicted by behavior of their respective subsystem events," general systems theory, theory of games, based largely on the work of Von Neumann, cybernetics and ergonomics, as well as the more generally recognized fields of chemistry, physics, biology, meteorology, and production engineering, were the core of the program. The decline in technological enthusiasm is best expressed, not by a Luddite outlook, but by this kind of usable, functional and simplistic use of technology as a tool for living, rather than an engine of progress or the harbinger of a better world. R. Buckminster Fuller, Ideas and Integrities (New York: Macmillan, 1963); No More Secondhand God (Carbondale, IL: Southern Illinois University Press, 1963); Operating Manual for Spaceship Earth (Carbondale IL: Southern Illinois University Press, 1969); The Unfinished Epic of Industrialization (New York: Small Publishers Company, 1963); Nine Chains to the Moon (Carbondale, IL: Southern Illinois University Press, 1963), originally published in 1938. WEC (Fall, 1969): 3.

³⁴⁷ Rosella Hips review of Shulamith Firestone, The Dialectic of Sex: The Case for Feminist Revolution (New York: William Morrow, 1970), WEC (Fall, 1970), 129. The connection was explicit in Firestone's work. "The feminist movement has the essential mission of creating cultural acceptance of the new ecological balance necessary for the survival of the human race in the twentieth century." Page 231.

³⁴⁸ Ragni, Rado, Kellog and MacDermmot, "Good Morning, Starshine" Hair. Recorded by Oliver, Jubilee 5659, 1969, the single made it to the number three spot on the Top 40 charts in June of 1969.

³⁴⁹ These photos were shot in November of 1967 by the ATS satellite. In that same month Apollo Four also took pictures of the whole earth, obscured by clouds and darkness - the photo had little impact, save for use as WEC covers. Brand mentioned his whole earth campaign in a short history he penned for The Last Whole Earth Catalog (Spring, 1971): 439. See also: George Leonard, Walking On the Edge of the World: A Memoir of the Sixties and Beyond (Boston: Houghton Mifflin, 1988), 321.

³⁵⁰ WEC (Fall, 1969): 6-7.

³⁵¹ WEC (Fall, 1969): posters page 7, Earth Flag page 80.

³⁵² "Triumphant Return from the Void," Time 93 (January 10, 1969): 40.

"Procedure" and "blue planet" by James Dickey, "1968: The Incredible Year," Life (January 10, 1969): 25.

³⁵³ Sixties photojournalists captured many of these moments: Lyndon Johnson being sworn in on Air Force One, the incredibly poignant picture of President Kennedy's son saluting his father's passing coffin, Saigon's chief of police shooting a Viet Cong terrorist point blank in the temple during the Tet offensive, napalmed children running away from an airstrike, protesters sticking flowers into the gun barrels of combat ready soldiers locked and loaded on American citizens, a young girl bent over a lifeless body at Kent State. Life in the 60's, ed. Doric C. O'Neil (Boston: Little Brown, 1989) reprints all the above photographs. "Nineteen sixty-eight would be even more calamitous than the pessimists anticipated," noting that the New York Times published a record 20 headlines in the full eight column format. Irwin and Debi Unger, Turning Point: 1968 (New York: Charles Scribner's Sons, 1988), 2. David Caute, The Year of the Barricades: A Journey Through 1968 (New York: Harper & Row, Publishers, 1988). Quote: Leonard, Walking On The Edge, 321.

³⁵⁴ There were of course many of these pictures, all falling within the general class of "Earthrise" shots. The original set was shot on Apollo Eight during the 1968 Christmas holidays, and another famous set from the actual lunar surface, shot on Apollo Eleven in the summer of 1969. The image is essentially the same, and I will deal with these photos as a common whole, using "Earthrise" to describe the entire class of photos which show the earth suspended in space, usually with the moon in the foreground.

³⁵⁵ Allen Ginsberg quoted in Cook, The Beat Generation, 244-245.

³⁵⁶ Anne Morrow Lindbergh, "The Heron and the Astronaut," Life 66 (February 18, 1969): 26.

³⁵⁷ Ibid.

³⁵⁸ Leonard, Walking On The Edge, 322.

³⁵⁹ Timothy Leary, "Letter from Timothy Leary," San Francisco Good Times (September 18, 1970). Reprinted in Weathermen, ed. Harold Jacobs (San Francisco: Ramparts Press, 1970), 517.

³⁶⁰ Paul Kantner and Marty Balin, "Plastic Fantastic Lover," Surrealistic Pillow.

³⁶¹ Even a short list of the incidents of technology related failures, excesses and dangers is mindboggling: lead in gas, a variety of occupational health and safety issues, the TAPS pipeline in Alaska, declining marine fisheries, radioactive waste, radioactive fallout, the disposal of poison gas and nerve agents in the oceans, synthetic fertilizer, animal waste from stockyards, disappearing farmland, Project Plowshare's plan to use atomic bombs to excavate a larger canal in Panama, bottle and can litter, mining, the SST, pollution of the stratosphere, noise pollution, birth control pills, mercury in fishing areas in Sweden and in also in shellfish in Japan, the Everglades Canal, the Everglades airport, U.S. Army Corps of Engineers projects in general, New York Harbor, a wide variety of power plant projects from Bodega to Storm King, offshore oil drilling, the shipping of crude oil, automobile pollution, taconite tailings in Lake Superior, mining in Boundary Waters Canoe Area, thermal and radioactive discharges from power plants, (atomic and otherwise,) a variety of problems in the Great Lakes (for which Lake Erie became emblematic,) and lower Mississippi Basin toxic pollution from agricultural chemicals, fertilizer and pesticides. All of these competed for the attention of the American public during the decade and each of these events spawned research and study committees, local opposition, articles, books, documentaries and dissertations. One source of detailing these various technological problems was put together by the National Science Foundation as part of an attempt to determine how to undertake technology assessment once they had a mandate to do it.

³⁶² The increasing use of a technology increased the curiosity of both the scientific community and the public at large about it, and this in turn led to increasing numbers of studies and reports in technical publications and in the media. Early in the decade, due to standard protocols of the scientific community, there was a substantial time lag between the treatment of an issue in the technical journals and its appearance as a news story, though as the decade wore on this time lag shortened to an almost inconsequential increment as scientists began releasing information to the media before presenting it to their peers. Mass media reports were repeatedly criticized as being sensational, overly dramatic, incomplete and often misleading, a critique easily substantiated. Media reports were also greeted by the scientific and corporate communities with reassurances, denials, or attempts to prove that steps to alleviate the problem were in process. These rebuttals and press releases typically suffered from low credibility. On occasion companies felt obliged to buy advertising space to make their counterclaims. Massive public relations efforts followed too, as charges and counter charges (often inflated) vied for public attention. Those who were not actively engaged in these arguments were bombarded with a litany of failures from one side and a flood of increasingly unrealistic propaganda from the other. Extensive coverage of these

problems, failures and disasters raised public awareness, provided grounds for those prone to panic and provided clear and present dangers for the opponents of technological enthusiasm to focus on. The effect of mass media was to bring rapid and widespread visibility via mass communication. To the casual viewer, problems mushroomed overnight from a narrow technical issue to a subject of massive and often intensive public concern. Overall such publicity may be helpful to society, but intense public scrutiny of scientific and technological issues often proved counterproductive and discouraging. The crisis mentalities of the opponents and the resulting bunker mentalities of the vested interests often served to further polarize a society that, throughout the decade, began to come apart at the seams

³⁶³ O'Neill, Coming Apart, from the "Epilogue: The Revolution Is Over," 422.

³⁶⁴ One of the first food panics occurred in late 1959 over the Thanksgiving staple, cranberries. "The Cranberry Affair," Newsweek 54 (November 23, 1959): 35; "The Cranberry Boggle," 74 Time (November 23, 1959): 25; "Mercy Ma! No Cranberries," Life 47 (November 23, 1959): 28-33. Cyclamates, widely used as a sugar substitute, proved a bitter problem, and were eventually banned. See Time, volumes 94 & 96, "Bitterness about Sweets," (October 17, 1969): 79; "HEW Bans the Cyclamates," (October 24, 1969): 84; "Cyclamates' Sour Aftertaste," (October 31, 1969): 79; "Total Eclipse for Cyclamates," (August 31, 1970): 60.

³⁶⁵ By 1965 even Presidential Reports were talking about the quality of life in those terms. Up through early 1967, pollution did not even merit its own separate heading in the Readers Guide to Periodic Literature. Articles were filed under their respective categories of air or water. From late 1967 on, the Guide lists more than fifty articles under the general heading of pollution. On mercury in tuna, see: "'The Tainted Tuna," Newsweek 76 (December 28, 1970). Noise pollution was depicted as a threat to humans as early as October of 1966. "B. J. Culliton, "Noise Menace Threatens Man: Hearing and Sanity May Be Affected," Science News 90 (October 15, 1966): 297-299. The scientific findings were popularized for a mass audience by S. Blum, "Noise: How Much More Can We Take?" McCall's 94 (January, 1967): 48-49; M. Brower, "Noise Pollution: A Growing Menace," Saturday Review 50 (May 27, 1967): 17-19. Noise problems originating from repeated sonic booms would be primarily responsible for eventually canceling the SST project. I would be remiss if I did not add that to many adults the worst form of noise pollution during the decade was rock and roll music. Several scientific studies backed up the claims that many parents, my father in particular, repeatedly made. "Rock Physically Unsound," Science Digest (June, 1968), 67-68; and "Going Deaf From Rock 'n' Roll," Time 92 (August 9, 1968): 47.

The issue of light pollution began to be raised somewhere in the mid-60's, when the idea of putting one or more large mirrors in orbit to provide illumination to selected areas of the planet came to the attention of NASA researchers. The joint DOD-NASA effort was dubbed Project Able. The intent of Project Able was to illuminate an area 220 miles in diameter to twice the brightness of a full moon. Able utilized a satellite made of aluminized mylar film that, once in orbit, would inflate into

a round flat mirror some 2000 feet in diameter. Defense planners were captivated by the thought of being able to illuminate an area this large and put several such schemes into operation, including outfitting planes with spotlights that, at 12,000 feet, could illuminate an area two miles in diameter to four times the brightness of the moon. The strategic intention was overcome the advantage the Viet Cong gained by utilizing the cover of night to move troops and supplies, both within the South and from North to South on the fabled Ho Chi Minh Trail.

The first public notice of Project Able came in an AP story in July of 1966. The story was picked up by a paper in Hartford, Connecticut, where a major battle over new and brighter street lights had recently taken place. Local astronomers decried these brighter lights as a hindrance to their work, and latched on to the AP story immediately. The Hartford Courant headlined the story as "But Who Needs Sun at Night?" As a follow-up, the Courant reported on August 15, 1966, that the G. T. Schjeldahl Company had received a \$40,000 contract to develop a satellite package that would open to a 2,000 foot reflective dish capable of "illuminating half of Florida." The story stressed varied military and civilian uses for the satellite, such as "exposing enemy positions, search and rescue missions, enhanced security, navigation beacons, and as an aid for radio astronomy." The astronomer Edgar Everhart, a professor at the University of Connecticut who had discovered one comet and co-discovered another, led the national opposition to Project Able. He enlisted the support of Sky and Telescope magazine, whose inquires revealed that two major contractors (Boeing and Westinghouse Electric Company) had already received contracts of \$125,000 each under Phase A of Project Able. In their October issue, Sky and Telescope detailed their objections to the project in an editorial. This new information raised new criticisms, largely from the astronomy community, but also from the general scientific community. By the end of the year, the House Committee on Science and Astronautics began hearings on Project Able. These hearings disclosed that other contractors - Grumman Aircraft and Goodyear Aerospace, along with the G. T. Schjeldahl Company - had evaluated the mirror concept, and that NASA had to date spent a total of \$490,000 on the project. NASA worked hard to promote the civilian advantages and downplay the military rationales during the hearings, and projected that the whole system would be operational by the mid-1970's. Time, the first popular national magazine to cover Project Able illustrated its story by depicting the illumination of Vietnam in Time's unique artistic style. In January of 1967, both Time and Science carried stories that detailed both the positive and negative effects of the project. NASA is quoted in the article as offering the following benefits: limiting night infiltration in Vietnam, lighting blacked-out cities, overcoming the 6 months of darkness in the polar regions, and as an aid to navigation. Objections included Everhart's complaints about interference with domestic astronomy, interference with other astronomers all over the world, the possibility of mirrors and night-lights upsetting the circadian rhythms that control plant and animal processes, and frivolous uses (such as enhanced opportunities for recreation). Moreover, the military uses already noted violated

both NASA principles and recent treaties regarding the use of space for warfare. NASA did not officially kill the project, but no further work was done, and it quietly faded away. "But Who Needs Sun at Night?", Editorial, Sky and Telescope, 183 (October, 1966); "Mirrors Are Coming," Time, 89 (January 13, 1967); B. Nelson, "Reflecting Satellite," Science, 155 (January, 20, 1967); "A Crack in 'Able.'" Science 91, 304 (April 1, 1967).

³⁶⁶ The contradictory nature of many of the claims worked to the advantage of the ecological faction, for example, carbon dioxide levels high enough to produce the "greenhouse effect" tended to warm the cities by trapping hot air but, on a global scale, speculation worried about the possible long term effects that tended to lower the average temperatures across the planet. "Is Man Spoiling the Weather?" U. S. News and World Report (August 19, 1968): 60-61; M. Franz, "Are We Changing The Weather?" Organic Gardening and Farming (December, 1968): 51-55; Wallace Cloud, "Are We Changing Our Weather by Accident?" Popular Science Monthly (May 1969): 74-77. Raise the temperature or lower it, it didn't matter really, dire consequences followed either outcome.

³⁶⁷ Worries about the quality of the nation's air began well before the sixties. Previous efforts at amelioration included the 1955 National Air Pollution Control Act, passed partially in reaction to a series of fatal incidents. In 1948 a toxic smog (a combination of fog and smoke) blanketed Donora, Pennsylvania, resulting in the deaths of 20 people the illness of and additional 6,000. New York City experienced similar episodes, one in 1953 which was blamed for over 200 deaths, 200-400 in 1963, and another 168 fatalities in 1966. Death figures for smog episodes from L. Hodges, Environmental Pollution (New York: Holt, Rinehart & Winston, 1973). S. J. Williamson, The Fundamentals of Air Pollution (Reading, MA: Addison-Wesley, 1973) details the process at work in the creation of killer smog. For popular press coverage see: "Death at Donora," Time 52 (November 8, 1948): 25-26; "Death in Donora" Newsweek 32 (November 8, 1948): 25; "Death Over Donora" Life 25 (November 15, 1948): 107-110.

³⁶⁸ Dr. John T. Middleton, "The Internal Combustion-Engine vs. The American People?" Popular Science Monthly (May 1967): 97-98.

³⁶⁹ Joseph M. Callahan, "The Billion-Dollar Smog Hoax!" Motor Trend 19 (March 1967): 68-70. "Hoax" proved a little severe, but there was little doubt that such efforts did little. By 1967, a long term effort dating back to 1954 had successfully "eliminated 90 percent of the smog that comes from industry and other stationary sources." However, by early 1967 these regulations were "helpless to combat the source of 90 percent of the city's air pollution - the 3.5 million automobiles that spew fumes in the air as they wind about the hundreds of miles of clogged streets and freeways." "California's Still Choking," The New Republic 156 (February 11, 1967): 10-11.

³⁷⁰ Dubos, Pines, et al., Health and Disease (New York: Time, Inc., 1965), 101. In December of 1966, Lyndon Johnson called a National Clean Air Conference in Washington to begin new national efforts to deal with the problem. The resulting

1967 Air Quality Act, though packed with loopholes and automatic delays, was at least a start at a coherent national policy. The act gave the initiative to the states, with federal help and aid available only after appropriate local response and action. Federal agencies (HEW) received power to review state standards, and to mandate compliance by instituting federally imposed standards if the states failed to act in a timely and appropriate manner.

³⁷¹ Ibid.; "Death, Disease, and Dirty Air," Medical World News (August 20, 1969): 22.

³⁷² "Eat, Drink, and Be Sick," Medical World News 26 (September 1969): 32. On lampreys in the Great Lakes, see: Time: "A Surfeit of Lampreys," 65 (May 9, 1955): 42; "Death for Baby Lampreys," 66 (November 21, 1955): 84; "Victory on the Lakes," 80 (July 13, 1962): 46.

³⁷³ Tom Lehrer, "Pollution," That Was The Year That Was, Reprise 6179, 1965. The real problem in the San Francisco Bay was not just pollution but rampant development. By the end of the sixties one third of the San Francisco Bay had disappeared under landfill, about 257 square miles. Shrimp production had slipped to all time low levels, and all oyster and clam production had ceased. The Bay also serviced 32 garbage disposals and over 80 sewage outfalls. William O. Douglas, "The Corps of Engineers: The Public Be Damned," Playboy (July, 1969). Reprinted in Politics and Environment: A Reader in Ecological Crisis, ed. Walt Anderson, ed. (Pacific Palisades, CA.: Goodyear Publishing, 1970), 276. Not until the 1965 Water Quality Act banned dumping of untreated wastes in rivers or streams did the problem begin to abate. The act also called for federal oversight of standards and federal prosecution of violators. The cost of clean up projects mushroomed exponentially. The 1966 Clean Waters Restoration Act allocated \$3.4 billion through the end of the decade in order to clean up badly polluted areas. The first prosecutions occurred in 1969, when Secretary of the Interior Walter Hickel brought charges for violations against several steel companies, a mining company, and the city of Toledo, Ohio.

³⁷⁴ "Eat, Drink, and Be Sick," Medical World News, 46.

³⁷⁵ Richard Woodbury, "Blighted Great Lakes," Life 67 (August 23, 1969): 32.

³⁷⁶ "Lather Over Detergents," Business Week (February 16, 1963): 104; "New Battle of Suds," Business Week (May 23, 1964): 126; "Less Suds For the Nation's Rivers," U. S. News and World Report 59 (July 12, 1965): 16; "Detergents in Water - Another View," U. S. News and World Report, 55 (August, 1963): X; "Water Pollution," Science 152 (May 20, 1966): editorial page; "Just How Safe Is Your Drinking Water?" U. S. News and World Report 55 (July 15, 1963): 74.

³⁷⁷ "Battle of Omaha Beach," Newsweek 89 (October 7, 1968): 89; "Enzymes in Hot Water," Time 95 (February 16, 1970): 68; "Nader Charges Hazards," C&EN (June 22, 1970): 14. Other activists attacked the industry on different grounds, accusing it of false and misleading advertising. Not only was the solution creating new problems, but it really didn't work all that well to begin with, apparently.

Several studies in 1969 and 1970 proved inconclusive, but the false advertising claims were upheld by an investigation by the Federal Trade Commission.

³⁷⁸ "A Solution Becomes a Problem," Science News 98 (December 26, 1970): 475.

³⁷⁹ Edmund Muskie, "Introduction" to J. Clarence Davis III, The Politics of Pollution (New York: Pegasus, 1970): ix; Linda Hanley, "Ain't No Time to Wonder Why...Whoopie! We're All Gonna Die," The Spectrum 20 (March 13, 1970). Reprinted in Student Voices / One: On Political Action, Culture, and the University, ed. Christopher R. Reaske and Robert F. Wilson, Jr. (New York: Random House, 1971), 82-3. The Spectrum was the student paper at the State University of New York at Buffalo. O'Neill, Coming Apart, 442.

³⁸⁰ The ground war in Vietnam suffered from one major disadvantage. American troops could rarely, if ever, find the enemy. If one could not find the Viet Cong in the jungles then it seemed only reasonable, from a technological standpoint, to use chemicals to destroy the jungles and remove the VC advantage. These efforts began in 1961 and were dubbed Project Ranch Hand, which chose the phrase "Only you can prevent forests" as their sardonic motto. By the end of the decade-long project, Ranch Hand crews applied over 100 million pounds of chemical defoliation agents, commonly referred to by the color of the stripe on the canisters they were shipped in: blue, purple, pink, green, white, and the most notorious, Agent Orange, and destroyed an estimated half of South Vietnam's timberlands. A 1968 report, prepared for U.S. Ambassador to South Vietnam Ellsworth Bunker when he was reconsidering the project, unambiguously stated the military preference for technological solutions. "A key element in US military strategy in the Vietnam war has been the utilization of the unprecedented firepower that modern science, industry and logistics have made possible." Reservations about the project arose immediately, and would continue to mount in the intervening years as "defoliation was approached as a panacea, a technological solution to a human and political problem." Domestically, the Ranch Hand project bridged the antiwar movement to the ecology movement, as concerns about the environmental effects of such measures dovetailed the individual concerns of the two. The most controversial aspect of the program proved to be the use of these herbicides against food crops. Attempts to deprive the Viet Cong of their local support by crippling food production efforts not only failed to affect their fighting ability but, according to Defense Department studies, these efforts probably worked against US interests by turning the South Vietnamese farmers against those who ruined their crops. James S. Olson and Randy Roberts, Where the Domino Fell: America and Vietnam, 1945-1990 (New York: St. Martin's Press, 1991), 112. Composition of the compounds were largely butyl esters 2, 4 D or T. A complete list can be found in Appendix 2 of the official military history of the project: William A. Buckingham Jr., Operation Ranch Hand: The Air Force and Herbicides in Southeast Asia 1961-1971, Office of Air Force History (Washington, DC: Government Printing Office, 1982), 199-201. George C. Herring, America's Longest War: The United States and

Vietnam, 1950-1975 (New York: Alfred A. Knopf, 1986), 151. First edition published in 1979. Msg, JCS to CINCPAC, subj: Restriction on Use of Defoliants and Herbicides, 042341Z, November, 1969, quoted in Buckingham, Operation Ranch Hand, 146. Earl H. Tilfor, Jr., Crosswinds: The Air Force's Setup in Vietnam, 50-51.

Rachel Carson, Silent Spring (Boston: Houghton Mifflin, 1987); Bob Dylan, "Hard Rain A-Gonna Fall"

³⁸¹ "The Tankers Messy Wake," Business Week (April 1, 1967): 128; "Battling the Blob," Newsweek 69 (April 3, 1967): 44; "Operation Canute," Time 89 (April 7, 1967): 28; "The Huge Oil Slick, Spreading With Tide and Current," Life 62 (April 14, 1967): 27.

³⁸² "Britain's Great, Ghastly Ooze," Newsweek 69 (April 10, 1967): 48; "The Oily Flotsam," Life (April 14, 1967): 26; "Mopping Up Oily Oceans," Time 90 (July 28, 1967): 68. Two books offer an in-depth look at the crisis: E. Cowan, Oil and Water The Torrey Canyon Disaster (Philadelphia: Lippencott, 1968); R. Petrow, In the Wake of the Torrey Canyon (New York: D. McKay, 1968).

³⁸³ Ross McDonald, "Life With the Blob," Sports Illustrated (April 21, 1969) 129. Reprinted in: Anderson, Politics and Environment, 123-132. McDonald would comment in 1972 that the blowout "triggered a social movement and helped create a new politics, the politics of ecology, which is likely to exert a decisive influence on future elections and on our lives." Quoted in Edward P. Morgan, The 60s Experience: Hard Lessons about Modern America (Philadelphia: Temple University Press, 1991), 232. The yellow color was caused by large amounts of natural gas released in the early days of the blowout. These were mixed with the familiar black of crude oil. See also: "Environment: Tragedy in Oil," Time 93 (February 14, 1969): 23; "A California Oil Strike Nobody Wanted," Life 66 (February 14, 1969): 30; "Great Blob," Newsweek 73 (February 17, 1969): 31; "The Dead Channel," Time 93 (February 21, 1969): 21; "The Great Oil Slick," Life 66 (February 21, 1969): 58. Carol E. and John Steinhart, Blowout, A Case Study of the Santa Barbara Oil Spill (North Scituate, MA: Duxbury Press, 1972); Robert Easton, Black Tide: The Santa Barbara Oil Spill and Its Consequences (New York: Delacorte Press, 1972).

³⁸⁴ Dr. Norman K. Sanders, quoted in McDonald, "Life With the Blob," 130

³⁸⁵ "Environment: The Cities, The Price of Optimism," Time 94 (August 1, 1969): 41. The fire destroyed several small boats and "nearly destroyed" two railroad bridges. Stewart L. Udall, "Can We Save Our Sick Great Lakes?" True, (August, 1969). Reprinted in: Anderson, Politics and Environment, 109-117. The Bible has a Dead Sea and The Book of Revelation speaks of a "lake of fire," but a flaming river and lifeless lake seemed close enough.

³⁸⁶ The Doors, "The End" The Doors.

³⁸⁷ Murray Bookchin, Remaking Society: Pathways to a Green Future (Boston: South End Press, 1990). Robert Disch, "Preface," and Barry Commoner, "The Ecological Facts of Life," The Ecological Conscience: Values for Survival, ed. Robert Disch (Englewood Cliffs, NJ: Prentice-Hall, 1970), xiii, 2. Commoner's

background paper was prepared for the 13th National Conference of the U. S. National Commission for UNESCO, November, 1969.

³⁸⁸ Rachel Carson, Silent Spring (Boston: Houghton Mifflin, 1987): Paul Brooks, "Forward," xiii, original publication date, 1962. Rachel Carson, Under the Sea Wind (New York: Simon & Schuster, 1941); The Sea Around Us, (New York: Oxford University Press, 1951), 3; Silent Spring. Carson refers to the sea as "that great mother of life," an image the ecology movement would also trade heavily on, particularly the ecofeminist ideal. It should also be noted, as Lear extensively details in her biography of Carson, that she was extremely savvy about both the publishing industry and public relations. The serialization of Silent Spring in The New Yorker generated intense controversy about the work well in advance of its actual publication. Linda Lear, Rachel Carson: Witness For Nature (New York: Henry Holt, 1997).

³⁸⁹ William Vogt, Natural History (January, 1963): 72-3. Not all reviews were so favorable, see C&EN (October, 1, 1962): 2250.

³⁹⁰ "Preface," Radical Environmentalism: Philosophy and Tactics, ed. Peter C. List (Belmont CA: Wadsworth Publishing Company, 1993), vii; Christian Century 79 (December 19, 1962): 220. Another contemporary analysis states: "The book's accessibility and the popularity of its author make it a much more visible and influential book than any to have preceded it in the environmental movement. Key authors who antedated Carson - such as John Muir and Aldo Leopold - did not really gain a wide readership until after the publication of Silent Spring." M. Jimmie Killingworth and Jacqueline S. Palmer, "Millennial Ecology: The Apocalyptic Narrative from Silent Spring to Global Warming," in Green Culture: Environmental Rhetoric in Contemporary America, ed. Carl G. Herndl and Stuart C. Brown (Madison: University of Wisconsin Press, 1996), 27. The ABC-CLIO Companion to The Environmental Movement states that Carson's Silent Spring "is responsible for the modern environmental movement," what I describe as the transformation from environmentalism to ecology. Mark Grossman, The Environmental Movement (Santa Barbara: ABC-CLIO, 1994), 42. "Death/Life" from Paul Brooks, xiii.

³⁹¹ Carson, Spring, 7.

³⁹² "Senseless" Carson, quoted by Brooks, Spring, xiii

³⁹³ Ibid., 9 & 7.

³⁹⁴ Ibid., 6. This was a real break at a time when much of the popular science writings and films were either thinly concealed propaganda for some particular pet technological project, or directly underwritten by a vested interest. That is not to say that such efforts presented second-rate science - far from it. Science and technology symbolized modernity in postwar America, and popular scientific expression sought to inform the public about the new and wonderful products that science and technology developed and delivered for mass purchase and consumption. Heavily financially committed to the new technological world, these works rarely spoke of social choices, opting to sell science and technology on enthusiastic terms, and seeking to educate not evaluate. In several manners, it was

the medium of enthusiasm, and Encyclopedia Britannica in particular made the fifties and early sixties a golden age for the educational film. The première science film series was Bell Science, underwritten by Bell Telephone and written, produced and directed by no less an interpreter and definer of American values than Frank Capra. Dr. Frank Baxter served as narrator and teacher in the 1958 Hemo the Magnificent and the 1956 Our Mister Sun, which also featured a very excitable Eddie Albert. Re-released in 1991 by Rhino Home Video, the covers assure the purchaser that the "fascinating program" is "still used in classrooms today." The classic piece of sheer propaganda, done with finesse and style, is the Disney production Our Friend the Atom which, though cute and peppy, proved insufficient to counter the residual fear left by Bert the Turtle. Our Friend the Atom sees little current use.

³⁹⁵ Commoner, "The Ecological Crisis,"

³⁹⁶ Carson, Spring, 8.

³⁹⁷ Peter C. van Wyck, Primitives in the Wilderness: Deep Ecology and the Missing Human Subject (Albany: State University of New York Press, 1997), 20.

³⁹⁸ Carson, Spring, 8 & 6.

³⁹⁹ *Ibid.*, 15. J. F. Rothermel, "Rachel Carson's Silent Spring Is Too Emotional," Birmingham News (October 21, 1962). Quoted in Lear, Rachel Carson, 428.

⁴⁰⁰ The Economist, (February 23, 1962). R. C. Cowen, Christian Science Monitor (September 27, 1962): 11. Rodrick Frazier Nash, "The Gospel of Ecology, 1962-1972" in American Environmentalism: Readings in Conservation History, ed. Rodrick Frazier Nash (New York: McGraw-Hill, 1976), 188.

⁴⁰¹ Killingworth and Palmer, "Millennial Ecology" in Green Culture, 22.

⁴⁰² Dr. Paul R. Ehrlich, The Population Bomb (New York: Ballantine 1968). The first printing occurred in May of 1968, second and third printings in August, a fourth in January of 1969, and a fifth in March of that year.

⁴⁰³ *Ibid.*, cover.

⁴⁰⁴ *Ibid.*

⁴⁰⁵ *Ibid.*, "Prologue," 11.

⁴⁰⁶ *Ibid.*, 15-16. Ehrlich noted that, moving slowly through a crowd that had "a hellish aspect," he and his party of three "were, frankly, frightened."

⁴⁰⁷ *Ibid.*, 15, 32-35.

⁴⁰⁸ *Ibid.*

⁴⁰⁹ *Ibid.*, 81.

⁴¹⁰ *Ibid.*, 185 - 191. Professors were "urged to help pave the way for the momentous changes that are certain to rock society and the medieval structure of the institution." Ehrlich foresaw "new methods of teaching are in most cases going to replace the 50-minute lecture." Moreover, "patchwork departmental structures are going to go, as will much of today's emphasis on tests and grading."

⁴¹¹ "Modern man in the late twentieth century is probably close to his zenith in quality of life attainable through existing social institutions." Environmental Quality

and Society, ed. Richard A. Tybout (Columbus: Ohio State University Press, 1975), 1. Pinchot, Breaking New Ground (New York: Harcourt, Brace & World, 1947).

⁴¹² Kenneth Boulding, The Environmental Crisis (New Haven, CT: Yale University Press, 1970).

⁴¹³ See also: C. C. Delwiche, "Limitations on Food Production," The Grand Canyon Symposium, 1970. Selected papers in Environment, Man, Survival, ed. L. H. Wullstein, I. B. McNulty, L. Klikoff (Salt Lake City: Department of Biology, University of Utah, 1971), 54 - 74.

⁴¹⁴ "They cut down the trees and put them in a tree museum / and they charge the people a dollar and a half just to see 'em / Don't it always seem to go / that you don't know what you've got till its gone." Joni Mitchell, "Big Yellow Taxi," The Neighborhood, Big Tree 102, 1970. The single by the Neighborhood peaked at the number twenty-nine position in August of 1970.

⁴¹⁵ Earth Day - The Beginning: A Guide for Survival, compiled and edited by the National Staff of Environmental Action (New York: Bantam Books, 1970). Published in May, one month after the first Earth Day, the book was dedicated "to the tree from which this book is made." One example of the general tone of reverence with which Earth Day has been described in recent environmental history. "Thus, by the late 1960s the third wave of conservationism had evolved into modern environmentalism, with the transformation formalized by the national celebration of Earth Day 1970. With its 20 million participants, Earth Day not only marked the replacement of conservation with the full panoply of environmental issues but it mobilized (albeit temporarily) a far broader base of support than had any of the prior waves of conservationism." R. E. Dunlap and A. G. Mertig, "The Evolution of the U. S. Environmental Movement from 1970 to 1990: An Overview," American Environmentalism: The U. S. Environmental Movement, 1970-1990, eds., Riley E. Dunlap and Angela G. Mertig (Philadelphia: Taylor & Francis, 1992), 2. R. Cahn and P. Cahn, "Did Earth Day Change the World?" Environment (September, 1990): 36-43. A detailed analysis of the student involvement can be found in: R. E. Dunlap and R. P. Gale, "Politics and Ecology: A Political Profile of Student Ecoactivists," Youth and Society, 3 (1972): 379-397.

⁴¹⁶ "Ecology: 'Earth Day'" Newsweek, 75 (April 13, 1970): 25; Robert Manning, "Editorial," The Atlantic 225 (April, 1970): 3. The Atlantic was truly a vanguard publication for the ecology movement, publishing more than forty articles in the previous nine years. The Atlantic, it should be noted, had also been a vanguard publication of the precursor environmental and conservation movements during the Progressive Era and after.

⁴¹⁷ The ecology symbol was a thickly drawn oval with a line through the center. It was intended to symbolize the earth, but it really looked more like a soybean. Figures for Environmental Action's literature distribution from Earth Day - The Beginning. Newsweek predicted that 1,000 colleges, 6,000 schools and 10,000 vaguely defined "educational institutions" would participate, and later confirmed actual participation by 2,000 colleges, 2,000 communities and 10,000 schools in

"the biggest street festival since the Japanese surrender in 1945." Time set participation figures at 1,500 colleges and 10,000 schools in both of its articles, which described the festival as "a secular, almost pagan holiday." "Earth Day," Newsweek and "A Giant Step - Or a Springtime Skip?" Newsweek 75 (May 4, 1970): 26; "Environment: The Dawning of Earth Day," Time 95 (April 27, 1970): 46; "A Memento Mori to the Earth," Time 95 (May 4, 1970): 16.

⁴¹⁸ Roller skates were advocated as a personal transportation solution and, due to technological advances in materials and design, they have somewhat succeeded. At the least, they're doing better than pogo sticks. Who were the first marchers under the banner of ecology? One source describes them as: "zoologists, poets, engineers, mystics, public-health nurses, 'flower children,' economists, bureaucrats, farmers, homemakers, demographers, professors, and students. Especially students. Like a patriotic surge, the movement swept across boundaries of age, sex, intellect, and social class. The young were the shock troops." Victor B. Scheffer, The Shaping of Environmentalism in America (Seattle: University of Washington Press, 1991), 7.

⁴¹⁹ "Earth Day," Newsweek and "Dawning of Earth Day," Time.

⁴²⁰ "Ibid. "A Giant Step - Or a Springtime Skip?" Newsweek 75 (May 4, 1970): 26; "Environment: The Dawning of Earth Day," Time 95 (April 27, 1970): 46; "A Memento Mori to the Earth," Time 95 (May 4, 1970): 16. "Garbage in New York," Sante, Low Life.

⁴²¹ Notable for their opposition to Earth Day were the Daughters of the American Revolution, one of whose members declared at their national meeting that the celebration was nothing less than a plot of "Subversive elements [who] plan to make American Children live in an environment that is good for them." A Southern Republican spent \$1,600 sending out telegrams pointing out that Earth Day suspiciously fell directly on Lenin's birthday. Rennie Davis gave a speech entitled, "Up Agnew Country" at the Sylvan Theater in Washington, D.C. on April 22. This location was one of the prime Earth Day rally sites. Davis' remarks in retrospect seem little more cogent than the DAR: "We make only one exception to our pollution stand - everyone should light up a joint and get stoned." He no doubt was cheered. Davis, Earth Day - The Beginning, 87. Fellow Chicago 7 alumnus, Abby Hoffman, was also heavily involved in the environmental movement in New York during the years he lived as a fugitive in the seventies and eighties while Tom Hayden (Mr. Jane Fonda) sponsored and supported landmark environmental legislation while a member of the California legislature.

⁴²² In April of 1970, a Time article focused on the Corps Florida canal project, and the Atlantic featured an attack on the Corps as its cover story. William O. Douglas, "The Corps of Engineers: The Public Be Damned," Playboy, (July, 1969). Reprinted in Politics and Environment, Anderson, 268-284. Rep. Richard L. Ottinger, (D-NY) "Political Pollution" Sarah Lawrence College, Bronxville, NY April 22. John H. Chafee, Secretary of the Navy, at the University of Rhode Island, Kingston, RI on April 22, Earth Day - The Beginning 116. Attacks on the Corps

included not only Douglas's condemnation of their "specialty in pork barrel legislation" and status as a "sacred cow," but also negative assessments of the Cross-Florida Barge Canal, which was attacked not only on grounds of polluting groundwater and changing ecosystems - particularly in the basin of the Oklawaha river, where Time noted that Florida placed "economics before ecology" - but which also questioned the Corps' basic economic savvy in the first place, claiming that the canal locks were incapable of handling a profitable level of traffic. This was a problem noted with other Corps projects as well, where the payoff did not offset the initial cost, much less the damage. Noted ecologist Barry Commoner praised the Florida activists who were "challenging the Corps' cost/benefit analysis: It's a precedent setting attack" he declared. "Environment: Cloudy Sunshine State," Time 95 (April 13, 1970): 48. A longer critique of the Corps' methods and rationales can be found in: Elizabeth B. Drew, "Dam Outrage: The Story of the Army Engineers," Atlantic 225 (April, 1970): 51-61. The canal was not the only ecological fight in 1970 in Florida. Other points of contention included the successful blocking of a new airport in the Everglades, and unsuccessful efforts to block the Turkey Point nuclear power plants and Disney's City of Tomorrow (Epcot Center) in Orlando, where the technological enthusiasm and utopianism of the Disney developers ran headlong into a future of limits and scarcity, though activists in Florida found Disney to be at least as formidable as the Army.

⁴²³ Donald A. Jensen, "Ideas from Ford" at the University of Southern California on April 22, in Earth Day - The Beginning, 161. Jensen was a member of the air pollution board of the Ford Motor Company.

⁴²⁴ Walter P. Reuther at the United Auto Workers convention in Atlantic City NJ. in Earth Day - The Beginning, 262-263. Reuther was the founder and past president of the UAW.

⁴²⁵ Washington Post, (April 23, 1970): 133.

⁴²⁶ Andrew Gargling at Bryant Park, New York City on April 22, in Earth Day - The Beginning, 85. Gargling was the northeast coordinator of Environmental Action. Ramparts "Ecology Issue," (May 1970). Used as an ad slug in national subscription campaign, The New Republic 162 (April 18, 1970): 3.

⁴²⁷ John W. Gofman and Arthur R. Tamplin, "The AEC: Can We Survive the Peaceful Atom?" at the University of Minnesota, Duluth campus on April 22, in Earth Day - The Beginning, 121.

⁴²⁸ Sen. Walter F. Mondale (D-MN), "Commitment to Survival," at the University of Minnesota, Twin Cities campus, on April 22, in Earth Day - The Beginning, 43.

⁴²⁹ Joseph Shapiro, "Imperialism," at Fordham University, New York City on April 22 in Earth Day - The Beginning, 86. Shapiro was an associate professor of physics at Fordham.

⁴³⁰ Dennis Hays at the Sylvan Theater, Washington, D.C., on April 22, in Earth Day - The Beginning, iii.

⁴³¹ Harriet Miller, "Getting Oil Out" at San Fernando Valley State College, Los Angeles, on April 22 in Earth Day - The Beginning, 77. Miller was a member of the board of GOO - Get Oil Out, a Santa Barbara group.

⁴³² Ron Linton, "Paying the Price," at Hunter College, New York City on April 23, in Earth Day - The Beginning, 147-148. Linton was president of Linton, Miels and Coston, Inc., a group of environmental consultants.

⁴³³ Sen. Vance Hartke (D-IN) "Technology on the Loose" at Concordia Senior College, Fort Wayne, Indiana on April 22, in Earth Day - The Beginning, 134-136.

⁴³⁴ George Wald, "Environmental Traps," Earth Day - The Beginning, 79-84.

⁴³⁵ Ibid.

⁴³⁶ Kenneth E. F. Watt, "Whole Earth," at Swathmore College, April 19, in Earth Day - The Beginning, 5-25. Watt was an ecologist and professor of zoology at University of California, Davis.

⁴³⁷ Barbara Reid, "Roots of Crisis," a speech delivered outside of the annual General Electric Stockholder's meeting in Minneapolis, April 22, in Earth Day - The Beginning, 146. Reed was Midwest coordinator for Environmental Action.

⁴³⁸ Wald, "Environmental Traps."

⁴³⁹ Adlai E. Stevenson III, "Too Little, Too Late," at Western Illinois University, Macomb IL, April 22, in Earth Day - The Beginning, 51-56. Stevenson was Treasurer of the State of Illinois.

⁴⁴⁰ Alan Gussow, "The Future is Circular," at Bryant Park, New York City on April 22, in Earth Day - The Beginning, 3-4. Gussow was an artist and a conservationist. Ray Mungo, "If Mr. Thoreau Calls, Tell Him I've Left the Country," The Atlantic 225 (May, 1970), 73-75. The article is a moving tribute to the depths of the ecological problem, in which Mungo attempted to retrace Thoreau's historic canoe trip down the Concord and Merrimack Rivers in Massachusetts and New Hampshire. Mungo, a co-founder of the leftist Liberation News Service, was one of the "first of the radical student leaders to 'drop out' of the Movement . . . to find a more meaningful style of life" in rural subsistence communes."

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