

“Fulfilling the Sacred Potential of Technology”

New Edge Technophilia, Consumerism and Spirituality in Silicon Valley

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Introduction

The New Age movement was one of the outcomes of the process of religious redefinition initiated by “countercultural” spiritual seekers in the 1960s and 70s in Northern Europe, Australia and Northern America.¹ The manifestations of New Age differ somewhat between regions,² yet, as Wouter Hanegraaff shows: “what connected adherents of the New Age is the sharing of several worldviews and techniques all aimed to realize the ‘New Age’, or a New World whether through an apocalypse, or in the here and now.”³ As such, the New Age is culture-critical spiritual movement that ultimately seeks the overthrow of the cultural system of the mainstream. Two prime ways in which this culture-criticism manifests itself are in the rejection of consumerist values and in an emphasis on the use of “natural means” for realizing the New Age.⁴

When we focus on this culture-criticism, the New Age movement in Northern California presents us with a puzzling situation: it is characterized by discourses of “naturalness” and anti-consumerism, but it was decisively shaped in intimate relationship with the computer industries of “Silicon Valley”--the Santa Clara Valley, on the San Francisco Peninsula. One indication of the entwinement of New Age with the high tech industries of this area is the fact that in the late 1980s cultural actors in this area launched the term *New Edge* to refer to their brand of New Age spirituality. This term express the belief that the New Age will be realized through the “cutting

edge” technologies and sciences pioneered in Silicon Valley.⁵ In this chapter, I will ask how Northern Californian New Edgers reconcile their embrace of naturalness and their anticonsumerist ideals with their enthusiasm for the products pioneered by the technology industries of Silicon Valley.

The New Edge spiritual embrace of computer science and technology implies defining the nature of the sacred and the nature of computer technology in relation to each other. This means, in the first place, that these technologies are constituted as natural and as giving sacred perception. Second, it involves a reflexive stance that imagines the sacredness of computer technology in terms of its “potential”: this makes it possible to critique the corporate system in which computer technologies are created while holding onto the ideal that these technologies are in and of themselves capable of transcending the cultural system of the mainstream. As such, the New Edge is engaged in a struggle over the definition of the nature of the “things” that are produced by the Silicon Valley industries: while defining computer technologies as sacred technologies, the New Edge is at times opposed to the conventional treatment by corporate industries of computer technologies as consumer products. At other times, however, the New Edge imagines the sacred potential of computer technologies in surprising harmony with the consumerist ethos of the Silicon Valley industries. The aim of this chapter is to gain insight into the circumstances in which New Edge forges relationships between the sacred and the corporate, the materialistic and the spiritual.

In the following account of the entwinement between New Edge and the Silicon Valley computer industries, I support the insight produced by a wide variety of scholars in the past few decades that--contrary to the way in which processes of secularization have conventionally been understood and described--neither religion and technology, nor religion and technological

consumerism intrinsically exclude one another.⁶ A study of the New Edge shows how technologies of mediation are presupposed in experiences of the sacred and how certain forms of spirituality can be well at home in consumerist and technological environments. An ethnographic study of New Edge is, furthermore, a study of how a religious imaginary and practices are implied in the creation and use of certain artifacts and of how the choice of particular technical artifacts in turn shapes a religious imaginary and practices. The following account of the New Edge, in other words, discusses religion as part of a *technological system*, defined by the anthropologist Marcel Mauss as a “total social phenomenon that marries the material, the social and the symbolic in a complex web of associations.”⁷ This definition of a technological system a priori acknowledges that the sacred, the material, and the social continuously shape each other. It defies any deterministic conceptualization of either “technology” or “religion” as phenomena with fixed properties.

In this sense, the discussion of the New Edge breaks with earlier academic reflections on the religious correlates of digital technology. In the early 1990s, various scholars theorized the Internet as a technology with intrinsic religious characteristics. Examples can be found in Michael Benedikt’s collection *Cyberspace First Steps*, in which he describes cyberspace as the latest stage in an evolutionary movement from matter to spirit, with “the ballast of materiality cast away --cast away . . . perhaps finally.”⁸ Such characterizations are quite close to New Edge conceptualizations of the Internet: in 1994, the former Harvard psychologist and “psychedelic explorer” Timothy Leary argued that the “electronic-digital” domain of the Internet is inherently spiritual because of its “mythic, magical, ethereal, incorporeal, intangible, nonmaterial, disembodied, ideal, platonic” attributes.⁹ Such understandings are technologically deterministic in the sense that they treat the Internet as a technology with intrinsic characteristics that have an

impact on social and cultural life in a definite way.¹⁰ As such, these understandings disguise the way in which technological artifacts such as the Internet are socially and culturally constructed as spiritual. They also conceal the way in which the religious experiences generated by the “immaterial realm” of the digital are still dependent on the specific materiality of digital technologies, as shaped in a specific historical context. In more recent years, some of the so-called “first-generation” scholars of “cyber-religion” have exchanged their religious depictions of the Internet for more dystopian and secular versions.¹¹ Yet, ethnographic accounts of high-tech spirituality that bring spiritual interpretations of digital technology into perspective as being constituted within a historically, socially and culturally contingent network of people, institutions, discourses and practices, are still relatively scarce. In this chapter, then, I will discuss the New Edge as a historically emergent, locally produced set of discourses and practices by identifiable networks of people, institutes and events in the San Francisco Bay Area.

In his book on the New Age published in 1996, Hanegraaff dubs the New Edge, in a footnote, a “recent development.”¹² Yet, as I will show, historical and ethnographic research suggests that the origins of this development can be traced back to at least the late 1960s. Since this period, spiritual seekers in Northern California who adhere to New Age doctrines and epistemologies have sought to create sacred spaces and moments of divine awareness by embracing technologies pioneered and mass-marketed by research centers and corporations in this area. In this chapter, I use the term *New Edge* to refer to this long-term relationship between New Age spirituality and “high tech.” I base this account of the New Edge on a nine-month period of fieldwork conducted in 2005 and 2006 in the San Francisco Bay Area, on archival research, on network analysis, on a close analysis of “New Edge texts” and on other histories of the relationship between Silicon Valley and the “counterculture” in general.¹³

New Edge and New Age

In the San Francisco Bay Area, New Edge discourses and practices can be found within several overlapping networks of people and institutions.¹⁴ Stretching across at least three generations, these networks trace their roots back to the Californian countercultural movements of the 1960s and 1970s and still consider themselves decidedly countercultural. One of these networks comprises San Francisco's contemporary self-described "psychedelic community." Members of this community prefer to refer to psychedelic drugs as "entheogens"--a term that expresses the notion that psychedelic drugs "bring out the divine within."¹⁵ For this reason, the community also refers to itself as the "entheogenic community." The entheogenic community has clear genealogical lines with what was referred to as San Francisco's "rave movement" in the 1990s, consisting of various "tribes" or "rave collectives" that organized all-night parties during which electronic music, "mind-altering" drugs such as XTC, and computer animations served to create all-immersive environments. Whereas not all of these "tribes" characterized themselves as "religious" or "spiritual," a few of them explicitly profiled their rave activities in such terms and have continued to do so.¹⁶

Overlapping with the entheogenic community and the rave movement is the "cyberpunk movement," which took shape in the Bay Area in the mid-1980s. Cyberpunk is a genre of science fiction that emerged in response to the rise of global computer information networks and was pioneered by the writers William Gibson, Rudy Rucker, Vernor Vinge, John Shirley, and Robert Anton Wilson. In contrast to older forms of science fiction and various contemporary genres, cyberpunk stories are situated in the near rather than a distant future. Furthermore,

whereas older forms of science fiction center on large space ships and robots, cyberpunk focuses on networked or small-scale and prosthetic information technologies.¹⁷ A theme that typically characterizes cyberpunk fiction is the way that information technologies – whether injected in the body or immersing bodies as information networks – “enhance” humans in ways that transform them into a new kind of species. When we trace even further back the networks in which the New Edge discourse has emerged, we come across various cultural “movements” that explored psychedelics, alternative kinds of spirituality, and politics in the 1960s and 1970s.

Starting in the 1960s, artists, journalists, computer engineers, computer scientists and scholars affiliated with these overlapping countercultural movements have prefigured the contemporary New Edge. Through magazines, manifestos, novels, websites, mailinglists, conferences and events, they have expressed their understanding of the potential of information technology. In it, we can recognize the basic composites of New Age thought. As I will show, this understanding imbues information technologies with the capacity to connect people to a sacred reality that is otherwise deeply hidden inside the self and in the wider universe. In “reconnecting” people with this sacred reality, information technologies are seen as capable of realizing “natural” and “authentic” ways of being.¹⁸ This understanding of information technology resonates with two basic premises of New Age: gnosticism and holism.

Gnostic epistemology, as various scholars have pointed out, presupposes the idea that true reality--the sacred order of the universe--can only be known through experience. For New Ager, Hanegraaff emphasizes:

truth can only be found by personal, inner revelation, insight or “enlightenment”.

Truth can only be personally experienced: in contrast with the knowledge of *reason* or

faith, it is in principle not generally accessible. This “inner knowing” cannot be transmitted by discursive language (this would reduce it to rational knowledge). Nor can it be the subject of *faith* because there is in the last resort no other authority than personal, inner experience.¹⁹

Second, in the treatment of technology as gnostic, we can discern the New Age holistic worldview, which is rooted in a rejection of the “dogmatic rationality and dualism” of Western culture. According to the New Age worldview, this dogmatic dualism—apparent in the Christian separation of man and nature, mind and body, spirit and matter--“brainwashes” and indoctrinates people into seeing reality in restrictive ways.²⁰ The central aim of New Agers is, therefore, to restore an authentic awareness of the holistic nature of reality by making people aware of the interconnection between their own selves and other people, nature and God.²¹ The holistic idea that the self and God are intrinsically connected exhibits, furthermore, the New Age worldview in which the self is considered divine. As Paul Heelas phrases this New Age idea of “self-spirituality”: “to experience the ‘Self’ itself is to experience ‘God’.”²²

New Agers world-wide enact and affirm the gnostic, holistic and self-spiritual worldview through practices such as meditation, yoga, or dance. In addition, particularly in Northern California, New Age beliefs have been enacted through engagement with information technology. A New Age worldview has thereby been modified into a New Edge worldview, as some self-consciously refer to it. In what follows, I will present a brief chronology of the way in which certain technologies have been constituted as “gnostic” by Northern Californian New Edgers. I start with the New Edge embrace of electric technologies by the “Merry Pranksters” in the 1960s. Then I move to the New Edge use of electric and digital biofeedback technologies by

countercultural computer advocates in the early to mid-1970s. Finally I discuss the New Edge embrace of Virtual Reality and Virtual Worlds technologies in the 1980s and 1990s.

Bypassing the Reducing Valve: The Technological Way to Gnosis in the 1960s

During my research in Silicon Valley in 2005, I regularly met with Bruce Damer, someone whose worldview I came to characterize as New Edge. Damer is an engineer at NASA and speaks regularly at conferences organized by the entheogenic community of Northern California. During these conferences, as well as in interviews with me, Damer is continuously developing a vision of a future empowered by science and technology in which the universe will achieve a higher level of consciousness.

Damer is quite reflective about his own position in a historical line of other high-tech spiritual pioneers, particularly the “Merry Pranksters.” In *The Electric Kool-Aid Acid Tests* (1968)²³, the American novelist and journalist Tom Wolfe documented the activities of the Pranksters. Wolfe based his novel largely on writings, film footage, and audio tapes produced by the Pranksters themselves. One important story line in this documentation is a cross-country bus ride from San Francisco to New York undertaken by the Pranksters in 1964, in their bus called “Furthur.” Damer, in possession of the Pranksters’s video tapes of this bus ride, is also the proud owner of a replica of their bus, which sits in the garden of his farm and which he has--referring to its mechanical defects--named “No Furthur.” This identification of a contemporary New Edger with the Merry Pranksters induced me to explore the Pranksters’ approach to technology.

As Wolfe documents, the Pranksters had gathered around the novelist Ken Kesey. In the late 1950s, when LSD had not yet been criminalized, Kesey had volunteered for LSD

experiments conducted by a mental health clinic in Menlo Park. His acid trips, in combination with his work as a night watchman at the Menlo Park clinic, inspired him to write *One Flew Over the Cuckoo's Nest* (1962). The book was so successful that in 1962, after Kesey and others were evicted from where they had been living, on Perry Lane in Palo Alto, he could afford to buy a cottage in the town of La Honda, in the Santa Cruz Mountains to the west of Palo Alto. A group of around 20 other “acid-heads” came to live with him there. Together, they formed the group the Merry Pranksters.

At La Honda, the Pranksters continued what they referred to as their LSD “experiments” or “acid tests.” One of the things they “tested” was their view of reality. Through the use of psychedelic drugs, the Pranksters discovered what was to become one of the key ideas of the New Age: “with these drugs your perception is altered enough that you find yourself looking out of completely strange eyeholes. All of us have a great deal of our minds locked shut. We’re shut off from our own world. And these drugs seem to be the key to open these locked doors.”²⁴

The Pranksters framed this insight in terms laid out by the novelist Aldous Huxley in *The Doors of Perception* (1954), in which Huxley writes about his experiences with the drug mescaline. Huxley writes: “The function of the brain and nervous system and sense organs is in the main *eliminative* and not productive. Each person is at each moment capable of remembering all that has ever happened to him and of perceiving everything that is happening everywhere in the universe. . . . According to such a theory, each one of us is potentially Mind at Large.”²⁵ Huxley defines the human brain and nervous system as a “reducing valve,” which allows only a “measly trickle” of consciousness. This “reduced awareness” is taken by most people to be the one and only reality, because humans have invented elaborate “symbol-systems and implicit philosophies, which we call languages” to “formulate and express the contents of this reduced

awareness.” This language “tricks” and “bedevils” people into believing that this “reduced awareness is the only awareness” and that words are “actual things.”²⁶ For Huxley, self-transcending experiences such as mescaline-induced ones make people conscious of the “totality of reality . . . of the Mind at Large.” For him, this awareness is most clearly religious in nature, because what it reveals is “the glory, the infinite value and meaningfulness of naked existence, of the given, unconceptualized event. In the final stage of ego-lessness there is an ‘obscure knowledge’ that All is in all--that All is actually each.”²⁷ This experience, for Huxley, entails true salvation, since it delivers one from “the world of selves, of time, of moral judgments and utilitarian considerations, . . . of self-assertion, of cocksureness, of over-valued words, and idolatrously worshipped notions.”²⁸ Instead, an “inner world [that is] self-evidently infinite and holy” can be discovered.²⁹

As Wolfe reports, the Pranksters took such spiritual cosmologies to heart. During their LSD trips, they reported a “bottled-up God inside . . . that is whole, all-feeling, complete and out front.”³⁰ They also experienced that they were one with a supreme, awe-inspiring divine reality that governs all and that, they imagined, formed the essence of all world-religions: “Gradually the Prankster attitude began to involve the main things religious mystics have always felt, things common to Hindus, Buddhists, Christians, and for that matter Theosophists and even flying-saucer cultists. Namely, the experience of an Other World, a higher level of reality. And a perception of the cosmic unity of this higher level.”³¹

A Cybernetic Ecology

Electric technologies played a major role in Prankster practices aimed at restoring connection with the divine and experiencing “cosmic unity.” They used electric technologies to overcome the “faulty body interface.” One of the Prankster dreams was, for example, to build a high-tech geodesic dome:

A geodesic dome on top of a cylindrical shaft. It would look like a great mushroom. Many levels. People would climb a stairway up to the cylinder . . . and the dome would have a great foam rubber floor they could lie down on. Sunk down in the foam rubber, below floor level, would be movie projectors, video-tape projectors, light projectors. All over the place, up in the dome, everywhere, would be speakers, microphones, tape machines, live, replay, variable lag. People could take LSD or speed or smoke grass and lie back and experience what they would, enclosed and submerged in a planet of lights and sounds such as the universe never knew. [It would be] a fourth dimension.³²

The dome was realized at the “acid tests.” By immersing themselves in interactive environments with cameras, sound recorders, and stroboscopes, the Pranksters sought to create direct feedback loops between inner signals and outer ones, in complete synchronization, thus bypassing the impulses of the physical body and creating a full experience of “a higher level of reality . . . in the supreme now . . . of cosmic unity.”³³

According to Wolfe, the Pranksters modeled their imagination of technological salvation on Arthur C. Clarke’s science fiction novel *Childhood’s End* (1953). In this book, Clarke describes the so-called “Breakthrough Generation” of “the Children of the Earth [who] ultimately rise from their bodies, and set out for the stars.” The children of the Breakthrough

Generation are born on Earth, but already as infants show “powers of mind far beyond their parents.”³⁴ While still living on Earth, the children had formed their own colony from where they eventually “return” to the stars to become part of the Overmind. The Pranksters identified with this Breakthrough Generation, in part because Clarke’s story resonated with their own sense of being at the leading edge of a “mind-powered,” spiritual evolution. Yet, another reason for their identification resides in the fact that the story of the Breakthrough Generation was framed as a science-fiction story, rife with extremely fast and powerful machines (spaceships), capable of breaking through time into the future. This framing seamlessly fitted the Pranksters’ postwar generation—in particular, its enthusiastic embrace of the fast, powerful technologies that contributed to the wealth of postwar America and that provided a way of “breaking free” from the older generation. As Wolfe writes:

It was very Heaven to be the first wave of the most extraordinary kids in the history of the world--only 15,16, 17 years old, dressed in the haut couture of pink Oxford shirts, sharp pants, snaky half-inch belts, fast shoes--with all this Straight-6 and V-8 power underneath and all this neon glamour overhead, which somehow tied in with the technological superheroics of the jet, TV, atomic subs, ultrasonic-Postwar American suburbs-glorious world! One’s parents remembered the sloughing common order, War & Depression--but Superkids knew only the emotional surge of the great payoff, when nothing was common any longer--The Life! A glorious place, a glorious age, I tell you! A very Neon Renaissance.³⁵

Various historians of the counterculture have pointed out that such technological optimism and utopian expectations of postscarcity and material abundance are major features of the “first phase of the counterculture,” lasting from 1964 until 1968.³⁶ Two stanzas of a poem by the Californian poet Richard Brautigan from 1967 capture this optimistic imagination of a future harmonious relationship between human beings and technology:

I like to think
(right now, please!)
of a cybernetic forest
filled with pines and electronics
where deer stroll peacefully
past computers
as if they were flowers
with spinning blossoms.

I like to think
(it has to be!)
of a cybernetic ecology
where we are free of our labors
and joined back to nature,
returned to our mammal
brothers and sisters,
and all watched over
by machines of loving grace.

-- Richard Brautigan, 1967³⁷

Brautigan's poem communicates a romantic futurism that would continue to characterize New Edge in the following decades: it posits a state of natural and authentic being from which man has fallen and to which he can hope to return through technology.

While the use of technology in spiritual celebration should not necessarily surprise us, a more puzzling element of New Edge is the way its countercultural embrace of technology also implies an embrace of consumerism and hence of the logic of mainstream society. To be sure, the Pranksters were motivated by a desire to break free from mainstream norms and "roles," and from mainstream ways of relating to production and consumption. Yet this did not imply a rejection of consumer items as such. Rather, it entailed a call for *active*, "Do It Yourself," or "participatory" consumerism. It implied a kind of consumerism that "liberated" commodities from imposed conventions about their use. By disconnecting technologies from their mainstream context and by appropriating them in different, creative ways, the Pranksters made them, as they put it, "part of their own fantasy."

The style in which the Pranksters embraced high tech for their own "fantasy" was rather hyperbolic. Kesey, who observed that with all the "superhighways, dreamboat cars, shopping centers, soaring thirty-foot Federal Sign & Signal Company electric supersculptures" suburban America was "*already* there, in Fantasyland."³⁸ The point of much of the Pranksters practices was to stretch this principle as far as they could: for instance, by removing the brakes from the bus, by using microphones and cassette tapes to "wire up" the woods around La Honda and by cutting up the American flag into costumes, the group transformed an already fast and surreal world into something even more fast and surreal. In the words of Wolfe, the Pranksters sought to "juice up the world" to transform it into "what it's already aching to be."³⁹

The general countercultural spirit of the times, inspiring people to aim for a liberation from limiting notions of reality, rang through the Prankster embrace of consumption goods. In accord with those countercultural gnostics who urged people to free themselves from imposed and limiting notions of reality, the Pranksters also treated the technological world as something that has inherently more capacity than they inherently possess. While corporations design technologies in such ways as to fulfill only one specific purpose, in carefully proscribed ways, the Pranksters broke things free from their single-purpose applications and made them “part of their own fantasy.”

Alienation from society, a common theme of the 1960s and 1970s counterculture, was thus not overcome by the Pranksters through a rejection of technology and consumption. Instead, the Pranksters sought to do so through personalization of technology and an active engagement in the process of consumption--by pushing both technology and the human mind “to their limits.” In the process the Pranksters transformed symbols of mainstream power (the American flag; cars and television sets as symbols of post-war affluence) into symbols of their own individual and spiritual power.

The Prankster approach to technology is characterized by two sets of paradoxes. The first paradox relates to the way that the Pranksters negotiate the artificial and the natural through their particular use of high-tech: on the one hand, the Pranksters treat technology as an extension of the human senses and as part of the sacred order of the universe. As such, technology transcends its artificial status. Simultaneously, their embrace of fast technologies as a way of “breaking through” social conditioning is rooted in the notion that such breaking through cannot be established by “natural” means. The second paradox consists of the Pranksters’ celebration of

mainstream American consumerism on the one hand, while operating in an environment that opposes mainstream America on the other.

These two paradoxes are shaped as part of a countercultural imaginary that resists both the mainstream enslavement of commercial and technological forces, as much as the “naïve” rejection of consumption and technology that the Pranksters encountered in the larger countercultural milieu. Wolfe describes one encounter between the Pranksters and followers of psychedelic guru Timothy Leary on the East coast. As the Pranksters came to think of the “Learyites”: “they have turned back into that old ancient New York intellectual thing, ducked back into the romantic past, copped out of the American trip [looking for] another country . . . where it is all better and more philosophic and purer, gadget-free.” The Learyites use “no tapes, video tapes, TV, movies, Hagstrom electric basses, variable lags, American flags, no neon, Buick Electras, mad moonstone-faced Servicecenters, and no manic buses.”⁴⁰ In self-conscious contrast to Leary’s followers, the Pranksters turned technologies into fetishes of the sacred: By breaking them apart from mainstream conventions of use and production, they made them and themselves part of a cosmic, science-fictional, story of salvation.

As historians of the counterculture point out, the optimistic spirit that supported the unabashed celebration of consumption, abundance and technical progress during the “first phase” of the counterculture, was slightly tempered during its second phase. This phase began in the late 1960s and was characterized by the criminalization of LSD, the declaration of the “Death of the Hippie” by the so-called Yippies,⁴¹ the economic recession, the rise to office of the Republican Nixon and the exodus of the “hippies” from the cities into newly formed communes.⁴² Yet, the techno-spirituality that was central to the Pranksters’ life-world, continued to characterize countercultural practices and attitudes in the decades to follow.

In the following discussion of the ways in which technological gnosticism continued in the 1970s and 1980s, I will introduce one more specific characteristic of New Edge discourse about technology: its “hopping” from one “cutting-edge” technology to another. I will argue that this “hopping” sheds light on the way that New Edge negotiates its relationship with mainstream Silicon Valley.

The Portola Institute

In 1968 biology student and journalist Stewart Brand organized one of the biggest “Acid Tests” by the Merry Pranksters ever. Now that he organizes lectures for corporate and intellectual Californians about the future of technology at the *Long Now Foundation*, he takes some distance from his “wild hippie years.” When Brand speaks about his involvement with the counterculture, it is in a critical tone.⁴³ Yet, this tone already characterized him in the early 1970s, when, in an article for *Rolling Stone*, he declared the end of the counterculture and proposed computer engineers as the “heirs of the counterculture.”⁴⁴ In particular, Brand lamented the rejection of technology by the various “back to the land communes” that, according to him, had “no knowledge and understanding of technology.”⁴⁵ He set himself the task of making the counterculture more technology-minded and science-savvy. One of the ways in which he did so was by joining the Portola Institute, founded in Menlo Park in 1966 by engineer Bob Albrecht.

Since its founding, the Portola institute supported all kinds of educational organizations and publications dedicated to “appropriating” cutting-edge technologies for political and spiritual

purposes. Albrecht himself was particularly interested in “bringing computers to the people” and this interest remained the main focus of the Institute in the decades to come. At the time, the popular imagery of computers was rather bad: countercultural youth targeted computer centers as part of their anti-war protests, motivated by the fact that most, if not all, computer research was funded by the Pentagon. For the public at large, computers represented the rise of bureaucracy and the loss of individual control. As journalist Steven Levy put it:

Every time an inaccurate bill arrived at a home, and the recipient’s attempts to set it right wound up in a frustrating round of calls usually leading to an explanation that “the computer did it,” and only herculean human effort could erase the digital blot, the popular contempt toward computers grew.⁴⁶

As a response to such popular contempt, volunteers of the Portola Institute proposed to take a different approach to computer development and use. In an article in a magazine called *People’s Computers*, one engineer for example lamented the tendency of engineers to want to adapt people’s behavior to computer systems. Instead, he argued, people should shape computer systems in such ways that they serve human needs.⁴⁷ Members of the Portola proposed to reorganize the social setting in which technology is developed as a way of making computers more “humane.” The engineer Andrew Clement wrote in *People’s Computers* in 1977:

The social and organizational settings in which micro-computer technology is developed and used will define precedents of some lasting effect. If the work is done in an environment of relaxed and open exchange of information by people in small local

groups that are in close communication with each other, then the results are likely to be more humane than if it is done in a competitive and secretive atmosphere.⁴⁸

A similar call for the humanization of computer technology was made by Theodore Nelson, a regular visitor at Portola. In 1974 Nelson wrote in a self-published manifesto *ComputerLib*:

Computers can be many different things and what they are depends on those who design them. Roughly they are designed by two kinds of people: people who dream (‘lunatics, idealists and dreamers’) or ‘profit-hungry companies and unimaginative clods.’⁴⁹

Computer idealists such as Clement and Nelson envisioned a future in which non-technically trained individuals would not have to depend on engineers for their access to computers. Nelson expressed this vision in an urgent tone by saying: “You can and Must understand computers NOW.” The Portola Institute sought to spread computer-expertise by supporting computer centers and hobby clubs. These environments offered people “hands-on,” “Do It Yourself” practice with computer technology. The slogan that announced the arrival of the People’s Computer magazine captured the spirit of Portola well:

/////////////////<<Illustration Zandbergen 1 about here, next to text below >>/// caption: ///////////////////Fig. 1. Front cover People's Computer Company, Issue 1, October 1972. //////////////////

Computers are mostly
used against people instead of for people
used to control people instead of to free them
time to change all that—

we need a . . .

PEOPLE'S COMPUTER COMPANY

While volunteers at Portola showed awareness that the meaning of computer technology depends on the social context in which it is developed, they were also informed by a rather contradictory understanding of computer technology. They also considered computer technology as having intrinsic spiritual potential. As communicated within the Portola network in a variety of ways, the idea was upheld that if created in the right setting by the right people, the computer will “offer us the first real chance to let the human mind grow to its full potential.”⁵⁰ The ultimate purpose of computer technology was to guarantee the “Wholiness of the human mind.”⁵¹ Portola volunteers thus harbored the paradoxical understanding that computers, on the one hand, acquire meaning in specific social contexts of production and use, while computer technology is also considered to have the teleologically defined goal of attaining New Age salvation.

A periodical that treated technology in a similar paradoxical fashion was the *Whole Earth Catalog*. This Catalog was produced by Stewart Brand on behalf of the Portola Institute from 1968 onwards. The Whole Earth Catalog was a quarterly journal that was especially geared to the various “back-to-the-land” communes.⁵² Its subtitle, *Access to Tools*, reflected its main purpose: To present knowledge, tools and technologies to support a self-reliant and spiritual lifestyle. Addresses of tool-distributors were listed alongside practical advices on how to use the tools. In his statement of purpose published on the first page of the Catalog, Brand wrote:

We are as gods and might as well get good at it.

. . . a realm of intimate, personal power is developing- power of the individual to conduct his own education, find his own inspiration, shape his own environment, and share his adventure with whoever is interested. Tools that aid this process are sought and promoted by the WHOLE EARTH CATALOG.

Among the tools and technologies for self-reliant living discussed in the Catalog were rustic artifacts such as spades, tents and wooden stoves, but also high-tech products such as radios, calculators and computers. This characteristic combination of romanticism and futurism is particularly present in the opening pages of its issues, invariably dedicated to the ideas and inventions of Buckminster Fuller. Fuller was an engineer who was embraced as a visionary by countercultural youth in the 1960s and 1970s. In his writings, many of which have been reprinted in the Catalog, Fuller expressed an understanding that was typical for the gnostic countercultural at large: he felt that humans are born with perfect perceptive capacities, yet that brainwashing by mainstream culture and society invariably hampers these capacities. Or, as he put it in his own intricate language:

We could, of course, hypothesize that all babies are born geniuses and get swiftly de-geniused. Unfavorable circumstances, shortsightedness, frayed nervous systems, and ignorantly articulated love and fear of elders tend to shut off many of the child's brain capability valves.⁵³

Fuller argued that thus far, humanity had managed to live without scientific and technological “compensation” for its shortcomings. As he wrote in his *Operating Manual for Spaceship Earth*

(1969): nature had thus far been sufficient “to allow us to carry on despite our ignorance.”

However, “just as a bird inside of the egg is provided with liquid nutriment to develop it to a certain point” also our “nutriment is exhausted.” According to Fuller, we need to “locomote on [our] own legs” and we must act like a bird who must “step forth from its initial sanctuary and forage on its own legs and wings to discover the next phase of its regenerative sustenance.”⁵⁴ For Fuller, this next phase was only conceivable by means of science and engineering, understood as providing humans with the “wings and legs” needed to attain the next phase of “regenerative sustenance.” Fuller considered himself a person who had been “lucky enough to avoid too many disconnects during his upbringing” and had set himself the task of leading the scientific and technological way. Equating human technical inventions and physical innovations with the development of wings and legs by birds, Fuller hence understood technology as part of a natural and spiritual evolutionary development. Fuller wrote:

I see God in the instruments and the mechanisms that work reliably, more reliably than the limited sensory departments of the human mechanism.

These words underscore what most Portola volunteers imagined as the true potential of the various high technologies they were fascinated with: their capacity of “healing” human awareness of the sacred and of moving humanity onto the spiritual ladder of evolution.

Biofeedback

Biofeedback was one of the technological concepts that was discussed in the Catalog to imagine a restoration of human awareness.⁵⁵ In a biofeedback setting various kinds of technical artifacts can be used to “sense” signals coming from the human autonomous system. Outputs of these measurements are created on paper, through sound or light devices, or (as described in Portola’s magazine *People’s Computers*) as images on a computer screen. In this way, people could become aware of various types of physical activity, such as heart rate, blood pressure and brain waves.⁵⁶ In the early to mid-1970s biofeedback was a burgeoning practice in psychology and medicine, and became also constitutive of New Edge.⁵⁷

////////////////////<<Illustration Zandbergen 2 about here//////// caption: //////////////////
Fig. 2. Biofeedback Practitioner. From Payne, D. B., & Reitano, C. T. (1977). *BioMeditation. The Scientific Way to Use the Energy of the Mind*. Brooklyn, Massachussets: BFI, Inc. page II.////////////////

Whereas “professional” biofeedback manuals at the time seemed to struggle with the terminology to describe the process being measured (“consciousness,” “awareness,” “intent,” or “will”), other manuals did not hesitate to present biofeedback, in characteristic New Age terminology, as a technique for obtaining a “real knowledge of the self”--a knowledge that “has been lost by humanity over centuries by civilization.”⁵⁸ In the latter type of manuals, biofeedback is presented as a modern and scientific way of regaining awareness of our authentic selves. It is presented as a solution to alienation from the body. One manual describes for instance how a stressful society, which emphasizes only rational thought, has induced “us” to lose “touch with our bodies.”⁵⁹ Biofeedback, then, is imagined as a modern technology for returning to authentic ways of being in a manner that is congruent with the demands of the fast-paced society. It is a technique, one manual writes, which “many claim to be capable of producing the same effect as meditation but at a considerably accelerated pace.”⁶⁰

It is . . . considered by some people to be a means of reaching, in a matter of hours, that state of inner awareness and peace, spiritual and mental, which the practitioners of yoga, Zen and other forms of meditation reach only after many disciplined years. . . . Perhaps this is one very positive contribution that biofeedback can make. For to get in touch with the inner workings of one's psyche requires far more time and discipline than many Americans are able to put in after an exhausting day. For many the process of meditation is incomprehensible and, for many others, the nearest they can come to satori is a few minutes spent on yoga exercises every week or so.⁶¹

Biofeedback is furthermore congruent with a consumption-oriented society:

the gadgetry involved in biofeedback makes it highly sympathetic to the American character. Rather paradoxically, that gadgetry may be one product of the very technology that has made our lives so complex, which will lead us to a reconsideration of the quality of life.⁶²

In a language reminiscent of Arthur C. Clarke's description of the "breakthrough generation," this manual predicts that the "powers of mind," freed through biofeedback, will lead humanity in an accelerated pace towards a new level of evolution. Another manual expresses the same idea as follows:

Biofeedback is a new tool in developing the energies of the mind, body, and emotions. These energies, once brought under control and integrated with the wisdom of our higher minds or Spiritual selves may help bring mankind into a new level of evolution. It's an exciting world!⁶³

Many of the periodicals produced by Portola emphasized that biofeedback could be used as a “Do It Yourself” technology--as something that could be individually created and controlled. One volunteer of Portola told me how she used tooth-paste and salt “to attach the electrodes to our heads, it took weeks to get it out of our hair.”⁶⁴

These portayals of biofeedback illustrate the paradox that characterized the countercultural treatment of technologies. While biofeedback technologies are treated as “Do-It-Yourself tools” that need to be controlled by individual people, they are simultaneously imagined as transcending the artificial world and transporting people into an ultimate, spiritual reality. Furthermore, biofeedback is embraced as a gadget congruent with the demands of mainstream society, while it is simultaneously imagined as a tool that helps people to transcend mainstream brainwashing.

As I will argue in the next section, these paradoxes are brokered through the New Edge celebration of “feedback” as the ideal human-technology relationship. In conceiving the human-technology relationship as inherently open-ended, the notion of feedback has developed into an important New Edge imaginary. Through this imaginary, New Edgers distinguish their embrace of high tech from mainstream understandings of the human-technology relationship. Through a celebration of “open-ended” human-technology relationships, I argue, New Edge authenticates certain technologies as sacred and opposes processes of commoditization that fix technologies in

their “thingness.” I will develop this argument in a discussion of New Edge’s reactions to the commercialization of Virtual Reality.

Virtual Reality

Since the late 1960s “feedback” has proved to be an important mechanism in countercultural celebrations of high tech: the Pranksters used feedback technologies such as stroboscopes and cameras as a way of breaking through social conditioning and in the early-to mid 1970s biofeedback technologies served a similar purpose. From the mid-1970s onwards, personal computers have increasingly been explored as spiritual feedback systems and particularly since the mid-1980s various artists have started experimenting with immersive feedback environments. Like earlier biofeedback technologies, these environments were imagined as spaces in which older forms of being and knowing could be restored.

While the principle of “feedback” has been a consistent New Edge theme, the technical artifacts used to celebrate and exemplify the ideal, spiritual relationship between humans and technologies, have hence changed throughout time. Looking at the recent history of New Edge we may conclude that gnostic celebrations of specific technologies often ended due to commercialization of these technologies: when personal computers became commercial products in the early 1980s, many of the volunteers of the Portola Institute lost their belief in the transformational quality of personal computers.⁶⁵ Throughout my research, I have also encountered expressions of New Edge disillusionment when Virtual Reality (also referred to as “Artificial Reality” or “Virtual Worlds”) turned into a commercial hype in the early 1990s, and when the internet initiated the so-called “dotcom boom” soon after. Though this disillusionment

is due to a complex of economic, psychological and social factors, I will only discuss its relationship to spiritual expectations about artifacts here. I will take the New Edge celebration of Virtual Reality as a prime example.

One of the first artists who created immersive environments for New Edge purposes was Myron Krueger. Krueger explored the concept of Artificial Reality environments--or, as he also labeled these, "responsive environments"-- already in the 1970s. In these environments, he explained in his book *Artificial Reality* (1983, 1991), "human behavior is perceived by a computer, which interprets what it observes and responds through intelligent visual and auditory displays."⁶⁶ Krueger also imagined these environments as capable of restoring older states of being:

Artificial reality reintegrates the mind and the body, which have been estranged since the printing press created the sensory-deprivation, black-and-white world of the intellect, and offers a knowledge environment in which the mind, the body, and the full sensorium are employed.⁶⁷

Artificial Reality, according to Krueger, extends human sensorial capacities considerably: "We are no longer creatures of five senses. Technology has given us hundreds. We can sense the universe throughout the electromagnetic spectrum. We can hear vibrations, from the infrasound of the seismologist to the ultrasonics used in destructive testing. We can see molecular and cosmological structures. We can sniff the stars through spectral analysis. We can feel the age of ancient objects."⁶⁸ One of the dancers who performed in Krueger's artificial reality environments --Galen Brandt, partner of the aforementioned engineer Bruce Damer--experienced Krueger's

immersive environments in terms of a restoration of a deep memory of her true self, about which she had forgotten:

When I was moving . . . I became the me that I had known myself to be . . . I never felt so alive as when I was doing that, ever. . . . I lost my recent memory of my body's limitations, and refound my deeper memory of its limitless beauty and power. My body became a true "body of knowledge" which knew itself as spirit, reborn, embodied and moving.⁶⁹

Another Virtual Reality performer who spoke of VR in this way was Verona.⁷⁰ Verona has studied anthropology in the 1980s and specialized in "art, ritual and dance in the Megalithic culture of South-East Asia."⁷¹ She studied this out of a sense of "nostalgia", a search for "finding a deeper way of being human, that you couldn't find just in this culture." Verona thinks that this deeper way of being human can now be found in technology. In the early 1990s, Verona became involved in the creation of Virtual Worlds for the university of Santa Cruz. She explains her experiences with Virtual Worlds as creating a "visceral type of experience" that helps her "get out of the linearity" and to "experience something larger than yourself of a spiritual nature." Arguing that Virtual Worlds "take us to the next dimension" and help us "get used to a part of reality that we just don't get yet," Verona compares the experiences people can have in Virtual Reality to the change of perspective when artists and scientists moved from two to three dimensions during the Renaissance.

The narratives of Brandt and Verona illustrate the New Edge ideal that human beings can be physically transformed through their interactions with technologies. Galen Brandt uses the

terms “re-biologization” and “reincorporalization” to refer to her experiences with Virtual Reality. In a discussion on the impact of graphics technologies, graphics researcher Thomas West describes a similar correlate of the human-computer relationship:

The more our technologies change (and also change us), the more we can see that the newest computer data visualization technologies draw on some of our oldest neurological resources--more like those of the hunter-gatherers than those of the scribes, schoolmen, and scholars of more recent times.⁷²

Such depictions suggest that spiritual awareness can be permanently realized through the symbiosis of humans with information technologies, thereby ‘re-biologizing’ the human body and creating permanent ‘feedback loops’ between humans and their machines. Myron Krueger depicted his artificial reality environments in these terms. He envisioned a future with “man and machine . . . joined to form a single functioning unit, a symbiotic entity in which both perform the task suited to their abilities.”⁷³

“We Weren’t Done Yet”

Artists and performers such as Myron Krueger, Galen Brandt and Verona worked with Virtual Reality (VR from here on) before it became a hype. A VR hype ensued in the early 1990s, which correlated with hyperbolic celebrations of VR in magazines like *Mondo 2000*, an explosive growth in the number of VR corporations and the establishment of VR theme parks. For many early VR enthusiasts, this hype signified the end of their enthusiasm. For instance, prior to the

hype, Galen Brandt had experienced the VR world as a true community before. “We had all seen exactly the same thing, it was like we all had the same hallucination, and we all knew where we fit”, she recalls. During the hype, the group of artists and computer scientists she had been cooperating with had to sign non-disclosure agreements:

(...) everybody stopped talking. And you would go to parties and everybody would say the same thing, cheap-chit horrible stuff, like, “Well, I am working on something but if I told you I’d have to kill you.” And everybody talked about their IPO’s . . . it is true, it was like the dark ages. A lot of people went underground and a lot of people got very nervous, and a lot of people made a ton of money, it was a very dark time.⁷⁴

Another early VR developer and New Edger, Brenda Laurel, is not fond of this period either. Like various other early VR pioneers, she remembers being taken by surprise when the hype washed over Silicon Valley:

As the VR meme started to flame out in northern California in 1992, many of us involved began scrambling to change our shingles from virtual reality to something roughly synonymous, but less tainted--telepresence, augmented reality, immersion technology. Anything to get some distance from the all-too-vivid spectacle of the hype-fueled, VR road-and-media show that rocketed VR pundits to the pinnacle of pop culture and then sent us burning back into the atmosphere, noticing too late that we were in the decaying orbit of a fad. ‘Hey guys,’ little voices shout from the capsule as it begins to glow, ‘We weren’t done yet . . . we were just beginning . . .’⁷⁵

At first sight, this New Edge reaction to commercialization appears to affirm the classical binary oppositions of spirituality and materiality and idealism and materialism. Yet, the fact that New Edge has historically developed as a form of spirituality that has in itself never rejected commercialism and materialism suggests that the New Edge disillusionment with VR may not accurately be captured in terms of these distinctions. Reflections on commercialization by New Edgers themselves rather indicate that their real problem was with the way that non-disclosure agreements, copyright licenses and material restrictions (programmed or engineered in hardware) “closed off” technological development. Things constituted through New Edge discourse and practices as “open-ended,” became “fixed” in their thingness when they were sold as consumer products. As such, the ideology of “open-endedness” reveals itself as being central to the way in which New Edge constitutes technical things as sacred.

As I already suggested in my discussion of the Pranksters’ involvement with technology, according to New Edge ideology technology can only fulfill its highest purpose by being “open-ended,” i.e. by inviting active engagement and unlimited registers of use. As such, technology is understood as containing promises of constant surprise and the transformation of social, material and sacred reality. This ideal of open-endedness precludes the idea of technology as “passive” entertainment. In VR developer Brenda Laurel’s words:

Virtual Reality may be many things. It may become a tool, a game machine, or just a mutant form of TV. But for virtual reality to fulfill its highest potential, we must reinvent the sacred spaces where we collaborate with reality in order to transform it and ourselves.⁷⁶

According to Laurel, whereas TV invites consumption, real VR invites play-like interaction with technology:

. . . it may be that the nature of VR makes it inappropriate to think of it as an entertainment medium at all. Entertainment--at least mass entertainment--implies the consumption of some performance by a large audience. Roughly speaking, the size of the audience is inversely proportional to the degree of influence over the course of events that can be afforded any one person. . . . If, on the other hand, what you want is to create a technologically mediated environment where people can play--as opposed to being entertained--then VR is the best game in town.⁷⁷

Laurel's understanding of human interaction with artifacts as "play" resembles the Pranksters' conceptualization of their interactions with technologies as "experimental" and Galen Brandt's notions of VR as "transformational": they all refer to the ideal of technologies as being open-ended.

New Edgers indeed often emphasize the fact that the technologies they celebrate are open-ended and that all technologies should be so. In his manifesto *ComputerLib* Theodore Nelson for example celebrated computers as the first tool to "let the human mind grow to its full potential" and related this to the fact that the computer is an "All-Purpose machine"--a machine that has every potential meaning and significance, depending on the way in which it is produced and used.⁷⁸ Artificial Reality developer Myron Krueger equally emphasized that his immersive environments did not have just one single purpose. He defined Artificial Reality as a

“generalized concept that separates technology from any single application, enabling us to examine its broad implications.” For him, artificial reality is a “medium of experience,” “an incarnation of the imagination” and “a paradigm for our future interaction with machines.” As he also put it: “It is a laboratory for philosophy where we can ask basic questions such as, ‘What is reality?’, ‘What is perception?’, ‘Who am I?’, in fundamentally new ways.”⁷⁹ Such New Edge foregrounding of “open-endedness” also implies the idea that technologies lead humanity into an as yet unknown future of spiritual salvation: an infinite amount of experiences and knowledge can be channeled when humans and technologies are interconnected in open feedback loops. Hence, New Edgers feared that the VR hype would turn a technology with Gnostic potential into an entertainment medium for passive and consumptive entertainment, with copyright restrictions and clearly proscribed purposes robbing VR of its promise of spiritual transformation.

New Edge Fetishism

The New Edge forms an intrinsic part of the technological system of Silicon Valley at large and I have encountered the examples used in this chapter in contexts as diverse as academic research institutes, non-profit institutes, cyberpunk literature, and cyberculture magazines. They have been expressed by artists, teachers, computer engineers, scientists, journalists and entrepreneurs alike, most of whom operate in the everyday corporate and academic environments of Silicon Valley. Moreover, the self-conscious spiritual discourses of New Edge are often indistinguishable from the discourses and practices that guide technological development in Silicon Valley at large. New Edge’s understanding of certain technologies as extending people’s sensory devices--as helping people to “see more” “become aware,” and “bring out one’s true

self"--is part and parcel of a marketing rhetoric that promises technology to "bring out the artist within." The New Edge exists in a continuum with wider Silicon Valley society, then, with people, concepts, technologies and tropes continuously "travelling" from a space set apart as sacred to spaces not imagined as such. I was intrigued during my fieldwork, for example, by the way *Moore's Law*, coined by Intel-founder Gordon Moore in 1965 and predicting accelerated growth of computer power in the next few decades, was translated between these various domains and cultural spheres. Moore's Law turned out to be enthusiastically embraced at both "purely technical" conferences about technological change and "spiritual or psychedelic" ones, where it is used to legitimate claims of accelerated spiritual evolution.

Such examples, of course, pose the problem of drawing boundaries around New Edge and of clearly marking off "spiritual" uses of technology from "merely technological," "corporate," or "purely scientific" ones. It is thus difficult, if not impossible, to delineate a bounded social space in which New Edge exists, which implies that its discourse is only recognizable as "sacred" by the fact that some people at some moments define it as such and oppose it to its secular rendition. As I have attempted to show in this chapter, this is not done by rejecting things for their commercial or materialistic qualities, but through a much more subtle process in which a distinction is made between technologies that fulfill their "true potential" by being transformational and technologies that have lost their "true power" by being "brainwashed" through copyright restrictions, and single-purpose definitions of use. Seen in this way, it becomes understandable why it is that New Edge has attached itself to certain technologies at moments when these technologies were not yet popularized as consumer products. New Edge technologies are either used in explicitly experimental settings (such as biofeedback in the 1970s) or are technologies that just begin to be discovered by the larger public

(as in the embrace of personal computing in the late 1970s, Virtual Reality in the late 1980s and the World Wide Web in the early 1990s).

In their many reflections on technology, New Edgers are conscious of the fact that “technology can be many things,” as Nelson said about computers in the 1970s. The New Edge expresses a conscious desire to socially control the creation of technology and to make, as the Pranksters put it, technology “part of their own fantasy.” This recognition of the world as artificial and socially constructed makes the New Edge ultimately at home in the materialistic environment of Silicon Valley and at ease with media technologies that blur the distinction between reality and fantasy. New Edge ideology is based on the sense that “we live in a fantasy world already,” as the Pranksters put it in the 1960s or Myron Krueger in the 1990s:

The promise of artificial realities is not to reproduce conventional reality or to act in the real world. It is precisely the opportunity to create synthetic realities, for which there are no real antecedents. . . . To an overwhelming degree, our daily experiences take place in a reality of our own construction. We live our lives in the automobile, the home, the office, and the shopping mall. Through the spoken word, the written word, and the television broadcast, we experience a conceptual world that is every bit as real to us as the physical world. As the rate of technological change accelerates, it becomes increasingly difficult to understand the changing culture that technology defines. This ignorance makes us uneasy. However, it is as foolhardy to yearn for a benign Nature, which never existed, as it is to accept technological developments that make us anxious.⁸⁰

Yet, New Edge's awareness of the constructed nature of things--and, by implication, its critique of technological determinism--doesn't make it any less deterministic. Whereas New Edgers consider everything socially constructed, they still operate with the understanding that technology has a "true" and "essential" property. This essential property is imagined in terms of the sacred, a characterization that makes technologies transcend their artificial, constructed nature. As such, the New Edge grants the presence of spiritual forces in an artificial and ultimately constructed world.

¹ While acknowledging that the term “counterculture” is misleading in suggesting a radical difference with a supposed “mainstream society,” I will nonetheless use it in this chapter to refer to a set of philosophies and ideals that have emerged in most post-war large cities on the northern and western hemispheres since the 1960s. For an account of the way in which the “counterculture” equally impacted corporate and institutional practice as it was a “youth phenomenon” see Thomas Frank, *The Conquest of Cool* (Chicago and London: The University of Chicago Press, 1999).

² Hanegraaff, *New Age Religion*, 12, 97.

³ *Ibid.*, 97.

⁴ This New Age emphasis on “naturalness” implies, according to New Age researcher Andrew Ross, a widespread rejection of “external technologies,” and an emphasis on “the self-healing capacities inherent in the natural system,” A. Ross, “New Age Technoculture,” in *Cultural Studies*, ed. L. Grossberg, Cary Nelson and Paula Treichler (New York: Routledge, 1992), 539.

⁵ Interview Dorien Zandbergen with founder of ‘New Edge’ magazine *Mondo 2000* Ken Goffman (a.k.a. R.U. Sirius) in Mill Valley (California, US), September 2005

⁶ For elaborate discussions of the relationship between religion and (media) technologies, see e.g., Aupers, Houtman and Pels, “Cybergnosis”; B. Meyer, “Religious Remediations: Pentecostal Views in Ghanaian Video-Movies,” *Postscripts* 1, no. 2/3 (2005): 155-81; P. Pels, “The Confessional Ethic and the Spirits of The Screen: Reflections on the Modern Fear of Alienation,” *Etnofoor* 15 (2002): 91-119; J. Sconce, *Haunted Media: Electronic Presence from Telegraphy to Television* (Durham and London: Duke University Press, 2000); H. de Vries and S. Weber, ed. *Religion and Media* (Stanford, CA: Stanford University Press, 2001); J. Stolow, “Religion and/as Media,” *Theory, Culture & Society* 22 (2005): 119-45; D. Noble, *The Religion of Technology: The Divinity of Man and the Spirit of Invention* (Harmondsworth, Middlesex: Penguin, 1999). For thorough discussions of the relationship between religion and consumerism, see e.g., R.L. Moore, *Selling God. American Religion in the Marketplace of Culture* (Oxford: Oxford University Press, 1994); C. Campbell, *The Romantic Ethic and the Spirit of Modern Consumerism* (Oxford: Basil Blackwell, 1990); Pels, “Religion, Consumerism.”

⁷ M. Mauss, *The Gift: The Form and Reason for Exchange in Archaic Societies* (London: Cohen & West, 1990); B. Pfaffenberger, “Fetishised Objects and Humanised Nature: Towards an Anthropology of Technology,” *Man, New Series*, 23, no. 2 (1988): 236-52.

⁸ Many examples can be found in Michael Benedikt’s collection (Benedikt, ed., *Cyberspace. First Steps* (Cambridge, Mass: MIT Press, 1992), 4) in which Benedikt described cyberspace as the latest stage in an evolutionary movement from matter to spirit, with “the ballast of materiality cast away —cast away . . . perhaps finally.” (4) In the same volume, Michael Heim described cyberspace as a “Platonic new home for the mind and the heart,” and Nicole Stengers dubbed cyberspace as a “paradise.”

⁹ T. Leary, *Chaos & Cyber Culture* (Berkeley: Ronin Publishing, 1994), 5.

¹⁰ Pfaffenberger, *Fetishised Objects*, 239.

¹¹ For an overview of the various “generations” of cyber-religion theorists, see M.T. Højsgaard, “Cyber-religion: On the Cutting Edge between the Virtual and the Real,” *Religion and Cyberspace*, ed. M.T. Højsgaard and M. Warburg (Abingdon, Oxon: Routledge, 2005), 50-63.

¹² Hanegraaff, *New Age Religion*, 33 dubs bed the New Edge “a trend too recent to put into clear perspective.”

¹³ While I conducted research in Silicon Valley in 2005 New York Times journalist John Markoff published a history on the relationship between Silicon Valley and computer culture: J. Markoff, *What the Dormouse Said: How the Sixties Counterculture Shaped the Personal Computer Industry* (New York: Viking Penguin, 2005). Two years later, Stanford University communication scientist Frederick Turner published a similar account, with different focus, on the same relationship: F. Turner, *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism*. Chicago: University of Chicago Press, 2006).

¹⁴ The New Edge has also been produced in an international context. Particularly in the late 1980s and early 1990s there has been much “New Edge traffic” between San Francisco, Amsterdam and London. Yet, it can be said that the cradle of New Edge is the San Francisco Bay Area. For this reason, I will leave the international dimension of New Edge out of scope in this chapter.

¹⁵ <http://leda.lycaeeum.org/?ID=2780>. Last visited August 10, 2009

¹⁶ For elaborate descriptions of the rave movements see e.g.: G. St. John, ed. *Rave Culture and Religion* (London: Routledge, 2004); M. Collin, *Altered State: The Story of Ecstasy Culture and Acid House* (London: Serpent's Tail, 1997); M. Dery, *Escape Velocity: Cyberculture at the End of the Century* (New York: Grove Press, 1996).

¹⁷ A.M. Butler, *Cyberpunk. Harpenden* (Herts: Pocket Essentials, 2000).

¹⁸ Aupers, Houtman and Pels, "Cybergnosis," have used the term "cybergnosis" to refer to Gnostic awareness induced by digital technologies. In this chapter however, I also discuss Gnostic awareness induced by non-digital electric technology. I therefore use the more general concept of "Gnostic Technologies" as a way of describing the various kinds of technical artifacts and concepts that have been embraced for Gnostic awareness.

¹⁹ Hanegraaff, *New Age Religion*, 519.

²⁰ P. Heelas, *The New Age Movement: The Celebration of the Self and the Sacralization of Modernity* (Oxford: Blackwell, 1996), 19.

²¹ Hanegraaff, *New Age Religion*, 516.

²² Heelas, *The New Age Movement*, 19.

²³ Wolfe, *The Electric Kool-Acid Acid Test* (New York: Farrar, Straus and Giroux, 1968

²⁴ Wolfe, *The Electric Kool-Acid Acid Test*, 44.

²⁵ A. Huxley, *The Doors of Perception and Heaven and Hell* (Harmondsworth, Middlesex: Penguin, 1961 [1954]), 21, 22, mentioned in Wolfe, *Electric Kool-Acid Test*, 44, 45.

²⁶ Ibid.

²⁷ Huxley, *The Doors of Perception*, 24.

²⁸ Ibid., 31.

²⁹ Ibid., 38.

³⁰ Wolfe, *Electric Kool-Acid Test*, 133. In a later book on a new literary style that he labeled *New Journalism*, Wolfe describes how he did his research for writing the *Electric Kool-Aid Acid Tests*. The "new-journalist" method was

based on the conduct of interviews, the careful observation of non-verbal language, and on what anthropologists would call “participant observation,” T. Wolfe, *The New Journalism* (New York: Harper & Row, 1973), 32.

³¹ Wolfe, *Electric Kool-Acid Test*, 133.

³² *Ibid.*, 206.

³³ *Ibid.*, 205.

³⁴ *Ibid.*, 150.

³⁵ *Ibid.*, 38.

³⁶ P. Braunstein and M.W. Doyle, eds. *Imagine Nation: The American Counterculture of the 1960s and '70s* (New York, London: Routledge, 2002).

³⁷ This poem can be found on several places on the internet. I found it re-printed on the cover of countercultural computer magazine *People's Computers*, vol. 6, no. 4 (Jan-Feb 1978).

³⁸ Wolfe, *Electric Kool-Acid Test*, 39.

³⁹ *Ibid.*

⁴⁰ *Ibid.*, 103.

⁴¹ K. Goffman and D. Joy, *Counterculture Through The Ages: From Abraham to Acid House* (New York: Villard, 2004), 289-293.

⁴² Braunstein and Doyle, *Imagine Nation*, 35, 36.

⁴³ Interview Dorien Zandbergen with Stewart Brand, Sausalito (California, US), December 2005.

⁴⁴ S. Brand, Spacewar. Fanatic Life and Symbolic Death Among the Computer Bums. *Rolling Stone*, 1972.
www.wheels.org/spacewar/stone/rolling_stone.html

⁴⁵ Interview Zandbergen-Brand, December 2005.

⁴⁶ S. Levy, *Hackers: Heroes of the Computer Revolution* (Garden City, NY: Anchor Press/Doubleday, 1984), 130.

⁴⁷ *People's Computers*, vol. 6, no. 3 (Nov-Dec 1977: 31).

⁴⁸ Ibid., 34, 35.

⁴⁹ T. Nelson, *ComputerLib/Dream Machines*, Self-published, 1974, 4.

⁵⁰ Nelson, *ComputerLib*.

⁵¹ Ibid., “Dream Machine,” section 3.

⁵² Stewart Brand and his Whole Earth Catalog form the main theme of Frederick Turner’s *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism* (2006). This book gives a beautiful account of the relationship between the counterculture and the Silicon Valley computer industry. Turner however does not address the spiritual component of this interaction. See also: F. Turner, “Where the Counterculture Met the New Economy: The WELL and the Origins of Virtual Community,” *Technology and Culture* 46 (2005): 485-512.

⁵³ Fuller in *Whole Earth Catalog* (Spring 1969: 4).

⁵⁴ Ibid.,3.

⁵⁵ Interviews with former Portola volunteers Phillis Cole, Scotts Valley (California, US), November 2005; Joanne Koltnow, Palo Alto (California, US), November 2005; Bob Albrecht, using internet conversation program Skype, January 2006.

⁵⁶ See Barbara B. Brown, *New Mind, New Body* (New York: Harper & Row Publishers, Inc., 1974) and G.E. Schwartz and J. Beatty, eds. *Biofeedback: Theory and Research* (New York: Academic Press, 1977).

⁵⁷ An indication of the fact that biofeedback was also used in extra-institutional settings is given by concerns, expressed in various biofeedback manuals and theory books at the time, about its legitimacy. Various practitioners were concerned with situating the practice in the domain of ‘legitimate science, while trying to keep it from “fad-panacea exploitation,” as the editor of one manual formulates it (Hugh Downes in Barbara Brown: *New Mind New Body*, xi).

⁵⁸ G. Null and S. Null, *Biofeedback, Fasting & Meditation* (New York: Pyramid Books, 1974), 188. See for a discussion of the problem of defining these altered states Schwartz and Beatty, *Biofeedback*, 105. Manuals that are

explicitly ‘New Agey’ in their interpretation of biofeedback are: Null and Null, *Biofeedback*, and D.B. Payne and C.T. Reitano, *BioMeditation: The Scientific Way to Use the Energy of the Mind* (Brooklyn, MA: BFI, 1977).

⁵⁹ Null and Null, *Biofeedback*, 87

⁶⁰ *Ibid.*, 78, 88.

⁶¹ *Ibid.*, 88.

⁶² *Ibid.*, 17.

⁶³ Payne and Reitano, *BioMeditation*, 17.

⁶⁴ Interview Dorien Zandbergen with Phillis Cole, Scotts Valley (California, US), November 2005.

⁶⁵ See also Levy, *Hackers*, for an account of the disillusionment of Frederick Moore, a frequent Portola visitor.

⁶⁶ M.W. Krueger, *Artificial Reality* (Reading, MA: Addison-Wesley, 1983), xii, xiii.

⁶⁷ M.W. Krueger, *Artificial Reality*, [2nd edition] (Reading, MA: Addison-Wesley, 1991), 261.

⁶⁸ Krueger, *Artificial Reality* 1983, 3.

⁶⁹ Interview Dorien Zandbergen with Galen Brandt, Santa Cruz (California, US), January 2006. See also her website: www.virtualgalen.com.

⁷⁰ The name ‘Verona’ is a pseudonym.

⁷¹ Interview Dorien Zandbergen with ‘Verona’, Santa Cruz (California, US), January 2006.

⁷² T.G. West, *Thinking Like Einstein: Returning to Our Visual Roots with the Emerging Revolution in Computer Information Visualization* (New York: Prometheus, 2004), 41.

⁷³ Krueger, *Artificial Reality* 1983, 5.

⁷⁴ Interview Zandbergen-Brandt, Santa Cruz 2006.

⁷⁵ B. Laurel, *Computers as Theatre*. Reading (MA: Addison-Wesley, 1991), 200.

⁷⁶ Laurel, *Computers as Theatre*, 197.

⁷⁷ *Ibid.*, 118.

⁷⁸ Nelson, *ComputerLib*, 10.

⁷⁹ Krueger, *Artificial Reality* 1983, xii, 261.

⁸⁰ *Ibid.*, 1.

