

CHAPTER 7

Silicon Valley New Age

The Co-Constitution of the Digital and the Sacred¹

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INTRODUCTION

In the early 1990s in the San Francisco Bay Area, the utopian and spiritual dreams of the 1960s and 1970s spiritual movements made a come-back in the public scene through the realm of the digital (Rushkoff 1994; Dery 1996; Hanegraaff 1996: 11; Davis 1998). The rise and popularization of digital technologies such as Virtual Reality and the Internet in this period was accompanied by the hopeful expectation by spiritual seekers that these would make permanently available the utopian worlds and the altered states of consciousness sought after by a previous

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generation of hippies. As one of the spiritual gurus of the 1960s, Timothy Leary (1994: 5) put it: “spiritual realities for centuries imagined” could perhaps now “finally be realized” through the “electronic-digital”. An example of a digital-spiritual dream that surfaced in this period was the hope that immersive Virtual Worlds would make the use of verbal language obsolete, and facilitate instead direct, total and spiritual communication between people using communication methods such as colors, sounds and body movements (e.g., Barlow 1990). Another expression of cyber-spirituality in this period was the idea that through the accumulation of knowledge on the Internet, cyberspace itself became the instantiation of the collective higher consciousness that spiritual seekers had envisioned for decades. In the 1970s, spiritual seekers had referred to this collective consciousness as Gaia. This term was coined by the bio-chemist James Lovelock in the 1960s who developed the idea that the earth is a self-organizing system in which all living matter functions as a single organism. In the following decades, this assumption became incorporated in the worldview of spiritual seekers as the idea that the earth actually *is* a living organism with a higher consciousness. In the early 1990s, as Rushkoff observed (1994: 5), spiritual seekers in turn conceptualized the Internet as the “final stage in the development of Gaia, the living being that is the Earth, for which humans serve as neurons.”

In his book on the New Age movement, Wouter Hanegraaff (1996) referred to such expressions of cyber-spirituality with the term “high-tech New Age” or “New Edge” and dubbed it a “trend too recent to put into clear perspective” (1996: 11). While scholars such as Hanegraaff abstained from analyzing the New Edge in such an early stage, spokespersons of the New Edge produced their own reflections on the affinity between spirituality and digital technologies. These reflections often simply depicted the affinity as “natural”. Timothy Leary provides the prime example of such narratives. In his book “Chaos and Cyberspace” (1994) Leary sketched an

“Evolution of Countercultures” in which he described the 1965-1975 hippies as “anti-high-tech”, whereas the 1990s hippies are a “super high-tech New Breed” (1994: 81). This “super high tech” orientation of the New Breed can easily be accounted for, according to Leary, because of the “inherent spiritual characteristics of digital technology”. According to Leary, some of the “traditional attributes of the word ‘spiritual’; mythic, magical, ethereal, incorporeal, intangible, nonmaterial, disembodied, ideal, platonic” also define “the electronic-digital”.

As should be clear, Leary’s reflection on the phenomenon of high tech spirituality is tautological and *a priori* confirms the assumptions on which the discourse of New Edge is based. It is furthermore grounded in a reductive and deterministic notion of the spiritual as well as of ‘the digital.’ However, as an explicit New Edge proponent Leary can be forgiven for affirming the New Edge message while reflecting on it. Yet, tautological and deterministic reflections on the affinity between digital technology and spirituality also colored various early academic texts. Many of the so-called ‘first generation’ of scholars of religion and (cyber) technology (Hojsgaard 2005) adopted the premises of the New Edge discourse in equal measure by explaining cyberspirituality as a natural outcome of supposed intrinsic spiritual characteristics of digital technology. Because of the supposed inherent disembodied nature of cyberspace, some scholars argued in the 1990s that cyberspace has become the “Platonic new home for the mind and the heart” (Heim 1995), a “new Jerusalem” (Benedikt 1992), or a “paradise” (Stenger 1992). Being based on the assumption that digital technology and spirituality are mirrored into each other, such explanations don’t take issue with the question as to why certain people, in a certain social-cultural context came to take this New Edge idea seriously. As Talal Asad has pointed out (1993: 54): “The possibility and authoritative status [of religious practices and utterances] are to be explained as products of historically distinctive disciplines and forces.” Following Asad, as I

attempt in this paper, religious interpretations of the Internet cannot be deduced to the simple assumption that the Internet has spiritual characteristics. Instead, it needs to be understood as a specific expression of a social-cultural climate that has a longer history of celebrating spirituality through high tech, and in which science and technology have become natural forces of life. If we look at the New Edge in this way, it becomes clear that this form of religion breaks with, what Michael Saler has called “a cliché of our times”, which is the idea that science and technology are disenchanting forces in society (2004: 138). Instead, the New Edge’s celebration of the sacred through science and technology (and vice versa) points to other ways in which the sacred is evoked in contemporary Western society.

The social-cultural home of New Edge is ‘Silicon Valley’ – the area between San Francisco and San Jose at the West Coast of the United States. In the 1960s, this area witnessed the mutual emergence of the New Age movement and the computer technology industries. The spiritual New Age movement that emerged in the context of a larger counterculture, is generally known as a technology-rejecting movement. Yet, this paper shows how since the 1960s various processes of ‘brokerage’ can be traced between New Age spirituality and Silicon Valley ‘high tech culture’. While the term ‘New Edge’ has been coined in the late 1980s², this paper treats the term somewhat anachronistically to refer to this New Age-high tech brokerage since the 1960s.³ Early traces of this phenomenon can be found in the documentation by Tom Wolfe of the psychedelic group the Merry Pranksters; in the pages of the ‘back to the land’ periodical “Whole Earth Catalog” (1968) and in the pages of the later cyberculture magazine “Mondo 2000” (1989).

² This coinage occurred in the context of the magazine Mondo 2000, to which I will turn later in the paper.

³ This of course, also implies using the term New Age anachronistically since it was only since the mid 1970s that the movement ‘became aware of itself’ as New Age (Hanegraaff 1996).

In a discussion of these textual sources and the social scenes in which they were embedded, I hope to illustrate some of the mechanisms through which high tech in general and computer technology specifically, became symbolic for technological and scientific progress as well as for spiritual evolution. Starting out with a short depiction of the central beliefs and practices of the New Age – a spiritual current generally perceived to be essentially anti-technological (e.g., Ross 1992) - I will subsequently focus attention on the ways in which particularly the psychedelic movement expressed New Age ideologies through technology.

THE NEW AGE MOVEMENT: BELIEFS AND PRACTICES

In “The Making of a Counterculture” (1969), Theodore Roszak used the term ‘counterculture’ to describe the rise of several overlapping movements of young, white, and middle class Americans in the 1960s, who protested against issues such as the war in Vietnam, discrimination against women and people of color, and environmental pollution. As Roszak describes, the countercultural youth blamed the values and life-styles of preceding generations for these social and ecological problems. The countercultural protest was, generally, expressed in two different ways; some chose a political trajectory whereas others were more drawn to spiritual renewal. The so-called ‘New Left’ emerged from the Civil Rights and Free Speech movements and voiced its protest through demonstration and debate. The most well-known variant of the spiritual type of protest – introduced by a small group of artists and writers who called themselves ‘Beats’ in the 1950s – was informed by the ‘Age of Aquarius’ movement in the 1960s, and ‘established’ itself in the course of the 1970s as the New Age (Heelas 1996: 1). This movement was characterized

by a focus on ‘inner spirituality’ and a desire to ‘re-enchant’ the rationalistic and materialistic Western society. Although the frequently-used term ‘New Age *movement*’ suggests the existence of an organized and coherent social group with clear boundaries, according to anthropologist Pels “it is impossible to demarcate New Age” and it should rather be understood as a “discourse (...) that produces its own social practices as much as it penetrates into others” (Pels 1998: 266). It is, however, a discourse with characteristics, over which various scholars have reached general agreement.

In the first place, New Age is characterized by a high degree of anti-authoritarianism. New Age ideology is founded on the idea that authorities in mainstream society have, in the words of Paul Heelas, “indoctrinated – or, in the New Age sense of the term, ‘brainwashed’” (1996: 18) human beings – into seeing and understanding reality in restrictive ways. In line with the countercultural emphasis on ‘Doing It Yourself’, the New Age adage therefore became ‘create your own reality’. The philosophy behind this was, as Wouter Hanegraaff (1996: 125) points out, that “the nature of our reality is a direct reflection of our conscious and unconscious beliefs. Because most of us hold limiting and restricting beliefs about the world, the universe confirms these convictions. If we nevertheless change our beliefs, we will find that reality changes with it”. Therefore, the New Age message is that “there are no limits to the realities we can imagine and “make real” if only we believe they are possible”. New Age practices and discourse therefore are predominantly concerned with reversing mainstream ideas and beliefs as a way to overcome social brainwashing and to restore an awareness of the ‘authentic’, ‘original’ and ‘real’.

The prime area in which New Age seeks to overcome the brainwashing forces of mainstream authorities is the domain of religion itself. In a critique of ‘dogmatic and traditional’

Christianity, and particularly the Christian belief that God is a power separate from man to which contact can only be established through belief and the mediation of church authorities, New Agers emphasize individual, unmediated experiences of the divine. This also implies, what Aupers and Houtman (2008) have called, a “relocation of the sacred” implying the idea that God becomes a force located inside the self, making each person, in essence, spiritual. Paul Heelas has coined the term ‘self-spirituality’ to describe the New Age idea that “To experience the ‘Self’ itself is to experience ‘God’” (1996: 19).

Besides ‘self-spirituality’, another defining New Age doctrine is a belief in ‘the ultimate wholeness of reality’ or ‘holism.’ The idea of holism, like the idea of self-spirituality, implies a critique of mainstream society and culture. As Hanegraaff (1996: 517) points out, holism is based on a rejection of “reductionistic and dualistic tendencies within mainstream society”. The dogmatic Christian separation of man and nature, mind and body, spirit and matter, and scientific reductionism are, by New Age adherents, “held responsible for the current world crises”. The New Age answer to this is, according to Hanegraaff, “a quest for ‘wholeness’ at all levels of existence” (1996: 516). This quest implies that conceptual distinctions in mainstream dichotomies are erased in New Age philosophy, such as those between mind and body, humans and nature, past and present and even life and death.

New Age salvation implies the full realization of the principles of self-spirituality and holism; the full realization of one’s inner spiritual potential and the progress towards greater and greater wholeness. Whereas in Christian cosmology salvation only takes place after one’s death, salvation in the New Age philosophy is thought of in terms of spiritual evolution, a process that can take place within one’s own life but may continue after death; it can span several generations or even centuries. The term ‘evolution’ hereby refers to a movement towards an ‘original’ state of

reality, or, in the words of Hanegraaff (1996: 520), to a “primordial state of perfection”. New Age ‘self-growth’ groups allude to this idea by helping the “individual self unfold”, or *actualize* (Heelas 1996: 31), allowing human beings to attain salvation by becoming what they already “are by nature.” It also implies the optimistic belief that “the whole world will be transported into a higher octave” by progressively moving towards a New Age of “greater and greater wholeness” (Hanegraaff 1996: 118, 158).

As Wouter Hanegraaff points out, the New Age movement sprang forth from the psychedelic movement but – particularly since the early 1980s – it was more and more characterized by a strong discouragement (or even prohibition) of psychedelic means as part of its religious practices. Instead, New Age emphasized the use of ‘natural means’ to attain salvation. This implied, according to New Age researcher Andrew Ross (1992: 539), a widespread rejection, not only of psychedelics but of all ‘external technologies’, and an emphasis on the self-healing capacities inherent in the ‘natural system’. As a result, in the past few decades the New Age philosophy has been stereotypically known as anti-technological and as emphasizing ‘natural’ and ‘primitive ways of life.’

HIGH TECH NEW AGE IN THE 1960s: THE MERRY PRANKSTERS

While the anti-technology discourse of New Age confirms the “cliché of our times” (Saler 2004) that the domain of the sacred and that of technology are oppositional, different expressions of the New Age philosophy can be found in the history of Bay Area counterculture – some of which are very high tech. One of the early traces of the celebration of New Age ideas through technology

has been documented by the American author and journalist Tom Wolfe in “The Electric Kool-Aid Acid Tests” (1969). Because the later New Edge culture is rooted in the psychedelic community described in this book, it is insightful to have a look at the ways in which these hippies expressed and reworked New Age ideologies in explicit technological settings.

In his book, Tom Wolfe sketches the daily life of the psychedelic group ‘the Merry Pranksters’, which had formed around the author Ken Kesey, famous for his novel “One Flew Over the Cuckoo’s Nest” (1962). After Kesey obtained some wealth and success through the publication of his first book, he and his Pranksters moved into a house in the woods of La Honda, a place south of San Francisco. As becomes clear from the book, the group was very expressive of the ideas and practices that were to be popularized a few decades later as ‘New Age’. In line with the general sensibility of the spiritual counterculture, the Pranksters were inspired by the desire to overcome the brainwashing forces of mainstream society, perceived by the Pranksters as a prison that conditions people into conformity. As Wolfe reported Kesey to have said: “in the course of life, mainstream culture causes a social lag between mind and emotion: your mind wants to go one way, but your emotions the other, because of training, education, the way you were brought up, blocks, hangups and stuff like that” (132). As documented by Wolfe, the group was particularly inspired by the writings of the novelist Aldous Huxley. In his essay “The Doors of Perception” (1954), Huxley had written down his experiences with the psychedelic substance mescaline. In the essay, Huxley agreed with the “eminent Cambridge philosopher Dr. C.D. Broad” that the type of theory put forward by Bergson about the connection between memory and sense perception should be taken more seriously. This theory states that:

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. (...)

Huxley furthermore defined the human brain and nervous system as a “reducing valve” which only allows a “measly trickle” of consciousness. This “reduced awareness” is taken by most people to be the one and only reality. 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 the “reduced awareness is the only awareness” and that words are “actual things” (Huxley 1961[1954]: 21, 22). 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. 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” (Ibid.: 24). This experience entailed true salvation since it delivers 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” (Ibid.: 31). Instead, an “inner world [that is] self-evidently infinite and holy” can be discovered (Ibid.: 38).

As reported by Wolfe, the Pranksters took such cosmologies to heart. During their LSD trips, they reported a “bottled-up God inside of us that is whole, all-feeling, complete and out front” (Wolfe 1968: 133). Unlike the later New Age community, which would seek to get in

touch with their inner Gods through ‘natural’- non-technological- means, the Pranksters sought to create a divine connection *through* technology. A crucial idea that underlies this technology-orientation is the belief that the unassisted human body has lost its ability of accessing higher states of awareness. Inspired by the writings of Huxley, the Pranksters lived with the idea that social brainwashing has ‘materialized’ in the body and had turned the brain into a ‘reducing valve’ and the body into a ‘sensory lag system’. In other words, the human body and brain have been ‘de-formed’ in such ways as to obstruct immediate and direct experience of the authentic and the divine. One ‘technology’ through which the Pranksters used to restore this connection was LSD. In addition, electrical technologies were used as ways to overcome the ‘faulty body interface’. The aim was to bring people into the present and to create a direct experience of the now. One of the technological designs of the Pranksters was a high tech geodesic dome, described by Wolfe as:

(..) 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 was] a fourth dimension (Wolfe 1968: 206).⁴

⁴ According to Wolfe, the idea of such systems went beyond what would later be known as mixed-media entertainment, and what later became a standard practice in ‘psychedelic discotheques’.

The dome was realized at the various all-night parties hosted by the Pranksters. By inviting people to immerse themselves in interactive environments with camera's, sound recorders and stroboscopes, the Pranksters sought to create direct feedback loops between inner signals and outer ones, in complete synchronization, while thus bypassing the impulses of the physical body and to create a full experience of "a higher level of reality [and of] the supreme now [and of] cosmic unity" (Wolfe 1968: 205).

MAKING THE COMPUTER COUNTERCULTURAL: THE HACKER ETHIC

As can be seen in hindsight, the Prankster's high-tech-spirituality precludes the New Edge celebration of computer science and technology a few years later. The fusion of spirituality and computing that would characterize the New Edge in the decades to come, has been initiated and narrated by people who were part of the Prankster group and who were in close social and cultural proximity of this scene. As such, clear resonances and affinities can be discovered between the ways in which the Pranksters used electrical technologies and the way in which later New Edgers embraced computer technologies. "The Whole Earth Catalog" was one of the first periodicals that introduced the concept of computing to spiritual seekers in the late 1960s. It was founded in 1968 by one of the organizers and participants of the Prankster parties, Stewart Brand.

According to communication scientist Frederick Turner, "The Whole Earth Catalog" (also 'The Catalog', or the 'Whole Earth' from now on) can be considered "one of the defining documents of the American counterculture" (Turner 2005: 488). It catered to the thousands of

communes that arose all over the United States in the late 1960s, would appear biannually for four years, “ballooned to more than 400 pages and sold more than a million and a half copies” (Ibid.). Characteristic for the counterculture at large, the Catalog was cast in terms of an ambivalent, simultaneous hopeful and fearful anticipation of the future. What had caused the hippies to move ‘back’ to the land in the first place, was a complete dissatisfaction with the mainstream social and political system, in combination with a fear for future social and ecological disasters. Concerns about issues such as overpopulation, global starvation and ecological pollution colored the pages of the catalog. Holistic worldviews were presented as solutions to this problem. Books reviewed in the Catalog, such as “So Human so Animal” (1968) or “Subversive Science” (1969), argued that “we humans are not separate from nature but a part of it” and that we need to “rediscover our partnership with nature.” (WEC, Spring 1970: 7) Besides ‘holism’, another pervasive New Age theme in the Catalog was that of ‘self-spirituality.’ Each Catalog contained a section in which topics were discussed like ‘meditation’, ‘trance-dance’, psychedelic drugs and ‘self-hypnosis’ as techniques for dealing with social brainwashing and for getting ‘back in touch’ with the self (e.g., The Updated Last WEC, May 1974: 415- 422).

The subtitle of the Whole Earth, “Access to Tools”, reflected the main purpose of the Catalog: to present knowledge, tools and technologies to support a self-reliant life-style. Addresses of tool-distributors were listed alongside practical advices on how to use the tools. As Stewart Brand recalls, “The catalog in 68 was partially a response to what I thought was one of the limitations of the hippies. The thing I was trying to deal with was that all these educated young people were heading off to start colonies and reinvent civilization and they didn’t know

anything. They had all English majors basically.”⁵ For Brand, who had participated in the high-tech environments of the Merry Pranksters, it was natural to use tools and skills as the keys to spiritual and political self-empowerment. With the Catalog, Brand sought to introduce these to spiritual seekers.⁶

Among the tools and technologies discussed for self-reliant living in the Catalog, were rustic tools such as wooden stoves, spades and tents, but also high-tech products such as radios, calculators and computers. Stewart Brand realizes that the presentation of computers in the “Whole Earth Catalog” might seem surprising: “Computers were seen as this power-device that would undermine us. I didn’t see it that way.” As Brand rightly comments, many participants of the counterculture perceived computer technologies as instruments of political power. Computers were, in the words of Frederick Turner, depicted as the “weapons technologies of the cold war and as (...) emblems of a malevolent and ubiquitous technological bureaucracy” (Turner 2005: 488). This became all the more evident when in the 1960s and 70s as part of peace-activist demonstrations various computer science centers were attacked (e.g., Levy 1984; Moore 1996).

While resistance against computers was thus part of the countercultural critique, people such as Stewart Brand provided an alternative discourse of computing by announcing the new generation of (personal) computers and the mind-set of its designers *as* countercultural. The technological backdrop of this discourse was the fact that until the early 1970s, mainstream corporations did not develop computers for personal, individual use. Yet, facilitated by the arrival of small and relatively affordable chip technologies, computer hobbyists started to design and create their own personal computers in hobby clubs outside corporate settings. For many free

⁵ Interview with Stewart Brand, Sausalito (California, US) December 2005

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speech activists and sympathizers of the counterculture, including Stewart Brand, the hacker and hobbyist creation of these ‘personal computers’ outside the institutional domains, suited the overall countercultural call for individual independence over the mainstream and fuelled the dream that computers could be used for consciousness-expansion.⁷ In 1972 Stewart Brand wrote an article for “Rolling Stone” in which he announced: “Ready or not, computers are coming to the people. That’s good news. Maybe the best since psychedelics.”⁸ In the article, Brand presents the creation of the personal computer as a countercultural act. According to Brand, the popularization of computer technology “owes its health to an odd array of influences [such as] the youthful fervor and firm dis-Establishmentarianism of the freaks who design computer science”, thereby depicting computer hobbyists as well as their products as part of hippie or ‘freak’ culture. According to Brand, true personal empowerment would not come through rejection and avoidance of computer technologies, but instead through direct and unmediated access to it. In the “Whole Earth Catalog”, Brand expressed this desire in an article on the book “Music by Computers” in which he wrote: “Music by Computers. Goddamn right. When can we

⁷ This resulted in projects such as Jude Milholn and Lee Felsenstein’s Community Memory Project, a project in the early seventies that presented a mainframe computer to Berkeley students to use for ‘community building’; books such as Ted Nelson’s self-published “ComputerLib” (1974), arguing the control over computer design and use by “people who dream (‘lunatics, idealists and dreamers’)” rather than by the “profit-hungry companies and unimaginative clods”; computer centers, such as the ‘People’s Computer Company’, a non-profit computer space in Menlo Park, founded by math-teacher Bob Albrecht, where kids could freely explore the computer; and hobby clubs, most famously, the ‘Homebrew Computer Club’, a group of computer hobbyists brought together in the early 1970s by Berkeley free-speech activist Fred Moore as a space where hobbyists could swap information and help each other build their own ‘personal’ computers. The Homebrew Computer Club spawned the first personal computer companies, such as IMSAI, PET, and the most famous of all, ‘Apple’.

⁸ www.wheels.org/spacewar/stone/rolling_stone.html

get our hands on them without having to tiptoe around some 18th century Department Chairman?” (WEC, Fall 1969: 77) Such language would become typical for the Whole Earth and as a result, the Catalog became popular among “San Francisco’s bohemia and the back-to-the-land movement (...) scientists and computer technologists from the Bay Area, East Coast artists and engineers, environmentalists, and, ultimately, even do-it-yourself suburbanites” (Turner 2005: 488, 489). Through this catalog and other publications and events, Stewart Brand became one of the main brokers between the psychedelic community and the computer industry.

R.U. SIRIUS AND MONDO 2000

The “Whole Earth Catalog” was an important vehicle for computer-counterculture brokerage at the time when the personal computer was, materially and conceptually, still in its early stage⁹ of development. The cyberculture magazine “Mondo 2000” (from now on also referred to as ‘Mondo’) became a new medium through which the psychedelic community and computer culture were brokered in the different technological and cultural settings of the late 1980s. Ken Goffman, who uses the pseudonym ‘R.U. Sirius’, founded Mondo in 1989.

Goffman grew up in the context of the 1960s and ‘70s countercultural ‘turmoil’ in New York and came to California in 1982 to start, as he now recalls, a “neo-psychedelic movement”

⁹ In the period mid 1970s-early 1980s various attempts have been made to create and market a personal computer. The first successful attempt of popularizing a personal computer was in 1981 with the IBM PC, followed by the Machintosh in 1984.

and to create a magazine for it.¹⁰ This first became “Reality Hackers” in 1984, then “High Frontiers” in 1988, which, in 1989, changed into “Mondo 2000”. According to Mondo-historian Jack Boulware, “High Frontiers” started out with a circulation of 1,500 issues, which grew out to 15,000 to nearly 100,000 circulations in the context of “Mondo 2000”. Similar to the Whole Earth, Mondo attracted a mixed audience of computer engineers and countercultural activists and it found a “nationwide audience in the hip computer culture.”¹¹ The magazine, to which Goffman related the Whole Earth as a “respectable older cousin” (Rucker et al. 1993: 16) presented ‘edgy’ and barely comprehensible technologies and innovative technological concepts, such as virtual sex, smart drugs, virtual reality and cryptography. The editors of “Mondo 2000” soon adopted the term ‘New Edge’ to articulate a simultaneous embrace and rejection of the New Age movement and to ally it with ‘edgy’ developments in the world of high-technology production.¹²

Throughout his countercultural career, Goffman had become both a sympathizer and a critic of the New Age movement. Particularly psychedelics had made him sympathetic to the New Age questioning of the nature of reality: “Psychedelics gives you a sense of the existence of another quantum reality where you can almost stick your hands and brain in and slip into infinity, a place that has less limitation than the apparent physical world that we live in (...) there is this sense that you can tap into eternity somehow.” Goffman however, did not like the currents within New Age that idealized primitive life and that were based on a nostalgic idea of naturalness. He comments:

¹⁰ Interview with Ken Goffman, Mill Valley, California, US. September 2005

¹¹ http://www.totse.com/en/ego/literary_genius/mondo2k.html

¹² According to Ken Goffman, both Queen Mu and John Perry Barlow claim to have coined the term ‘New Edge’ (Interview 2 with Ken Goffman, San Francisco, California, US. September 2008).

I don't like to sleep in a tent, I am not vegetarian and I don't reject technology (...) I was always open to tech-culture (...) Everybody talked about 'Edge' and 'Edgy' and all that, and it became, and still is, the cliché for anything that was experimental. We were applying that to New Age (...) throughout our publishing history we became a funnel for a lot of things that were expressed also by very New Agey people and very idealistic people (...) but we also wanted to distance ourselves from the New Age thing.¹³

The resulting New Edge sensibility of the magazine was expressed in their adage: 'hack your own reality'; a technophile transformation of the New Age idea that we create our own reality. According to Rudy Rucker, mathematician, science fiction writer and a prime contributor to *Mondo*, the central message of the magazine is:

a) there is a better way and b) I Can Do It Myself. The way that Big Business or The Pig¹⁴ does things is obviously not the best way; it's intrusive, kludgy, unkind, and not at all what you really want. (..) Now, thanks to high tech and the breakdown of society you are free to turn your back on the way "they" do it, whatever that may be, and do it yourself. You can make (...) – most important of all – your own reality.' (Rucker et al. 1993: 10)

¹³ Interview with Ken Goffman, Mill Valley, California, US. September 2005

¹⁴ Using the term 'Pig' to refer to political authorities had become common among those who were familiar with and sympathetic to the so-called YIPPIES (Youth Internation Party), a theatrical political party founded in the US in 1968 by Abbie and Anita Hoffman, Jerry Rubin and Paul Krassner. The YIPPIES believed in 'media revolution', and in 1968 they announced that they were nominating a pig ("Pigasus the Immortal") as candidate for President, and "once it got elected, they were going to eat it" (Goffman 2004: 291).

According to Goffman, Mondo “is about this idea that we can hack reality, that we can get more out of reality and maybe ultimately escape the limitations of this particular reality.”¹⁵ For Goffman, tools were essential in this process, as he had heard a computer hobbyist say: “if you want to change the rules, change the tools. I was never a Geek, but I saw that too.”¹⁶

THE NEW EDGE

Preceded by the high tech spirituality of the Merry Pranksters and elaborated further in the pages of the “Whole Earth Catalog” and “Mondo 2000”, the decades in between the 1960s and the late 1980s witnessed the emergence of a New Edge culture. Central to the New Edge culture as it developed in the early 1980s, was a particular understanding of the computer as a vehicle for a spiritual experience. This understanding was expressed in various ways. In the first place, it became quite common to compare interaction with the computer to a disembodied, psychedelic trip. The development of computer graphics since the 1980s reinforced this narrative even more. As Stewart Brand recalls, one of his earliest and most profound experiences with computers was when he recognized a similarity between the psychedelic experience of disembodied knowing and the mental immersion in the graphical world on the computer screen. In the early 1970s, when Brand visited the Stanford Research Institute, he witnessed a few hackers playing a game

¹⁵ Interview with Ken Goffman, Mill Valley, California, US. September 2005

¹⁶ Ibid.

they had designed. The game was called “Spacewar” and is known to be one of the first games that worked with a graphical interface. Brand describes:

Rudimentary Spacewar consists of two humans, two sets of control buttons or joysticks, one TV-like display and one computer. Two spaceships are displayed in motion on the screen, controllable for thrust, yaw, pitch and the firing of torpedoes. Whenever a spaceship and torpedo meet, they disappear in an attractive explosion.¹⁷

According to Brand, in the way these hackers played Spacewar resided proof that:

something – sort of – psychedelic was going on with the computer. (...) There was an intensity and a glee and an engagement that was as full as if they were playing a really intense game of basketball or football, except that they were just sitting like this [Brand moves only his thumbs] and their bodies were not engaged, it was their thumbs and their eyes (...) in that sense an out-of-body projection was going on. This was just psychedelic in the sense that, with psychedelics, you could just lie under a tree and experience all kinds of things, whole universes and cosmic things (...) the body isn’t doing much.¹⁸

Besides Stewart Brand, other prominent spokespersons of the New Edge saw the development of the graphic capacities of the computer as a way to make permanently available the out-of-body, non-discursive, higher state of awareness that can otherwise only be experienced through psychedelic drugs or meditation.

¹⁷ www.wheels.org/spacewar/stone/rolling.html

¹⁸ Interview with Stewart Brand, Sausalito (California, US) December 2005

Within the New Edge scenes, a linkage between New Age imaginary and computer technology was also forged without explicit reference to psychedelics. Since the early 1970s various publications drew a relationship between computing and spiritual liberation in general. A major metaphor borrowed from the domain of computing to describe spiritual liberation, for example, was ‘programming.’ In “Programming and metaprogramming in the human biocomputer” (1972), discussed in the “Whole Earth Catalog”,¹⁹ consciousness-researcher and countercultural guru John Lilly, for example, draws a very literal comparison between the workings of the human mind and that of the computer with the main similarity that they are both ‘programmed’ by outside forces. Lilly refers to the human body as the “human biocomputer” and speaks, in a mixed ‘New Age-computer language’, about the need to search for “self-directed programs in the complete physical absence of other external computers.” As Lilly states: “[in the absence of external computers] the self-directed and other-directed programs can be clearly detected, analyzed, re-computered, re-programmed [since] in solitude, a maximum speed of re-programming is achievable by the self.” Conveyed in this ‘techno-spiritual’ language is the general New Age message that we should distinguish between ‘inner authenticity’ and ‘external brainwashing.’ According to Lilly, the ultimate goal is to “make the computer general-purpose.” This means that “we need to rid ourselves from external computers and programs and to ‘reprogram’ the human biocomputer by the self.”

In depicting the human mind and body as a ‘biocomputer’, and in presenting internal, spiritual processes as ‘programs’, Lilly modeled the human body and mind after the computer. By furthermore describing the New Age process of “restoring inner knowledge” as a process of

¹⁹ Updated Last WEC, May 1974: 313

becoming a “general purpose computer”, Lilly furthermore presented spiritual liberation as a feature of this model. Already in the Catalog, such writings were self-consciously presented as both belonging to and different from (better than) ‘conventional’ writings on spirituality. As he wrote in his commentary on Lilly’s book for example, Brand rendered it “the best internal guidebook” he has seen – “far more practical and generalized than transcendent Eastern writings or wishful Underground notes.”²⁰ Also in the New Edge scenes that emerged in following decades, the concept of ‘reprogramming’ remained a common metaphor for referring to spiritual liberation.²¹

BIOFEEDBACK AND VIRTUAL REALITY

Narratives that linked computers to New Age ideas gave rise to practices that, in turn, affirmed the idea that computer technology was capable of restoring awareness of the authentic mind, and of generating higher experiences and states of consciousness. One of the practices that affirmed this idea was biofeedback. Since the 1960s, the practice of biofeedback had become part of the fields of psychology and medicine as a way to investigate the extent to which one could control the autonomous processes of the body. In a biofeedback setting, electrodes attached to people’s body parts sense signals from the so-called autonomous system, after which an output is created

²⁰ Updated Last WEC, May 1974: 313

²¹ In the early 1990s various mailing-lists emerged that discussed spiritual reprogramming techniques. One of these was the so-called ‘Leri-list.’

on a computer screen.²² In this way, people can become aware of various types of physical activity, such as heart rate, blood pressure and brain waves.²³ As becomes evident from various biofeedback manuals and theory books at the time, biofeedback researchers and practitioners were most concerned with situating the practice of biofeedback in the domain of legitimate science while trying to keep it from, as formulated by one editor, “fad-panacea exploitation” (Barbara Brown 1974: xi). In such manuals, authors thus seem to struggle with the terminology they should choose in order to accurately describe the process that is being measured; they were debating about the use of terms such as “consciousness”, “awareness”, “intent”, or “will” (Schwartz and Beatty 1977: 105). Other manuals (e.g., Null 1974) however, 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” (Null 1974:188). In such manuals, biofeedback was embraced as a powerful ‘objective’ and scientific legitimacy for the spiritual claims of the New Age.

As explained by Sarah Trump, Whole Earth reader, computer activist and in the 1970s and 80s very much steeped into the general countercultural atmosphere, the New Age community was particularly interested in the ability of biofeedback to measure ‘alpha waves’, a low-frequency type of brain wave understood to correspond with ‘altered states of mind’, or ‘altered consciousness’. Already in the early 1970s, in characteristic ‘Do It Yourself’ ways, Trump and her friends first used biofeedback to “measure[d] the physical activities of the body”, but, as she explains: “Soon, of course, we moved on to the alpha waves which represent altered states of

²² In older biofeedback settings the output was provided on paper.

²³ See for early explanations of biofeedback “New Mind New Body” by Barbara Brown (1974) and “Biofeedback, Theory and Research” by Gary E. Schwartz and Jackson Beatty (1977)

consciousness.”²⁴ In the way in which the New Age community adopted biofeedback as a practice, technologies were used, in a hopeful way, to establish *immediate* contact with those parts within the body that are normally beyond grasp – in the New Age terminology defined as the ‘self’, the ‘spiritual’, the ‘authentic’ or ‘real’. Biofeedback would, according to one biofeedback manual advertised in the Whole Earth, “produce the same effect as meditation but at a considerably accelerated pace.” The technologies of biofeedback are thus presented as more efficient than those of the natural body and as more ‘in tune’ with the demands of the modern, hasty, time (Null 1974: 87).

A decade later, in a different technological setting, similar expectations cloaked the technologies of Virtual Reality. As explained by Virtual Reality developer, entrepreneur and ‘techno-hippie’ Brenda Laurel (1993[1991]), Virtual Reality is “a medium in which the human sensorium is surrounded by (or immersed in) stimuli that are partially or wholly generated or represented by artificial means, and in which all imagery is displayed from the point of view of an individual participant, even as he or she moves around” (Laurel 1993[1991]: 199). The first VR systems required people to put on a lot of gear, such as gloves, and goggles or a suit with position-sensing devices (Ibid.: 184). The technology was pioneered by researchers at NASA, Autodesk, and VPL Research, and popularized through VPL Research-founder Jaron Lanier. Although the image-quality was poor and lots of people experienced ‘motion-sickness’ because of slow frame rates²⁵, Lanier and others with him had high expectations of the technology. According to Lanier, VR was “the first medium that doesn’t narrow the human spirit” and that

²⁴ Interview with Sarah Trump, Scotts Valley, California, US. November 2005

²⁵ The frame rate is the number of frames (images) that are displayed every second, measured in frames per second (fps). The higher the frame rate, the more realistic the movements will seem.

would “elevate people to a new plane of reality.”²⁶ This idea was quickly picked up by Timothy Leary, who introduced it, in turn, to Mondo founder Ken Goffman. As Goffman recalls: “Tim Leary called and said that I really had to pay attention to this guy, Lanier, that he was the smartest guy around. (...) I heard from Jaron about Virtual Reality, he told me what it was.”²⁷

Hyped as “electronic LSD”²⁸ and as the next medium with high potential for spiritual liberation, Virtual Reality became one of the main topics of “Mondo 2000”. Around the same time, Brenda Laurel discussed Virtual Reality in her book “Computers as Theatre” as a potential tool for “consciousness expansion, personal liberation and a transformation of one’s relationship with the world” (Laurel 1993[1991]: 195). Laurel mourns the loss of magical places in our contemporary world and argues that VR can bring back the powerful experiences of divine presence as traditionally evoked by ancient rituals and theatre (Ibid.: 196-197). In order to fulfill the highest potential of VR, she comments, we need to “reinvent the sacred where we collaborate with reality to transform it and ourselves.”²⁹

NEW EDGE SALVATION

Salvation in the New Age milieu is imagined as the final point of spiritual evolution where all living beings are integrated into a greater whole of spiritual awareness. Salvation in the New

²⁶ Lanier in Mondo 2000, Summer 1990

²⁷ Interview with Ken Goffman, Mill Valley, California, US. September 2005

²⁸ Barlow in “Mondo 2000”, Summer 1990

²⁹ Interview with Brenda Laurel, Santa Cruz, California, US. November 2005

Edge current is slightly different: it is imagined as an evolutionary process towards spiritual awareness through a full integration of human beings and their technologies. Through this imaginary, the idea is expressed that technology is better capable than the ‘unassisted’ body to overcome social brainwashing and to ‘restore’ spiritual perfection.

In the “Whole Earth Catalog”, the idea of spiritual evolution through human-technology symbiosis can be recognized in the writings of Buckminster Fuller. Fuller, one of the major heroes of Stewart Brand, was a visionary, designer, architect and inventor and was popular in the New Age counterculture. As stated in each Catalog, Fuller’s ideas had initiated the catalog and each edition started with a few pages on his ideas and inventions. Fuller was concerned with the future survival of the human race and with the ecological problems that threatened this survival. For him, Nature and God were one, which implied that Nature was a creative force with infinite powers, capable of dealing with ‘every and all problems.’ In his mind, the ecological problems were not due to shortcomings in nature. Instead, Fuller believed that ecological problems were due to shortcomings in the cognitive capabilities of humans to live in accordance with Nature. Fuller believed that the ‘brainwashing’ influence of mainstream culture and society had caused cognitive defects in humans. As he argued in his characteristic 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.³⁰

³⁰ Fuller in WEC, Spring 1969: 4

For Fuller the solution resided in science and technology. 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.”³¹ For Fuller, science and engineering were the “wings and legs” that people would need to find their next phase of “regenerative sustenance.” Fuller considered himself to be a person who was “lucky enough to avoid too many disconnects during his upbringing” and set himself the task of leading the (scientific and technological) way. By equating ‘technical inventions’ and ‘physical innovations’ by humans, with the development of wings and legs by birds, Fuller thus understood technology to be part of a natural evolutionary development. This evolution was, for Fuller, part of a divine plan. One of his statements, reprinted several times in the Catalog, made this faith in the divine powers of technology clear. Fuller saw “God in the instruments and the mechanisms that work reliably, more reliably than the limited sensory departments of the human mechanism.”

The idea that technology development is part of a natural as well as of a spiritual evolution is widely shared within social networks surrounding the Catalog and “Mondo 2000”. Brenda Laurel uses the term “syntrophogenesis” to refer to the co-development of humans and technology. In using this term, Laurel argues in the first place that technology development is as natural as biological development. Laurel: “technology is like hands, like tools, it is as much a

³¹ WEC, Spring, 1969: 3

part of the biosphere in my view, as I am, so I think that the boundary that people tend to draw [between technology and the biosphere] is impossible.”³² Secondly, in using this term, Laurel refers to the work of microbiologist Lynn Margulis, who had cooperated with James Lovelock on the development of the Gaia theory and created in 1966 her own theory. In this theory, she charges natural evolution with moral and spiritual intention, proclaiming that symbiosis – rather than competition – is the driving force of evolution.³³ In the same way, Laurel thinks, human-technology co-symbiosis is an evolutionary development with moral and spiritual implications.

While the idea of human-technology symbiosis as both a material and a spiritual evolutionary development was expressed in the “Whole Earth Catalog” with reference to science and technology in general, it became more manifest and specific in later years with respect to computer technologies. The idea of human-computer symbiosis as both a material and a spiritual development was one of the main themes in *Mondo 2000*. It became apparent in the celebration of the science fiction genre of ‘cyberpunk’, science fiction set “in a near future, dominated by high technology including computers, computer networks and human/machine hybrids.”³⁴ According to *Mondo* contributor Rudy Rucker, cyberpunk really is “ABOUT the fusion of humans and machines.” By making it the main focus, *Mondo 2000* presented this fusion as inevitable. Various psychedelic gurus and developers of digital technologies fantasized about this

³² Interview with Brenda Laurel, Santa Cruz, California, US. November 2005

³³ Margulis in Hanegraaff 1996: 155

³⁴ Butler (2000: 9). According to Butler: “The technology provided the *cyber* part of the label; the street life of the stories and novels offered the *punk* part. The most visible of cyberpunk novels was William Gibson’s *Neuromancer* (1984), which depicted a ‘near-future world dominated by computer networks and Japanese corporations.’ It was editor and critic Gardner Dorzois who first linked Gibson with Bruce Sterling, Rudy Rucker, John Shirley, and Lewis Shiner as a ‘cyberpunk’ author.

development in the magazine whereas some of them mused about it as a process leading to spiritual salvation. Regular Mondo contributor John Perry Barlow's following statement, written in 1992, provides the prime example of this reasoning:

Earlier in this century, the French philosopher and anthropologist Teilhard de Chardin wrote that evolution was an ascent toward what he called "The Omega Point", when all consciousness would converge into unity, creating the collective organism of Mind. When I first encountered the Net (...) it took me a while to remember where I'd first encountered the idea of this immense and gathering organism.³⁵

CONCLUSION

In this chapter I analyzed New Edge as a set of discourses and practices that emerged through brokerage between the sensibilities of the New Age movement and high tech culture in the San Francisco Bay Area. Various brokers of this fusion, such as Ken Kesey, Stewart Brand and Ken Goffman, consider New Age ideologies and the potential of high tech to be mutually re-inforcing. In the social domains of the Merry Pranksters and the periodicals founded by Brand and Goffman - The "Whole Earth Catalog" and "Mondo 2000" - the New Edge thus emerged as a field of thought and practice that is stereotypically New Age in its embracement of self-spirituality, holism and spiritual evolution, but less so in the ways in which salvation is imagined. As we have seen, one of the main refrains of the New Edge is a lack of faith in biological nature and the

³⁵ Barlow in *Communications of the ACM*, 1992

human body. It is in this devaluation of organic nature that we can recognize the crucial difference between New Age and New Edge: whereas the New Age expresses the faith that the human body has the inherent capacity to overcome social conventions and material restrictions, the New Edge has no faith in unmodified human biology. On the contrary, the human body is a ‘flawed sensory apparatus’ and a ‘reducing valve’ and becomes thereby defined as the locus of mainstream pollution. Digital technologies are believed to be able to ‘fix’ this biological defect and to restore ‘natural perfection’ by leading people towards their second stage in evolution. In this perception of modern technologies as ‘natural’ extensions of the human mind that evolve towards spiritual awareness, digital technologies become perceived as equally natural as the human body and as ‘better than nature’³⁶ in its spiritual capacities.

Early traces of this type of high tech New Age can be found in the specific appropriation of electric technologies in the psychedelic communities of the 1960s. In focusing on the early developments of what would later be called the New Edge, I attempted to counter the determinism that dominated early interpretations of Internet-spirituality. In contrast to deterministic explanations that the affinity between spirituality and the Internet is natural, this study showed that different technologies have, at various moments in time, been imagined as natural environments for the expression of spirituality. In assessing New Edge in relation to technologies as diverse as electric technologies, biofeedback, Virtual Reality and the Internet³⁷, it

³⁶ Hence, one could speak of the emergence of the idea of digital technology as being humanity’s “second nature”, a term that has been used in comparable ways by Sean Cubitt (1996), Michael Taussig (1993) and which is similar to Donna Haraway’s (1991) construct of the ‘cyborg’.

³⁷ While the spiritual discourses of the Internet seemed to be characteristic of the time period in which the Internet popularized in the 1990s, a similar discourse can currently be discerned around the development of small-scale computer technologies. This discourse is led by engineer Ray Kurzweil through the

could thus be argued that New Edge follows the technological *hypes* of its time. Although advocates of New Edge – at least those presented in this paper – associate themselves with the countercultural (psychedelic) domain, the phenomenon of New Edge is thus constructed in a constant dialogue with institutionalized science and technology. In this dialogue, mainstream celebrations of technologies interact with countercultural celebrations of independence; modern fantasies about unlimited technological progress meet New Age fantasies about unlimited spiritual growth.

As such, one of the arguments that this paper has sought to make is in support of the claim made by various scholars that the religious realm is not isolated from other fields of social practice and discourse (e.g. Asad 1999; Meyer 1998; Pels 2003). In the case of the New Edge it becomes evident that religious imagery can be inspirational for technological development and can frame experiences of technology-use. In the New Edge imaginary of digital technologies the sacred and the technological are being co-constituted in each others' image. This co-constitution

publication of his popular book “The Singularity is Near” (2005). In this book Kurzweil argues that, powered by very small-scale (nano) computer technologies, a human-computer symbiosis is at hand which will lead us to a point of ‘singularity’. As expressed in his book as well as in his many public presentations, typical New Edge ideas can be recognized in Kurzweil’s search for liberation, both physical and spiritual, through the merging of nanotechnologies with the human body. Kurzweil who is sympathetic to New Age thought and to the New Age ideas of transcendence, does not believe in the natural capacities of the human body to obtain this. In his book he writes: ‘Our version 1.0 biological bodies are (...) frail and subject of a myriad of failure modes, not to mention the cumbersome maintenance rituals they require. (...) much human thought is derivative, petty, and circumscribed. (...) The Singularity will represent the culmination of the merger of our biological thinking and existence with our technology. (...) The Singularity will allow us to transcend these limitations of our biological bodies and brains.’ (Kurzweil 2005: 9) This singularity, as Kurzweil explains later, will lead us to a transcendent level of reality (...) and will infuse the universe with Spirit (Kurzweil, pp. 388-389).

implies a simultaneous secularization of the sacred and a sacralization of technology. For example, in John Lilly's depiction of the authentic mind as being like a 'general purpose computer' and in modeling the mechanisms through which one can access the authentic mind on the workings of the computer by using the term 'reprogramming' for this process, the sacred self is secularized and imagined as a function of the computer. At the same time, sacralization of digital technology occurs through the belief that it is possible for these technologies to 'bypass' the 'corrupting' material and social forces of everyday life. In the narratives surrounding the technologies of biofeedback, Virtual Reality and the Internet, this is expressed in the idea that such technologies can bring about New Age salvation; through getting people 'back in touch' with the self, through 'reinventing' sacred spaces or through a 'hard-wiring' of Gaia. In such narratives, digital technology is sacralized by conceptually grounding it in a primordial, transcendent realm of existence.

BIBLIOGRAPHY

- Asad, Talal. 1993. *Genealogies of Religion: Discipline and Reasons of power in Christianity and Islam*. Baltimore, MD: The Johns Hopkins University Press.
- . 1999. *Formations of the Secular: Christianity, Islam, Modernity*. Stanford: Stanford University Press.
- Aupers, Stef and Dick Houtman. 2008. "The Sacralization of the Self: Relocating the Sacred on the Ruins of Tradition". Edited by Hent De Vries, *Religion: Beyond a Concept*. New York: Fordham University Press, pp. 798-812.
- Barlow, John Perry. 1992. "The Great Work." *Communications of the ACM*, 35 (1): 25-28.
- . 1990. "Being in Nothingness: Virtual Reality and the Pioneers of Cyberspace." *Mondo 2000*, 2.
- Boulware, Jack. *A History of Mondo 2000*. www.totse.com/en/ego/literary_genius/mondo2k.html
- Benedikt, Michael. (Ed). 1992. *Cyberspace: First Steps*. Cambridge, Mass: MIT Press.
- Brand, Stewart. 1972. Spacewar. Fanatic Life and Symbolic Death Among the Computer Bums. *Rolling Stone*, www.wheels.org/spacewar/stone/rolling_stone.html
- Brown, Barbara. 1974. *New Mind, New Body*. New York: Harper & Row Publishers, Inc.
- Cubitt, Sean. 1996. "Supernatural futures: Theses on digital aesthetics." Edited by George Robertson, Melinda Mash, Lisa Tickner, Jon Bird, Barry Curtis, & Tim Putnam, *Future Natural. Nature, Science, Culture*. (pp. 237-55). London, New York: Routledge.
- Davis, Erik. 1998. *Techgnosis: Myth, Magic and Mysticism in the Age of Information*. London: Serpent's Tail.

- Dery, Mary. 1996. *Escape Velocity: Cyberculture at the End of the Century*. New York: Grove Press.
- Schwartz, Gary. E. and Jackson Beatty (Eds). 1977. *Biofeedback: Theory and Research*. New York: Academic Press.
- Gibson, William. 1984. *Neuromancer*. New York: Ace Books.
- Hanegraaff, Wouter. 1996. *New Age Religion and Western Culture: Esotericism in the Mirror of Secular Thought*. Leiden, New York, Koln: Brill.
- Haraway, Donna J. 1991. *Simians, Cyborgs, and Women: The Reinvention of Nature*. New York, NY: Routledge.
- Heelas, Paul. 1996. *The New Age Movement: The Celebration of the Self and the Sacralization of Modernity*. Oxford: Blackwell.
- Heim, Michael. 1995. "The Design of Virtual Reality." *Body & Society*, 1 (3-4), 65-77.
- Hojsgaard, Morten and Margit Warburg (Eds). 2005. *Religion and Cyberspace*. Abingdon, Oxon: Routledge.
- Huxley, Aldous. 1961. *The Doors of Perception and Heaven and Hell*. Harmondsworth, Middlesex: Penguin Books.
- Kurzweil, Ray. 2005. *The Singularity is Near: When Humans Transcend Biology*. New York: Viking.
- Laurel, Brenda. 1991. *Computers as Theatre*. Reading, Mass. a.o.: Addison-Wesley Publishing Company, Inc.
- Leary, Timothy. 1994. *Chaos & Cyber Culture*. Berkeley: Ronin Publishing, Inc.
- Lilly, John. 1972. *Programming and Metaprogramming in the Human Biocomputer*. New York: Julian Press.

- Meyer, Birgit. 1998. "The Power of Money: Politics, Occult Forces, and Pentecostalism in Ghana." *African Studies Review*, 41 (3), 15-37.
- Null, Gary and Steve Null. 1974. *Biofeedback, Fasting & Meditation*. New York: Pyramid Books.
- Pels, Peter. 1998. "Religion, Consumerism, and the Modernity of the New Age." *JASO*, 29 (3): 263-72.
- Ross, Andrew. 1992. "New Age Technoculture." Edited by Lawrence Grossberg, Cary Nelson, Cary & Paula A. Treichler (Ed), *Cultural Studies*. New York: Routledge.
- Roszak, Theodore. 1969. *The Making of a Counter Culture: Reflections on the Technocratic Society and its Opposition*. New York: Paperback Garden City.
- Rucker, Rudy, Mu Queen and R. U. Sirius (Eds). 1993. *Mondo 2000. User's Guide to the New Edge*. London: Thames and Hudson Ltd.
- Rushkoff, Douglas. 1994. *Cyberia: Life in the Trenches of Hyperspace*. San Francisco: Harper San Francisco.
- Saler, Michael. 2004. "Modernity, Disenchantment and the Ironic Imagination." *Philosophy and Literature*, 28 (1), 137-49.
- Stenger, Nicole. 1992. "Mind Is a Leaking Rainbow." Edited by Michael Benedikt, *Cyberspace. First Steps*. (pp. 49-58). Cambridge, Mass.: MIT Press.
- Taussig, Michael. 1993. *Mimesis and Alterity: A Particular History of the Senses*. New York, NY: Routledge.
- Turner, Frederick. 2005. "Where the Counterculture Met the New Economy. The WELL and the Origins of Virtual Community." *Technology and Culture*, 46, 485-512.
- Wolfe, Tom. 1968. *The Electric Kool-Aid Acid Test*. New York: Farrar, Strauss & Giroux.