Embracing the Telematic: A Techno-Utopian Vision of Art and Pedagogy for the Post-Human Age of Control

Karen Ferneding
University of Illinois, Urbana-Champaign
fernedin@uiuc.edu

Within the present context of a postmodern technological society characterized by surveillance and information computer technologies (SICT), globalization and the mediation and commercialization of the cultural sphere, *technics*, the human experience of technology, is perhaps one of the most significant but least acknowledged challenges facing the human condition. Technics, therefore, is examined specifically in relation to the nexus of art and pedagogy via the work of cybernetic artist, art educator and visionary, Roy Ascott. Ascott's re-conceptualization of art and pedagogy involves the application of cybernetics and telematics, the fusion of computers and telecommunications systems, such as the Internet, to create collaborative artworks towards manifesting a utopian vision of a unified, global consciousness. Ascott, as a techno-utopian visionary, foresees the inevitability of a post-biological human era that shall use such "technologies of transcendence" towards the "fruitful control" of society. Ascott's techno-utopian position thus demands a radical reconceptualization of the purpose of art, the role of artists within society and art education, a vision that is characterized by alignment with the technologies of telematics, science and gobalization. This review questions the fundamental assumptions of Ascott's post-political and technocentric vision that seeks to realize a prelapsarian utopia via techno-spiritualism – a cybernetic based endeavor that essentially expresses a will to control. Ascott's techno-utopian vision of art and pedagogy, characterized by a naïve idealization of cybernetic systems of surveillance and control, reflects how art and art education are positioned within present administered society, and as such signify a deeper level of co-option than evidenced by its repurposing of commodifying practices as art. Educators, therefore, need to give Ascott's work serious attention.

One of the most significant expressions of human endeavor is artistic creativity. Art can be understood as a way of being in the world, an aesthetic knowing, that reveals the power which humans express as subcreators. For example, artistic expression, within the context of Greek philosophy, emerges from the intersection of *techne* and *poiesis,* as *techne* relates to the skill of crafts and the creativity of mind, the poetic. In effect, "*Techne* reveals or brings to presence something which is possible," and thus expresses a mode of truth (*episteme*) (Ihde, 1979, p. 108). Therefore, *technics,* or the human *experience* of technology, can thus be associated with the actualization of possibility and such possibility can express both human freedom and systems of control.

From a phenomenological perspective, technology experienced as *technics* (noetic) reflects the realm of intention (noematic) and can therefore be understood to function as a language (Mounier, 1951, cited in Ihde, 1979, p. 58) and as such has power to both express and mediate (change) human reality. Art therefore can be one means by which society articulates the specific "language" of *technics* and the social vision it naturally manifests. And within the present context of a postmodern technological society characterized by surveillance and information computer technologies (SICT), globalization and the mediation and commercialization of the cultural sphere, *technics* is perhaps one of the most significant but least acknowledged challenges facing the human condition.

However, one artist and art educator, the cybernetic artist Roy Ascott, has explored the intersection of art and *technics* and its specific relationship to education. An account of his vision of this relationship is explicated in the book, *Telematic Embrace: Visionary Theories of Art, Technology, and Consciousness* (2003, University of California Press), edited by Edward A. Shanken, Executive Director of the Information Science and Information Studies program at Duke University. The text features an introductory chapter by Shanken followed by a collection of Ascott's writing from 1964-2000 that illustrates his long career as artist, art educator and aesthetic visionary.

For example, in a 1966 article featured in the text entitled "Control" Ascott states, "to control one's environment is to assert one's existence . . .. Although science will strive for total freedom, it may never be attained. Art, however, provides the means to win this freedom and to act it out – symbolically" (p. 108). Ascott argues that it is through control that we acquire our freedom – this is the "splendid paradox of art" whereby a random "unprogrammed activity" can ultimately generate artwork that exercises "fruitful control" (p. 108).

In this position statement made early in his career Ascott begins to teach us about his vision of art and the role of the artist and art educator within a technological society. As we shall see later in this review, as a cybernetic artist, his way of seeing the world arises from the exercise of modeling reality in reified formations based upon the application of information and systems theory. Thus to equate control with freedom is not problematic. Nor is his vision of our postmodern high-tech society troubled by issues directly related to control, such as the question of freedom in association with surveillance and power. Indeed, according to Ascott, if scientific endeavor has fallen short of its promises to actualize truth and freedom, then our only hope is to experience freedom symbolically within a virtual "place" such as the Internet. Does this mean therefore, that one ought to accept "virtual freedom" as truth?

Such compromises, however, are not addressed in this text. In fact, Ascott idealizes the technological society. In contrast, others have offered a more critical position. Neil Postman (1992), for example, describes the present condition of our society as a "technocracy" – the total surrender of culture to efficient, technical outcomes. Philosopher Don Ihde (1979) explains that presently we are subsumed or embodied within a "technological cocoon" – a "technosphere . . . that contains a presumption towards totality, towards technocracy" whereby "we live and move and have our being among machines" (p. 15).

Phenomenologically, this condition signifies a significant alienation from nature and a deepening in the mind-body split. Therefore it is imperative that we question the simplistic manner in which we have traditionally constructed the nature of technology as simply a tool, but rather understand it to be a complex reflexive social process (Ellul, 1964; Feenberg, 1991; Fromm, 1968; Mumford, 1966; Postman, 1992; Stivers, 1999; Winner, 1986).

Conversely, Ascott challenges artists and art educators to accept the inevitability of the omnipresence of electronic technologies and our technosphere to the extent that, via our technical apparatus, we create "profound and fruitful control on the human situation" (Ascott, 2003, p. 108), a vision that becomes the basis of "technoetic art" and the "telematic embrace." The words freedom, behavior, mechanism and control illustrate core ideas in Ascott's lexicon and weave within the overall tapestry of the discourse featured within the representative texts. In fact, Shanken's opening essay situates Ascott's artistic work and pedagogical writing within a broad context of aesthetics and electronics, self and community, and love and interactivity, qualities that define a "telematic, cyberspatial world." Ascott's work is described by Shanken as "visionary, prescient, presaging and anticipatory" (p. 13). As a futurist, according to Shanken, Ascott's work demonstrates how he endeavored to break the boundaries between art and art criticism. However, Ascott's vision of the expansion of the artist's and art educator's roles is not towards greater social activism or the expression of unconscious psychological drives, but rather towards the exploration of human consciousness via the application of information and computer technologies (ICT), a practice he calls "technoetics" and which he associates with spiritual transcendence. Indeed, Ascott's work can be situated within the tradition of Marshall McLuhan in terms of recognizing how technics changes consciousness and aesthetics and thus challenges the role of the artist specific to the milieu of a technological society.

Ascott, Professor of Technoetic Arts at the University of Plymouth, England and an Adjunct Professor in the Department of Design/Media Arts at the University of California, Los Angeles, has a long and distinguished career as both an artist and art educator. 1 Specifically, he developed a model for art education within the present "cybernatied society" based on the use of ICT called "Cybernetic Art Matrix (CAM)." In 1994 he founded the Center for Advanced Inquiry in the Interactive Arts (CAiiA) at the University of Wales, Newport. As the world's first program on interactive art taught via the Internet it focuses on an integrated method of pedagogy that utilizes aesthetic and cybernetic theories. Four years later Ascott founded CAiiA-STAR, a program co-coordinated by CAiiA and the Science, Technology and Art Research Center (STAR) in the School of Computing, University of Plymouth, England. CAiiA-STAR is an international research organization that disseminates work related to the intersection of art, technology and "post-biological culture." This organization also supports Ascott's "Planetary Collegium" which Shanken describes as a global network of virtual (on-line) "centers" of research that he describes as being "at the cutting edge of art and technology" (p. 74) [see: http://www.planetary-collegium.net/news/]. Shanken explains that Ascott's formal training as an artist was influenced by his practical experience as a radar officer in the British Royal Air Force. Ascott later merged his interest in abstract expressionism, popular art, technology and education with developments in ICT including applied behaviorism and information theory, Artificial

Intelligence (AI) and most important, cybernetics. Because cybernetics is central to understanding Ascott's work, some elaboration would be helpful to the reader.

Constructing Love Through Cybernetics, Telematics and "Fruitful Control"

As a scientific discipline, cybernetics examines effective means to control, predict, and ultimately automate, behavior of mechanical and biological phenomena. It is based on the principles of systems theory (e.g. input/output, feedback and interactivity) and is the foundation of computer-based information processing. A reductionary view of communications, cybernetics emphasizes speed and efficiency of transporting and delivering data. Cybernetics, as described by Pierre de Latil and referenced by Shanken, is "the science of the organization of effects" and of the automatic control of such effects (p. 128). Thus, fundamentally, a cybernetic system associated with the production and processing of data functions as a "control technology," (Benniger, 1986) and reflects a condition of the current Information Society whereby information is produced as a commodity (Lyotard, 1984). Indeed, systems associated with the transportation of information/media, despite possible democratizing effects, are biased towards emphasizing efficiency via the reconfiguration of time and space and the centralization and control of power by the few who have access to such systems (Innis, 1951, 1952). Therefore, telematics, associated with the convergence of computers and telecommunications, is related to the emergence of Information Age economics and the politics of globalization.

The move towards the ephemeral, instantiany and aspatial and atemporal "presentness" is a fundamental characteristic of postmodern reality – a condition manifested by technological apparatus that literally alter our experience of time and place. While such a condition of change is profound its effects nevertheless operate at an unconscious common sense level (Winner, 1986). Ascott, however, is one of the few art educators who articulate the challenges which this aspect of the postmodern condition poses to education. In fact, as noted above, Ascott's background in the engineering of radar systems set the foundation for his interest in the science of cybernetics. Indeed, by the 1960s Ascott had become a prominent conceptual artist associated with cybernetics and cybernetic art pedagogy. His early work indicated how the visualization of language as text and information as data could be employed as artistic expression.

Telematics and cybernetics has been described by science fiction writer William Gibson (1984) in his novel *Neuromancer* as "cyberspace," the development of a virtual reality such as the Internet wherein individuals can "experience" a sense of aspatial and asynchronous "place" and "beingness." However, telematics, as described by Shanken, emphasizes the possibility of a *collective* consciousness, whereas, in contrast, cyberspace relates to the phenomenology of *individual* experience (p. 52). In fact, Ascott was one of the first artists to experiment with how artists can use telematics in the creation of collaborative electronic artworks "that employed the immateriality of process rather than the production of objects" and endeavors to create telematic art that involves

"the unification of minds in a global field of consciousness" (p. 52). And such envisioning is central to Ascott's pedagogical concerns.

Although most research on the sociological effects of media emphasize content (i.e. violence, sexism), the specific technological *mode* of mediation (i.e. telephone, television, Instant Relay Chat) can be generative – the medium is the message (Marshall McLuhan) – largely because communication technologies, as noted above, mediate or constitute our relationship to time and space, the fundamental coordinates of experience (Carey, 1989). Also, form and content are contextualized by how they act to constitute cultural values. For example, in her analysis of the Internet specifically described with the nomenclature "Information Super Highway (ISH)," Jane Kenway (1998) explains how the ISH exists as both a physical artifact (technological infrastructure for transmitting information) and as political discourse, specifically in terms of how the ISH is used to signify progressive educational reform policy.

In addition, because technological apparatus alter perceptions, *techne* can engender subtle but profound changes in consciousness. For example, Ascott envisions the Internet to be more than a technological infrastructure or the expression of social policy. Rather it is a specific mode of communication that has constituted a unique way of "being" and thus a new way of "experiencing" the sensibility of community, a sensibility unencumbered by embodied or physical encounters with others. And, because Ascott's work shares theoretical foundations with conceptual art, especially how art expresses meaning or semiotic systems, Shanken explains that, "whereas conceptual art de-emphasizes the materiality of art objects to interrogate the semiotic basis of meaning, telematic art asks how the semiotic structure of computer networking offers alternative forms of authority, meaning and consciousness in the electronic ether of cyberspace" (p. 86). Telematic art therefore, expresses the utopian aspiration of realizing collaboration and overcoming difference via global connectivity.

Shanken proposes that Ascott's artistic practice and theory can be situated within the context of *avant-garde* art in terms of how Ascott ultimately aspires to create "alternative realities and systems of meaning" (p. 88). Moreover, Ascott explains how his visionary position indicates that the "telematic embrace" constitutes the expression of love. It is a love that "emerges as a digital process of interaction in which exchanges of information creates bonds through shared systems of meaning and value" (p. 86). Therefore, according to Shanken, Ascott's vision offers an alternative to more overt commercial and military applications of ICT.

In his later writings, Ascott explains how the purpose of art, as with technology, is to reveal the hidden or unseen. Artists can thus explore the creative use of technology as tools and systems of esoteric revelation. The camera, for example, and other optical apparatus, is used to expand our vision into the unseen of macro and micro realms. And such practices of revelation are thus situated by scientific theories of quantum physics, relativity and Heisenberg's uncertainty principle, as each of these theories have inspired Ascott's thinking about art, aesthetics and technology.

Ascott's vision of communication technology as possibility -- an alternative social space that actualizes a collective mind and engenders human transcendence of the physical and the mundane -- is typical of other futurists who, as proponents of virtual reality, believe its creation expresses inevitable evolutionary progress in human development. In fact, Ascott believes in the creation of an alternative reality via ICT which actualizes a self-reflective "radical constructivism" -- literally the construction of our own world.

Why is it assumed that such self-awareness can only be manifested within the context of virtual reality? Moreover, within such a "place" our sense of beingness is exacted via navigation through layers of data. Our becoming is the act of co-production of an artificial world, a world of absolute representation. And yet Ascott believes this "experience" ultimately expresses human freedom. Also, in spite of the fact that Ascott's work has sought to overcome the problematic of representation in art -- the art object as moribund in the face of art as pure process -- the paradox is that even when immersed within process, one still remains within the realm of representation. The "space" that we "experience" when using the Internet is wholly representational – pure construct. Another paradox arising from Ascott's artistic work and writing, is that despite emphasis on the postmodern sensibilities of uncertainty, indeterminacy, instability, and such, cybernetics is ultimately a process of control.

Also, although in his writings Ascott has expressed concern for the colonization of ICT by commercialism and commodification, the very processes by which such systems operate – decontexualization, pastiche, deconstruction, churn of the new as constant change -- act to reify artistic endeavor as mere fodder for a system of cultural production. In the sensibility of Baudrillard's (1983) vision, such a condition creates a simulacrum – a production system of signs within which the original has lost legitimacy and purpose and the differentiation between the simulated and the real has deteriorated to the degree that the former surpasses the latter in terms of cultural salience.

Moreover, in his critique of power/knowledge, Michel Foucault notes how knowledge production can operationalize and normalize a system of control (discipline) that possesses an autonomous characteristic. This characteristic has been identified by Foucault to operate as a panopticon system of surveillance in which the individual internalizes the system of observation (inscription) and thus ultimately participates in his/her own oppression. It is a perfect system of passive but effective behavioral control -- a social cybernetic matrix. But Ascott does not perceive such dangers – the dark side of our technologies. This is exemplified in the following quotation regarding the evolution of photographic technique.

The golden age of electronic, post-biological culture may not be far ahead, but the world of digital photography is opening up just as the world of analogue photography (as it has been practiced) is, if not closing down, then being absorbed within the digital discourse. We are at the beginning of the era of post-photographic practice. . . . photography as a stable medium is giving way to a practice that celebrates instability, uncertainty, incompleteness, and transformation. . . . What has changed, though, from the old economy of the image is that the processes of transformation I have described are now in the hands of the viewer as

much as the artist. Or are *implicitly* so. And, just around the corner, not yet playing peek-a-boo but close to doing so, is the artificial observer, the eye of the neural net, the artificial intelligence that will surely become a part of the observing system. But that's for the future (author's italics, p. 248).

Ascott's vision indicates that we are engaged in an endless process of de/re/construction. Despite the flux, however, I argue that such a condition expresses containment versus freedom. As our lives become monitored, observed and processed, human endeavor exists as a dutiful performance act for a silent observing digital eye. Why would anyone call this condition progress and willfully accede to its "inevitable" development? Perhaps such unconscious acceptance of the technical having penetrated into the liminal spaces of the lifeworld bears witness to our cybernetic conditioning, to the efficient beauty of the panopticon system itself.

Also, Ascott believes that art is a *system* that transforms behavior and consciousness, and thus assumes that the cybernetic principle of feedback has an aesthetic dimension that is related to the changing role of the observer/viewer from that of a "mere voyeur" to an "active participant." Also context is defined as an information feedback *system* that sets up a conditional given that can be altered and "controlled" by the user/observer. Within this conditional situatedness, it is assumed, the user/observer becomes engaged by the given choices and therefore is "empowered" rather than manipulated. Moreover, the inherent limited dynamics of Ascott's systems of "fruitful control" are not recognized as such, but rather celebrated. One might be confused by the fact that the notion of freedom is turned on its head and that such a condition is celebrated. The ideal of human freedom is no longer a principle that guides one's being and lived experiences. Rather it is a mere construct, an ideal reduced not just to semiotics, but to algorithmic elegance. Indeed, such clever reconfiguration, and Ascott's rather unconscious celebration, may indicate a profound bankruptcy of imagination, a vacuum signified by the fact that our technical apparatus, as a means towards technologizing transcendence, has become the new electronic god, a factor we shall return to later in this review. For now, it is important to note how the peculiar social vision arising from Ascott's romance with telematics is not only post-biological but also post-political.

Telematically Embracing the Disappearance of the Political

Ascott explored art not so much as a production of artifacts/products but rather as process and therefore anticipated postmodern theory's emphasis on the idea of textual analysis and its association with constructivism, semiotics and positionality. Shanken, however, points out that Ascott's emphasis on binary oppositions and his belief in scientific progress "suggest continuities with the liberal humanist values associated with modernism" (p.47). This is, in fact, a very important point which illustrates a core paradox of Ascott's work: While celebrating postmodern flux he holds on to the modernist telos of transcendence – specifically transcendence via techno science. But Shanken does not elaborate on this factor. Indeed, if there is a weakness in Shanken's introduction, it is that he is too eager to dismiss critics of Ascott's work.

For example, a close examination of the expression of audience participation within the context of cybernetic theory applied to artistic aesthetics is never examined: Are we to believe that a closed system of predetermined choice equates to freedom? Are we experiencing the essence of our political freedom when we press our remote controls or hit the delete button? Is it truly possible to experience community within virtual space, social "places" bereft of a moral reality as experienced in physical places and in face-to-face relationships – elements which create the basis for experiencing social reciprocity?

Also, despite the fact that Ascott perceives that ICT, as media, are changing our relationship to time and space and thus consciousness itself, his simplistic understanding that technology is only a positive force is never interrogated. Nor is Ascott's engineering approach to aesthetics. Nor is his overt technocentric social vision or the didactic manner in which he presents his social vision. Indeed, although Ascott has obviously made some remarkable contributions to art and art education, many of the featured articles read as a manifesto to *technique*, a social ethos dedicated to total efficiency (Ellul, 1964). For an artist-theorist who is a proponent of interactive participation and collaboration, his rhetorical position ironically communicates a language of inevitability. Although Ascott indicates that he urges artists' involvement with ICT so as to exact a futuristic vision that will counter and arrest the dominance of corporate usage of such systems which further commercial interests and its trivializing effects, his own techno-utopian position does not offer the artist/audience as *citizen*, space to negotiate their own vision of the future. The underlying message is: The future is only techno-utopianism and you will like it.

In addition, while Ascott and Shanken are quick to label critics as elitist, Ascott's techno-utopian vision involves only the wealthy – "members of the new leisured class" (p.135). While there is reference to a "future economy of abundance [that] means a life of personal choice" (p. 165), there is no reference to those who are politically disenfranchised or economically marginalized. Also, because his vision emphasizes *technique*, its foundation is based on an abstractness that belies his social-utopian intent. The use of powerful ICT systems to create elaborate models and permutations of gaming and systems theories, the emphasis on distance learning and virtuality – while preparing the way to normalize the idea of a posthuman era, which Ascott predicts is both inevitable and positive – does little to address pragmatic social and economic issues related to many children and their families within the context of the post 9-11 economic decline and sociopolitical anxiety. Ascott's vision is not so much egalitarian as it is fundamentally elitist and libertarian.

Moreover, Ascott's educational endeavors (e.g. CAM and CAiiA) are aligned with technocentric official reform policies (e.g. *Nation at Risk; Goals 2000; No Child Left Behind Act*) which emphasize a functionalist position regarding the purpose of education and which focus on the need for students to acquire skills that will make them competitive within a global market economy dominated by both corporate and government controlled technological systems.

Also, reading through Ascott's writings, one gets the sense that he is enchanted by change and the aggressive momentum which SICT

imposes on the rate of change. Such a position expresses a peculiar violence to tradition, mores, history and the lifeworld in general. The question, What shall we preserve? is never posed and it seems would only raise the specter of technophobia. In fact, the totality of his work as expressed in this text indicates that Ascott has a kinship with other techno-utopian futurists who embrace a technological based post-humanism. 2

Techno-based transcendence is central to Ascott's vision of the purpose of telematic art and pedagogy and thus I shall provide the reader a context within which they can situate this aspect of Ascott's work.

Celebrating Techno-Based Transcendence

Historian, David Noble (1997) indicates how techno-utopian envisioning arises from a long tradition in Western culture that entails the scientific quest to recover a "prelapsarian utopia" (Garden of Eden). It is a quest that displaced women, the feminine/Earth and eventually a God-centered cosmology with positivism. Noble explains that, historically, this quest is akin to a religion and that despite its appeal to spiritualism and transcendence, it is not in fact about the human condition at all. Noble explains that, "these technologies have not met basic human needs because, at bottom, they have never really been about them. They have been aimed rather at the loftier goal of transcending such mortal concerns altogether." He concludes that what he calls "the religion of technology" can be considered a menace as it often displays "a pathological dissatisfaction with, and depreciation of, the human condition. They are taking flight from the world, pointing us away from the earth, the flesh, the familiar" (p. 207).

This peculiar Archimedean point has evolved to express Western cultures' relationship with Nature – the will to control, conquer and supercede it – and our disassociation and the consequent devastating ecological crises. In consequence, the male-centered culture of engineering has excluded women and the feminine in general and signifies the devaluation of the body and earth while emphasizing the abstract, mathematical realm (Hacker, 1981). As such, it is a quest to reconstruct a more perfect world, a world where engineers are the "magi of modern industry, destined to restore mankind's dominion over nature and regain the presumed primal male monopoly over the arts" (Noble, 1997, p. 223).

In fact, a relationship exists between the rendering of our conceptualization and representation of space through art and the development of modern science (Wertheim, 1999). While pre-Renaissance thinking was dualistic, characterized by distinct realms – that of the mundane earthly reality and the immaterial realm of thought, feeling and spirituality, modern scientific thought reconceptualized space as having an end point. This shift is related to the visualization of space via the technology of perspective. As a technique, perspectival rendering of space positions an observer's standpoint both outside and within a painting and thus operationalizes the experience of objectivity (Wertheim, 1999, p. 38).

Thus, historically, artistic expression and scientific theory have become amalgamated via the aesthetics of space. Presently, quantum physics,

which relativizes space as hyperspace, is now given expression via the development of cyberspace/Internet. According to Wertheim (1999), the cultural vacuum left by the omission of spiritual space from the Western worldview has been filled by the immateriality of cyberspace – your Internet provider is now the gateway to postmodern spirituality. Similar to the Pythagorean conception of the soul as expressing the beauty of mathematics/numeracy, the vision of a cyber-soul is also mathematical, digital to be exact. However, there is one very important difference -- it is without the moral or ethical dimension (Wertheim, 1999, p. 271). Moreover, humans are not defined by their "wetware" or bodies but rather by their "software" or information/code -- the post-biological transformation that is necessary for cyberspace-based transcendence. For example, Ascott, speaking for artists, states that, "We want the systems interface set within our brains. We want the boundaries between 'natural' and 'artificial' to be as redundant technologically as they are becoming conceptually and spiritually. This is to talk about the post-biological body as interface" (p. 278).

But what do the ideas of the post-human and post-biological mean in terms of the pragmatic needs of people? How do they position artists and educators? How are we to respond to Ascott's "telematic embrace" – to the idea that ultimately humanity can experience love in the act of technology adoption? I suggest that to ignore or dismiss Ascott's work as "mere science fiction" or technocentric hyperbole is a dangerous mistake. Rather, we are wise to engage his vision with thoughtfulness. Ascott, in fact, fully recognizes the centrality of his work and indicates that "the technocentric principle will be at the center of art as it develops, and consciousness in all its forms will be the field of its unfolding" (p.361). He further advises fellow artists that, "Art now inhabits both the interspace between material and immaterial worlds and the interstices of the many disciplines of mind and body. . . . To deal only superficially with science and technology is more destructive than to leave it alone entirely" (p.355).

In fact, in terms of education's general position, educational theorist Michael Peters (1996) explains how the amalgamation of science, technology and education has created "enterprise culture" whereby, within the context of post Fordist economics and an Information Society that commodifies knowledge as information (Lyotard, 1984), education has been reconstructed to serve the needs of a globalized market economy and corporate interests. Although this functionalist perspective is evidenced in American educational reform policy (Ferneding, 2003), how Ascott's particular vision of art education may support a functionalist position is not acknowledged.

In addition, Ascott does not consider how in our quest for immortality via *techne* (for an elite few of course), we could become contained and ultimately controlled by the artificial systems we have created. Rather, he seems to be hedging his bets that systems of technological control are inevitable and that an artistic approach is the best way for humans to accommodate the situation. However, Ascott's and other techno-futurist's visions stand in stark contrast to one of the first visionaries who wrote about the telos of the technological society. The narrative of autonomous technology, for example, portrayed by Mary Shelley in her 1817 book *Frankenstein, or the Modern Prometheus*, warns about the need to take responsibility for our inventions or risk the tragedy of being

controlled or destroyed by them (Winner, 1977). Indeed, the efficient cybernetic system where human actions and desires are both contained and notated as data via a surveillance society may take us somewhere between the visions portrayed in Orwell's *1984* and Huxley's *Brave New World*. Morover, although one may support Ascott's enthusiasm in the face of present postmodern funk, the intensity of his enthusiasm belies a peculiar dogmatism. His references to shamanistic insight ("shamantics"), transcendence via telematics and telepresence ("psibernetic phenomenon") towards the creation of a "telenoia" that celebrates a networked consciousness and "technostic revelation" (the practice of having "esoteric, occult, spiritual knowledge revealed through technology") (p. 381) offer more than a unique cyberspeak nomenclature – it is idolatry of the technical.

Indeed, Ascott's "visionary pragmatism" (p. 367), a techno-utopian position, whereby artists engage in "working with the future in the present" and combine the visionary capabilities of shamans and Gnostics with the practice of science and engineering is, "an attribute to be fostered in all aspiring artists" towards the end of realizing transcendence via the "telematic embrace." Such visionary pragmatism, writes Ascott, has moved the consequences of the "screen-based immaterial world into the re-materialization of culture involving molecules and atoms, nanotechnology and neurons." Ascott believes that visionary pragmatism "corners the nihilism and despair of late postmodernism and springs forth into the post-biological culture with a radical constructivism. It's a case of 'bye-bye Baudrillard' and signals a reversal of the sense of terminal decline that characterized art at the end of the preceding millennium" (p. 367).

But Ascott's dismissal of Baudrillard, and others who are critical of commodity culture and technocentrism, as being unnecessarily pessimistic is suspect. Technological pessimism is central to the postmodern condition (Segal, 1994). Specifically, it is to recognize the power which existing military and industrial technological systems hold over the lifeworld – a technological apparatus of centralized power over which one has very little control. Nevertheless technological pessimism illustrates a political awareness and the awakening of voices on a global scale that act to counter the dominant technical rationalist discourse. Much of this political awakening is expressed via feminists, ecologists and those who endeavor to protect the integrity of cultural and linguistic identity within the exploitive context of globalized commercialization (Ezhari, Mendelsohn & Segal, 1994). Indeed, technological pessimism is related to the fact that a techno-utopian discourse does not address the fundamental needs of the human condition and that a technological fix will never adequately address political and social crises. This awareness has in fact been evidenced in the perceptions of K-12 teachers (Ferneding, 2003).

Also, Ascott fails to address the challenges encountered within cyberspace in terms of it actualizing a New Jerusalem and participatory democracy. Historically, egalitarian social systems, over time, generate means for re-establishing authority and exclusivity (Connery, 1997). The Internet, as a social space has not escaped this tendency as indicated by the growing presence of pornography, hate groups and social stratification in terms of specialized interests and political positions including cybermysogny. Although accessible as a commons or public

space, cyberspace has largely been colonized by the commercial sphere. The Internet does not inherently exemplify a vibrant pluralism but rather can function as a site of colonization and imperialism of Western culture and a general "museumization of the world" (Sardar, 1996, p. 19).

Techno-Terrorist Visionaries and the Future of Art and Art Education

While Ascott does not engage issues related to the political potential of cyberspace, he does offer a manifest destiny by means of his "Planetary Collegium" which he describes as "the evolutionary projection of this late twentieth-century university venture into the post-institutional space of the twenty-first century – a century in which the old academic orthodoxies have to be replaced by a creative research organism fitted to the telematic, post-biological society" (p. 368). In fact, Ascott, taking the role of the harbinger of the inevitable, perceives his position as the leader of a "minority terrorist group" within the art education community, a group, which he describes as being "understood today to be necessary and inevitable, [and] will tomorrow become widespread in the art education establishment" (p. 314).

Ascott explains that young people today are immersed within RL(real life) and VR (virtual reality) or "inter-reality (IR)," and thus it is imperative that educators, especially art educators, recognize this and change their curriculum and teaching practices to accommodate this factor. He states that the "bit stream is replacing the structured discourse" (p. 316) and that "if the poets, artists, and musicians of the world are not ready with strategies to effect this environmental and ecological digitalization, the politicians, merchants, and entrepreneurs will. In this context, art schools have a clear necessity to put up or shut up" (p. 317). Moreover, Ascott believes that the "old institution of art education is in tatters, its insolent subjectivity turned in upon itself, its adoration of the object enfeebled and derided" (p. 312). The situation is such that it is hopeless to try and change such "tombs of irrelevance, tarnished ivory towers" and thus it is necessary to create a new learning institution based on the use of ICT, hence the Planetary Collegium.

Ironically, Ascott's techno-spiritualism does not enable him to transcend his neo-conservative position. While his view of technology reflects that of the sacred, it is bereft of social responsibility and political sensibility. For example, he explains that, for artists, both representation and politics are passé and that, "Questions of representation no longer interest us. We find no value in representation, just as we find no value in political ideologies. We do not wish to keep up appearances" (p. 287). Such an apolitical position is typical of those seduced by the presumed power of the "technological fix" (Winner, 1977).

Ascott's post-biological and post-political vision unfolds like a sci-fi narrative and thus its dénouement proceeds to its logical end -- the application of new technologies to create "the metaphors of a new nature, second order nature, emergent nature, Nature II, a new creativity whose 'engines of creation' will embrace artificial life" (p. 331). Because such thinking raises the specter of ancient taboos, Ascott explains that hubris is a myth in the full sense of the term. The intervention or participation in the creation of life, signifying a forbidden act of hubris, is nothing less than "a superstition," and that it is a silly idea to label such intention as a

"sin against the gods!" (p. 331). Indeed, he believes that the legitimation of such activities arises from human expression in the form of new religions and in "new movements in art as much as science and technology" (p. 331). However, one could argue that Ascott's position demonstrates the arrogance that inspires hubris.

In general, Ascott's work as represented in this text, seems not so much an organic creative endeavor as much as a tautology, much like a fine-tuned self-correcting cybernetic system. Indeed, resistance to the technocentic way of knowing is not understood as having validity. For example, lack of artists' participation in the creation of the techno-utopia, he predicted in the mid 1960s, would condemn art to exhaust itself in the dead-end act of producing an endless repetition of past aesthetic styles repurposed as "the new" (p. 130). Although, as Shanken notes, given what has transpired over the years Ascott's prescience is notable, what Shanken fails to explain is that such an outcome did not arise from resistance to the development of a "technocracy" (Postman, 1992). Indeed, the cooption of art arose from a position of accommodation versus critical reflection regarding the intersection of technology, science and society. Art, having lost its redemptive purpose within the context of commodity culture, was doomed to be repurposed as mere entertainment and diversion. Art, as have so many other expressions of the lifeworld, has, to a great degree, been colonized by the effects of the very process Ascott has learned to love – specifically, the science of advertising and marketing which exist as a cybernetic system of cultural production and feedback.

In fact, the commodification of artistic expression has had a devastating effect on society and the human condition, as the dialectic between forces of control and the struggle for human freedom collapse under the weight of banality – a self-destructive act tragically enacted by artists themselves. For example, in a book entitled, *The End of Art*, art critic and historian, Donald Kuspit (2004) explains that "postart" or conceptual art epitomized by the work of Andy Warhol, signifies the dispelling of the unconscious from the experience of art – "semiotic wit replaces the dream's wit" (p. 105) and with it the notion of authenticity and the artist's disruptive role in society to render the unknowable, mysterious and powerful forces that underlie and manifest reality. Having abandoned its existential edge and endeavor to signify transcendence, mystery and the sacred, art has become pedestrian, trivial and reflexively banal (Kuspit, 2004).

Kuspit (2004) also recognizes how the post-artistic condition is both reflective of and embedded within the technological society. Indeed, artists who engage the latest technology as art operate on the level of "technocrats" who seek "the instant marketability of any technical gimmick" (p. 106). For Kuspit, technology has replaced not only theory and social criticism, but also the unconscious. Kuspit relates this condition directly to the will to administer and control. Kuspit (2004) explains his point as follows:

> Technology is the last valiant attempt to discredit and
> devalue the unconscious, while offering an alternative
> inspiration. It is the deliberate assassination under the
> guise of re-modernizing modern art, presumably *passé*
> and old-fashioned in postmodernity – a retooling of

> modern art to bring it in line with what appears to be the
> dominant concerns of society. But fear of the unexpected
> and uncontrollable – all that Redon meant by the
> unknowable and mysterious, and what the everyday mind
> thinks of when it thinks of the unconscious – underlies the
> post modernization of art. . . . And in the postmodern
> world, even more than the modern world, control and
> administration (pseudo-mastery one might say) are all,
> indeed, seem to have become the be-all and end-all of life
> (p. 108).

Within the context of such a controlled and administered society
revolutionary modern art is "tamed" and transforms into "postart." Based
on Kuspit's assertions, it seems that society operates like a "flux
machine" - the manufacturing of superficial change that unwittingly
sustains and nurtures the existing structure of power.

Kuspit's perceptions about the end of art are especially important to
educators. How are we as educators and as art educators to reconcile the
techno-utopian vision offered by Ascott with Kuspit's insight into
"administered society"? What curriculum can address the concerns
germane to the context of an administered and technological society and
postart? And within this given context, what is the role of the artist -- a
clever entrepreneur and "visionary pragmatist" who engages in the
creation of "technostic revelation?"

But in this text Shanken does not provide a deeper critical analysis of the
broader meaning of Ascott's work. And the reasons for this, I leave for
the reader to ponder. It is clear that Ascott's didactic philosophical
position does not offer the reader a means to develop a dialectical
position on the issues raised in this text. Thus, it is recommended that
this book be contextualized by other writers who question techno-
spiritualism, a post-human and post-biological social vision, and who
interrogate the celebration of commodifying practices within the realm of
art.

In conclusion, the significance of Ascott's work for art educators and
educators in general is that it stands as a compelling example of
technocentric discourse within art and art pedagogy. Given this
condition, I recommend that the curricula of art education and aesthetics
address the nature and ethics of technology and science. Indeed, as
indicated above, the unique contribution that Ascott has brought to art,
aesthetic theory and pedagogy cannot be dismissed. Nonetheless, it is
imperative that educators question the Procrustean bed he has built for
art and art education. This can only be achieved if his ideas are actively
engaged and not blindly accepted or summarily dismissed as "mere
science fiction." No matter where one stands in terms of Ascott's
position on telematic art and pedagogy, the fact of the matter is that
SICT, biotechnology and other emergent applications of computerization
and technical apparatus are challenging the foundations of our world – a
world that appears to reflect Ihde's (1979) "technosphere" whereby "we
all have our being among machines" (p. 15). Ascott's call to fellow artists
and educators is that no one can simply put one's head in the sand – one
shall find that proverbial space is wired as well. Whether unconscious or
not, each of us are participants and carry the burden of responsibility for
our inventions and their inherent power. As noted above, *techne* as a

mode of revealing expresses possibility. Therefore, the issue presently at hand is not about how we may define representation, but rather how we choose to name our position with regards to the experience of our inventions – to *technics* itself -- as being the magician's apprentice, or not.

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1. Ascott has also held positions as the former Dean of the San Francisco Art Institute, and the President of the Ontario College of Art, Toronto, Canada. In addition to *Telematic Embrace: Visionary Theories of Art Technology and Consciousness*, Roy Ascott has produced other works on the intersection of art, technology and aesthetics (e.g. *Technoetic Arts* (2002); *Art Technology Consciousness* (2000); *Reframing Consciousness* (1999); and *Art & Telematics: toward the Construction of New Aesthetics* (1998).

2. For example, Ray Kurtzweil (1995) and Extropian Hans Moravec (1988), electrical engineers (music synthesizer and robotics respectively) have written books which depict a quasi-religious social vision immersed within technologies of transcendence (e.g. Artificial Intelligence, nanotechnology, bioengineering) and indicate the inevitability of a post-human and post-biological future.