

Tim Hawkinson's *Emotor* (2002) has a title that refers to both a mechanical function and what the mechanism is meant to express. As he tells Art21, "It's something that emotes, and it's motorized..." (1, 178). The piece is composed of altered ink-jet prints, plastic and foam core on panel, a monitor, a stepladder, and mechanical components (13, 202). The print is a photographic representation of the artist's face, in which the features have been cut up – eyes, ears, nose, mouth – and reassembled with hinges (13, 202). A network of gears and electronic mechanisms are attached to the pieces, creating a two dimensional puppet of Hawkinson's face. The hydraulic gears "...are driven by light sensors attached to the screen of a television that is tuned to a broadcast program," translating the patterns of light and dark in to motion signals (13, 22 / 202). Although its feature object is essentially a portrait of the artist, he maintains that the artwork is not autobiographical, but really "...about our identity and our experiences within our bodies, and our bodies relationship to the external world" (1, 179). Like most of Hawkinson's pieces, *Emotor* seems to critique the unpredictable ways in which the technologies of postindustrial society have obscured and distorted the perception of the corporeal self.

The artwork uses the digitally manipulated photographic representation of a human face and a common television set to evoke the distorted emotionality of people living in an age of mediatized culture and technocracy. It shows the face contorting into electronically synthesized expressions, as the artist comments: "I can't make most of these faces myself" (1, 179). *Emotor* shows how one of the most fundamental technologies of mediatization has already altered human

perception, which brings awareness to the degree of virtual experiences resulting from contemporary digital technologies. The work reveals a critical perspective of the HCI, and draws upon the conclusion that its future lacks any recognizable notion of human experience. In this sense, technologies such as VR entertain the imaginative concept that cyborgs will one day dominate civilization, Hawkinson's practices are "...an extended meditation on the increasingly cybernetic nature of our society – an examination of the fact that, as the rapid globalization of the world continues to develop, human beings have become even more densely interconnected through multiple forms of technology" (4, 68). The artist frequently represents his body using digitally manipulated photographs and pneumatic sculptures to show how technological processes can abstract the human form beyond personal identification. This blurring of identity also "evokes a world existing well beyond the human realm by creating cyborgs, strange hybrid organisms that suggest linkages between human beings, animals, and machines" (4, 68). An early piece, *Untitled (Chicken)* (1986) is composed of a varnished chicken skin stretched on a wire frame. The form suggests "a half-organic, half-metal airship" and offers an "evocative critique of the mechanization of agriculture" (4, 68). The fantastical image of a cyborg (bionic human) is a critical subject of Tim Hawkinson's work, especially that which integrates robotics into formal media such as sculpture and installation. Similarly, Ken Rinaldo juxtaposes robotics with sophisticated computer software to animate sculptures at the command of marginally intelligent fish. By using robotic media, both artists work to express "...deformation or devolution as the result of

technological manipulation. Technology, as these works suggest, affects human development in profound yet unpredictable ways” (4, 69).

Ken Rinaldo’s *Augmented Fish Reality* (2004) is an installation composed of five robotic sculptures within a perimeter of rocks. The form conveys the image of a garden, or a courtyard, and isolates the sculptures’ environment from that of the viewers. The sculptures themselves are essentially fishbowls attached to metal tables that are about waist height, and have visible wheels and wiring. The bowls contain Siamese fighting fish, and peace lilies adorn each of their environments to help absorb their waste fluids. *Augmented Fish Reality* “...is an interactive installation of five rolling robotic fish-bowl sculptures designed to explore inter-species and trans-species communication” (10, 122). The bowls allow the fish to pilot their environments, using intelligent hardware and software. The design “...employs four active infrared sensors around each bowl which allow the fish to move forwards and back and turn the bowls. By swimming to the edge of the bowl, the fish activates motorized wheels that move the robots in that direction” (10, 124). The bowls, as one might imagine, do not move often or even noticeably sometimes. However the particular species chosen for this artwork is known to have exceptional vision beyond the water, and the fish react to visual stimuli occurring from both the gallery traffic, and from other fishbowls. The interactive feature of this installation is live video. Each fish bowl is equipped with a tiny camera pointed outward to record the viewers’ interactions with the fish, which are projected onto screens throughout the room. This component mimics the “fish reality” for the viewers, who become subject to experiencing a spectacle-like display of their responses to the artwork.

This piece uses the domestic object of a fishbowl to skew the species relationship between “aquatic pet” and human “owner”. It employs the humorous notion of giving a fish agency over the location of its environment, but perhaps this is also a reflection on the effect new media interfaces have on human will. When similar interfaces are designed for people to experience, the dialogue between program and user directly entertains the realm of a user’s reasoning and responsiveness. The HCI (human-computer interface) of Virtual Reality reveals “...technology as capable of objectifying – better yet, transparently merging with – mental processes” (12, 58). The inventor, Jaron Lanier describes that its “...capabilities did not distinguish between internal mental functions, events, and processes and externally presented images” (12, 58). The evolution of the pre-Industrial human need to control neurological and biological processes is not only the subject, but also the substance for telematic artist, Eduardo Kac. His transgenic art reveals a dialogue between humans and telerobotic interfaces for the purpose of manipulating life itself: genetic engineering.

Eduardo Kac’s, *Genesis* (1998/99) is an interactive installation that uses particular objects and elements to provide an accurate representation of postindustrial technologies. It is a transgenic artwork that “...explores the intricate relationship between biology, belief systems, information technology, dialogical interaction, ethics, and the Internet” (2, 17). The key component of the work is the “artist’s gene,” which is a synthetic gene Kac invented by translating a sentence from the biblical book of Genesis into Morse Code: ““Let man have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moves upon the

earth” (2, 17). The Morse Code was converted into “base pairs” according to a conversion principle customized for this artwork. Kac writes that Morse Code was chosen because it was “...first employed in radiotelegraphy, it represents the dawn of the information age – the genesis of global communications” (2, 17). The piece used familiar technologies such as live video and audio in tandem with the Internet, which “...enabled local as well as remote (Web) participants to monitor the evolution of the work” (2, 17). The gallery display “...consisted of a Petri dish with the bacteria, a flexible microvideo camera, a UV light box, and a microscope illuminator. This set was connected to a video projector and two networked computers. One computer worked as a Web server (streaming live video and audio) and handled remote requests for UV activation...” (2, 17). The scientific function of the UV light was to provide a sort of “energy treatment” for the bacteria, but because its frequency could be controlled by almost anyone at any time, the impact of the light disrupted the DNA sequence, which accelerated the mutation rate (2, 17). The second computer in the display was responsible for DNA-synthesized music: “Using the sequence of the Genesis gene, the music was generated live in the gallery and streamed on the Web. The parameters of this multi-channel composition were derived from bacterial multiplication and mutation algorithms” (2, 18). Much like the amusement of making a fish the pilot of its own bowl is the gesture of giving bacteria the opportunity to compose and perform music. Both Rinaldo and Kac reveal that new technologies are capable of performing sophisticated functions that are as absurd as they are intelligent.

This artwork combines the principles of trans-species communication and the HCI to describe the possibility of age that conducts scientific and medical procedures remotely, as some contemporary practices in the field of psychology are already doing via the Internet. *Genesis* proposes that the future of the HCI is not the immediate evolution of a cyborg race, but a period of experimentations with robotic software that have the effect of extinguishing the physical human presence. As Kac mentions above, his artwork unavoidably deals with “belief systems” and “ethics”:

“No doubt Kac’s gene, much like the techniques of genetic engineering itself, ‘creates’ a new being, but in its manner of creation it also discloses technoscientific manipulation and even calls it into question” (16, 97). When interacting with a piece such as *Genesis* one brings to mind contemporary ethical concerns in medicine, from abortion to human cloning. It challenges belief systems surrounding the globalization agricultural practices of genetically modifying staple crops such as corn and rice. Perhaps the same mode of narcissism Tim Hawkinson employs in his work with the body exists within *Genesis*, forcing the viewer to confront an already abstracted reality due to “the pace of technological change and regulatory uncertainty” (11, 265). However, it is the predictable aspects of the technologies employed in *Genesis* that restore artistic integrity and authorship to the work.

As the fusion of science and art invites the viewer to choose one discipline over the other, the levels of interactivity explore the question of authorship, or “responsibility” in new media art forms: “Kac questions the ability of telematics to change the conventional relationship between artist and viewer. Kac asks rhetorically whether the artists who produce such works do not ‘restore the same hierarchy they

seem to negate by presenting themselves as the organizers or creators of the events they promote – in other words, as the central figure from which meaning irradiates.’ Arguing that they do not, Kac explains that the telematic artists creates a context in which networked telecommunications transpire, ‘but without fully controlling the flux of signs through it’ (2, 83). Since the participatory happenings of the 1960s to the video art of the 1990s, there has been the necessity of the “present” viewer to complete the new media artwork. In the case of artists working with telecommunications media, Kac concludes that he or she ““gives up his or her responsibility for the “work,” to present the event as that which restores or tries to restore the responsibility...of the media” (2, 84). Through an interface that encourages participants to engage in the creative process of an artwork, it should be assumed that in addition to complete control over the juxtaposition of concepts and materials, the artist places restrictions on the degree of interactivity. The models of telerobotic agency found in Kac’s artwork “...shed light on the philosophical, ethical, and aesthetic limits of active-passive telerobots and offer alternative structures for the creation of knowledge and being at a distance” (14, 65). Computer software and the Internet by nature allow for the structuring of user restrictions, although the complexity and sophistication of many interfaces have the effect of being limitless. Lev Manovich approaches the topic by distinguishing a “closed” from an “open” interaction as being that which “...uses fixed elements arranged in a fixed branching structure (12, 40). A good illustration of a “closed” interface is the basic technology of a video or computer game, which is highly codified and rule-based. The user is given a discreet set of variables in the controlling of a video game character, and

“...they effectively respond to the few things the user is allowed to ask them to do: run forward, shoot, pick up an object. They cannot do anything else, but then the game does not provide the opportunity for the user to test this...In short, computer characters can display intelligence and skills only because programs place severe limits on our possible interactions with them” (12, 34). In the case of Eduardo Kac’s *Genesis*, the limitations put on user are comparatively extreme, but this is quite possibly how the piece maintains its artistic integrity, and distinguishes it from the world of commodity.

Telematic art capitalizes on the democratic nature of new information technologies, and is intrinsically linked to the mindset of a post-industrial era that places value on individualization over mass production. The term “...refers to the conjunction of computers with telecommunications,” and was popularized by the well-known 1978 report by Simon Nora and Alain Minc (14, 65). In practice, the technology of telematics and telerobotics naturally complicate the human and political implications of agency. The matter of agency is relative to both personal and global experiences, and the pace and capabilities of telecommunications are such that there is an overriding fear and legitimate danger of their misuse. Issues surrounding copyrighted media, privacy, and other security-related criminal acts (such as “hacking”) have already been dramatized in recent Hollywood movies and news broadcasts for the past ten years. In comparing this technology with those that fueled the industrial revolution, Nora and Minc claimed that it ““will have wider consequences’: Above all, insofar as it is responsible for an upheaval in the processing and storage of data, it will alter the entire nervous system of social

organization” (14, 66). The artist who works in telematic media expands on the “...tendency of twentieth-century experimental art to make the viewer an increasingly active agent in aesthetic exchanges” (14, 66). While it draws upon the philosophical foundation of the spectacle-oriented performance art of the 1960s, it is safe to say that collaboration between artist and viewer has reached new aesthetic expectations as well as social objectives with the practices of telematic media. Credited as the pioneer of telematic art, British artist and theorist, Roy Ascott observes similarities between this problematic notion of collaboration and historical social thought. Drawing upon Bertolt Brecht’s theory of two-way communication in the midst of the rise to power of National Socialism, he concludes that the functions of telematic art, “...and the transformations they propose in the social order have provocative political ramifications” (14, 67). This concept is best illustrated through the example of “net activism,” in which “more or less isolated groups of individuals, caught in the liberal-democratic consensus, working outside of the safety of Party and movement” use the tactics of telecommunications to discuss and distribute their political beliefs (11, 259). As protesters in the 1960s produced an image-heavy idealization of social activism, “net activists” of today fall into the same unavoidable traps of fashion and faddism. Acts of terrorism are a concerning trend, as the tactics of both old and new activists are not devoid of destructive tendencies: “hacktivists” such as Mafiaboy (2000) have resurrected the approach of the Weather Underground Organization (1969-1976), (11, 269). In contemporary activist politics the only difference between bombing an abortion clinic and sending out a computer virus to “evil” corporations is the potential loss of human life. The U.S. government has responded accordingly with

new policies regarding electronic law enforcement such as the National Plan for Information Systems Protection, proposed by former President Bill Clinton in January, 2000. New media artworks, especially those that employ the HCI (human-computer interface) perpetually confront the conflict between agency and control experienced by both artist and user. They embrace the necessary restrictions of their interfaces while indicating the limitless potentialities of future technologies, already seen in the “open” instances of AI (artificial intelligence).

In addition to technical structuring, the restrictions involving scale are most apparent in the experience of telematic art. Lev Manovich discusses the idea of “scalability” in new media, which refers to the fact that “different versions of the same media object can be generated at various sizes or levels of detail” at the command of the user (12, 38). He uses the metaphor of the a map to further describe this principle: “If we equate the new media object with physical territory, different versions of this object are like maps of this territory generated at different scales. Depending on the scale chosen, a map provides more or less detail about the territory. Indeed, different versions of a new media object may vary strictly quantitatively, that is, in the amount of detail present: For instance, a full-size image and its icon, automatically generated by Photoshop; a full text and its shorter version generated by the “Autosummarize” command in Microsoft Word...” (12, 39). The medium of digital photography represents images in such detail that they practically strive to be three-dimensional, which is to say that there is an excess of information for the simple recognition of an image. Perhaps this extraneous data provides an altered viewing experience, and makes the digital photograph a more engaging and

interactive object. A similar concept of physical reality and its disproportionate representation exists throughout much of Tim Hawkinson's work.

Tim Hawkinson both explores and subverts Manovich's notion of "scalability" with artworks that physically manipulate scalar extremes: large two-dimensional works that employ cartographical methods, sculptures that examine the materials and process of miniaturization, and epic robotic installations that seem to demand more than a lifelike presence. His painting, *Humongolous* (1995) "...depends on surprising contrasts of scale" to depict an enlarged, distorted representation of his body (13, 19). Composed of synthetic polymer on rag paper on fabric, it measures 172 x 48 inches. Hawkinson describes it as "...a map charting all the surfaces of my skin that I could see directly" (13, 19). In order to create the piece, Hawkinson methodically marked a grid over his entire body, and began depicting each square onto a larger grid drawn on paper, "...mapping the body, detailing and expanding the areas that were more accessible" (13, 190). At first glance, the final painting appears to be the flayed skin of a human being, but upon closer inspection, there are particular distortions that occur as a "... result of the fact that he was able to see multiple sides of a specific limb or area" (13, 19). In *Humongolous*, Hawkinson "...favors his left hand, even more, his right foot, which dominates the lower portion of this body-map like a gigantic, newly discovered peninsula" (5, 114). In its installation, scalar and material characteristics of this two-dimensional work determine the integrity of its sculptural qualities. *Humongolous* is displayed on a majestic, satiny scroll, which hangs from the wall. As a result, the object achieves the precious status of a human game trophy. This image alludes to the fact that both primitive and future cultures

designate a certain value for human life. Perhaps the drawing reflects on the battle act of “scalping” in early Native, hunter-gatherer societies; its deformed state could describe future genetic technologies such as human cloning. In this artwork, Hawkinson manipulates both scale and symbolic presentation to confront brutal manifestations of narcissism.

Another two-dimensional work that uses an expanded sense of scale is *Wall Chart of World History from Earliest Times to the Present* (1998). *Wall Chart* is a monumental drawing that measures 51 x 420 inches, and is composed of red ink and colored pencil on paper. While *Humongolous* focuses on depicting the external surface of the body, its initial appearance references the interior. *Wall Chart* appears to be an endless chain of intestines, regionalized by width, and contained within the perfect, 35-foot long rectangle of the paper’s border: Hawkinson describes the aesthetic as having “...a real biomorphic quality” (1, 180). The drawing is composed of intricate, precise concentric circles, which reminds the artist of a spirograph drawing. Five years prior, he literally created a drawing machine with *Signature* (1993). The fusion of lifelike aesthetics and functions with their potential to be robotically overproduced offers insight into a central object of criticism for the artist. Similarly, *Wall Chart of World History from Earliest Times to the Present* humorously monumentalizes the narcissistic obsession for recording all human activity – from the 15,000 year-old cave paintings Lascaux to the immediate and perpetual news coverage of today. Hawkinson summarizes: “The rise and fall of world powers, kingdoms, dynasties, and the empires are loosely depicted as wormlike or intestinal structures growing, thriving, diminishing, and dying” (13, 196). Yet, the

“incomprehensible pattern of squiggles and loops...appear to go everywhere and nowhere at once,” which illustrates “no sense of progress or development, just a self-consuming tangle of pointless indirection” (13, 21). The method of installation also contributes to the absurdity of a historical chart that has been abstracted well beyond function and recognition. *Wall Chart* is hangs in the center of the gallery, spanning two walls in a slight crescent. The position of being suspended furthers the image of a culture heading “everywhere and nowhere at once” by literalizing the condition of stasis that results from this frantic mindset. The purposefully invisible method of hanging the drawing with monofilament gives the viewer a sense that it is floating in mid-air. In addition to scale this gravitational element draws references to the extraterrestrial realm of our solar system, and its modern scientific explanation: the Chaos Theory. The drawing also alludes to early modern history, as its title and form were “...inspired by history charts produced for education and amusement in the nineteenth and early twentieth centuries” (13, 21). The link to the beginning of the Industrial era signifies mechanical reproduction within the framework of the postindustrial way of life. In *Wall Chart* the contrast between the drawing medium as a representation of script and its highly mechanical style posits a conclusion about the recording, organization, and storage of data in the “present time” of new media. Characteristics of telecommunications apply the aesthetical implications of this drawing, which pairs a monumental abstraction resembling internal organs with the suggestion that it was produced from a synthesized mathematical equation.

Tim Hawkinson also explores the scalar extreme of the miniature in a trio of sculptures from 1997, which includes *Bird* (2” x 2½” x 2”), *Egg* (1” x 1 ½” x 1”),

and *Feather* (2 ¼" x 2 ½"). He replicates the skeleton of a small bird by gluing together collected nail clippings, noting that "...the pinky nail was grown out longer to make the cranium" (13, 194). His material choices are similar throughout the other two sculptures: "Pulverized hair and nail clippings mixed with glue make up the walls of a small hatched egg...A feather made of my hair. Several hairs were glued together into a bundle to form the spine" (13, 194). The use of hair and nails remains true to the exact materials of the forms they depict, while their ephemeral nature and figuration is reminiscent of the prehistoric periods in which the Class Aves (birds) evolved (15). *Bird*, *Egg*, and *Feather* illuminate the history of early modern scientific thought, specifically Thomas Huxley's widely accepted theory (1868) that birds are the descendants of the *Archaeopteryx* specimen, the fossilized remains of the most primitive known bird (15).

Hawkinson's 1998 sculpture, *Shrink* best represents the process of miniaturization, which elucidates the applied concept of "scalability." It measures 38" x 27" x 14": "Core samples of one eighth of an inch taken at approximately one-inch intervals were drilled out of a wooden chair. Each disk was positioned on a thread that connects the disk's original position on the chair to a vanishing point just to the left of the chair. By maintaining a proportional distance between the disks and the vanishing point, the chair is effectively shrunk" (13,197-198). The central element of this piece is a seatless chair in which a wooden dowel juts through the rim of the seat at a severe angle. Attached to its tip is the conical network of monofilament threads that appears to project a miniature shadow of the original object. The use of domestic objects punctuates the artist's sculptural vocabulary, and frequently references

Duschampian aesthetics. A chair that exists in a functionless form – transformed to such a degree that it resembles a stringed musical instrument – is reminiscent of the Dadaist philosophy.

In contrast to works that represent the materials and process of miniaturization, Tim Hawkinson's monumental robotic installations use the sensorial scalar extreme of illusory life. The interconnected forms of his installation *Überorgan* (2000) span multiple rooms and occupy a total of sixteen thousand square feet. It is made of twelve woven polyethylene balloons, nylon, cardboard tubing, mechanical components, and air: "Twelve bus-size biomorphic balloons, each with its horn tuned to a different note in an octave, make up a walk-in self-playing organ. A 200-foot-long scroll of dots and dashes encodes a musical score of old hymns, pop classics, and improvisational ditties. This score is deciphered by the organ's brain – a bank of light-sensitive switches and relays that translate the original patterns into nonrepeating variations of the score" (13, 201). In regard to scale, Hawkinson comments that the size of the installation is predetermined by the size of the venue, and his tendency to make gigantic forms can be attributed to the weightlessness of the media. Air is a medium Hawkinson has cultivated to produce not only massive pneumatic sculptures, but also a crude form of music using the methods of robotics – computers, sensors, music programs, and sound-making devices (4, 69). When the world of sound converges with the presence of breathing, "biomorphic" balloons the effect brings to mind the various cyborg creatures that populate his work. In creating *Überorgan*, he commented that it: "...was going to have a real strong physical presence, but it needed also to have this kind of audible component. The balloons

look like whales suspended in the air...hovering above you, and the sound is kind of biomorphic...” (1, 176). This large-scale pneumatic cyborg confounds distinctions between the organic and inorganic, and “...undermines boundaries between the human and animal” (4, 69). To further its mechanical simulations of life, the photo-sensitive switches that control the organ are activated spontaneously by viewers going through the space (1, 176). This responsive creature snakes through its spacious site, and is never completely visible, a living presence that is “...virtually paranormal, beyond true comprehension” (13, 38). However ethereal the inflated polyethylene tries to become, one cannot ignore the spontaneous nature of its netting and rigging. In addition to its nonsensical music, the “...low-tech sophistication and handmade craftsmanship” of the *Überorgan* transform its grandeur into a “...playful, mirthful, even goofy” attempt to overwhelm the audience (7, 69).

Another robotic installation that emulates the presence of a heroic, living creature is *Drip* (2002), which is composed of polyethylene, a mechanical component, and water. Hawkinson described the incidental inspiration for the piece as being the result of a leaky studio ceiling. Buckets scattered around the space to catch the water caused the droplets to resonate in such a way that he envisioned a machine that would choreograph the sound, and create what he describes as “...a sort of drumming machine” (1, 182). The form resembles an octopus-like creature suspended from the ceiling; pumps move water through each of its branching tentacles and into individual tin buckets on the floor. To mechanize its nonrepeating rhythmic pattern, he sampled and synchronized the spin frequencies of train gears (13, 202). The apparent structure of this robot’s percussive music “...suggests the

existence of some kind of intelligent control. So, too, does the fact that the piece begins to function only when a viewer enters the room” (13, 25). Much like the *Überorgan*, this hovering creature exposes its helplessness through its construction, as “...scavenged trash and cheap, mass-produced materials” articulate its knotted vines (4, 69). This corporeal substance suggests that *Drip* evolved during a post-apocalypse, a time in which the excessive inorganic rubbish of a past civilization discovers water, and eventually, language.

Though Tim Hawkinson “...was influenced by the conceptual sculptural practices of Bruce Nauman and Chris Burden focusing on the body and technology,” he eschewed the performance and video media both artists employed (4, 68). He instead “...concentrated, with a singular drive and intensity, on the creation of two- and three-dimensional works throughout the 1990s” (4, 68). His work investigates the formal and conceptual characteristics of scale to formulate a cautious understanding of our technology-driven culture. The painting *Humongulous* uses techniques of measurement to break down the human body in order to reveal a distorted image of the contemporary corporeal self (4, 68). Similarly, *Wall Chart of World History from Earliest Times to the Present* is an abstraction of the characteristic methods in which human history is recorded, revealing a present stasis that results from the digitization of data. Hawkinson simulates the aesthetics of telecommunication through analog techniques that literalize the diminished presence of the human hand: ““For some of the drawings I’ll make a mechanical device that will help in making the drawing...”” (1,174). However, the miniature sculptures *Bird*, *Egg*, and *Feather* restore the significance of craftsmanship to his formal approach in modeling life forms. It is

“...this hand-made aspect in a lot of the work that just by nature...creates these organic kinds of references” (1, 174). When examining these tiny representations of a familiar creature, one is invited to reflect on the essence and origin of its species. References to the natural sciences, prehistory, and scientific thought from early modern to the present saturate his subjects in an attempt to establish a tangible justification for our supernatural societal condition. He avoids an academic approach by engaging the “...intellect with a ticklish anti-intellectualism. Habitually, he dances with both science and pseudo-science and uncannily subverts rationality while drawing upon its very attributes” (13, 36). The creation of *Shrink* illustrates a subversion of applied perspective and ratio principles. The chair with a negative essence projects its miniaturized scale model, a sculptural interpretation of “scalability.” Hawkinson manipulates the human scale through his colossal installations, which involve “...mechanical interests and kinetic work, a fascination with moving parts...” (1, 174). The etymology of *Überorgan* is derived from the German word *Über*, meaning “over” or “above”: it is often used to connote a sense of “beyond-ness,” or “mega-ness” (13, 38). This installation gives its viewers “...an experience of the sublime – a response to the unfathomable, the unknowable, the infinite” (13, 38). The other work that attempts to overwhelm the audience with its artificial life is *Drip*. Its exposed function signifies the construction: “...in a lot of my work I use transparent materials, especially in mechanical pieces, because I like to be able to see what’s going on” (1, 176). Both of these massive, acoustic installations “...which break down distinctions between animate and inanimate, human and machine, process and finished state, underline the instability of traditional definitions

of humankind” (4, 69). Hawkinson blurs the distinctions that separate the media of drawing, photography, sculpture, and installation to reveal a densely interconnected formal and thematic richness (4, 68). The robotic works in particular reveal a metaphorical response to the displacement of human presence in new media. The history of robotic art shows a direct correlation to the technologies of telecommunication, and the emergence of “telepresence.”

Early kinetic art had already moved sculpture beyond fixed form in the forties (9, 3). Although kinetic artworks suggested interactivity, their animated presence still required a contemplative viewer. However, this medium “...opened up new and unexpected interactive possibilities.” Eduardo Kac indicates that kinetic artists “...proposed that art should reach beyond fixed form to engage the viewer in a process of active participation and transformation” (9, 3). When the world of mobile sculptures collided with advanced electronics, the practice of robotic art was realized. Mechanization suggests an increase of interactive potential, but “...one of the most problematic issues of robotics in art is the very definition of what a robot is” (8, 60). Its etymology “...offers insight into why the field has been constructed around an active-passive model of agency” (14, 68).

## Works Cited

1. Art21. Art:21, Art in the Twenty-First Century. New York: Harry N. Abrams, Inc., 2003. Vol. 2.
2. Ascott, Roy. Art, Technology, Consciousness. Bristol, GBR: Intellect Books, 2000. Eduardo Kac, "Genesis: A Transgenic Artwork," 17-19.
3. Ascott, Roy. Telematic Embrace. London: University of California Press, 2003.
4. Binstock, Jonathan P. The 47<sup>th</sup> Corcoran Biennial: Fantasy Underfoot. Washington, D.C.: Corcoran Gallery of Art, 2002. Matthew Biro: "Ken Feingold," 58-61. "Tim Hawkinson," 68-71.
5. Duncan, Michael. "Recycling the Self." *Art in America*, May 1997: v85 n5. 112-115.
6. Grau, Oliver. Virtual Art: From Illusion to Immersion. Cambridge, Mass.: The MIT Press, 2003.
7. Harvey, Doug, Laura Steward Heon, and Philip Monk. Tim Hawkinson. Toronto, Canada: The Power Plant Contemporary Art Gallery, 2000. Laura Steward Heon, "Tim Hawkinson's *Überorgan*," 67-69.
8. Kac, Eduardo. "Foundation and Development of Robotic Art." *Art Journal*, Fall 1997: v56 n3. 60-67.
9. Kac, Eduardo. "Negotiating Meaning: The Dialogic Imagination in Electronic Art." <http://ekac.org>, 7pgs. (originally appeared in Proceeding of Computers in Art and Design Education Conference: University of Teesside, UK, 1999).
10. Leopoldeseder, Hannes, Christine Schöpf, Gerfried Stocker. Prixars Electronica: 2004 CyberArts. Germany: Hatje Cantz Verlag, 2004.
11. Lovink, Geert. Dark Fiber: Tracking Critical internet Culture. London: The MIT Press, 2002.
12. Manovich, Lev. The Language of New Media. London: The MIT Press, 2001. 18-61.
13. Rinder, Lawrence. Tim Hawkinson. New York: Whitney Museum of American Art, 2005.
14. Shanken, Edward A. Tele-Agency: Telematics, Telerobotics, and the Art of Meaning. *Art Journal*, Summer 2000: v59 n2, 64-77.
15. <http://en.wikipedia.org>
16. Ziarek, Krysstof. The Force of Art: Cultural Memory in the Present. Stanford, California: Stanford University Press, 2004.