Contested Zones: Futurity and Technological Art

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ABSTRACT

With reference to the video documentary Artists in Cyberculture and other interviews with Australian women electronic artists, the author argues that a high-tech future in which the body is obsolete and evolutionary powers are ceded to machines is not a universally shared vision, but a projection from a particular gendered and cultural standpoint. It calls attention to the diversity of views technological artists may hold about futurity, newness and bodies, and suggests that popular fascination with the "newest and latest" need not divert artists from investigating alternatives to dominant Western techno-logics.

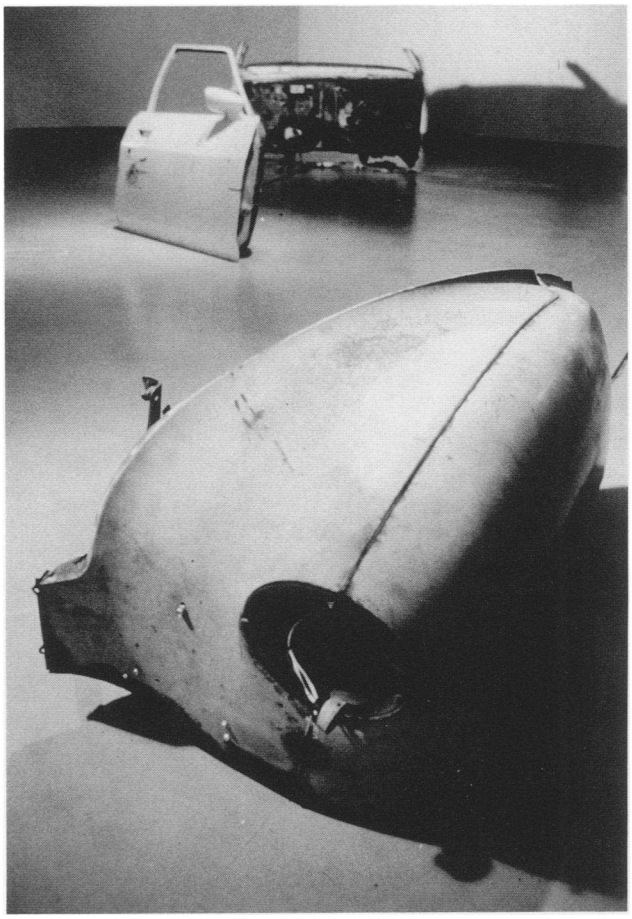
Futures are contested zones, and the language we use to talk about them is possibly more important than we usually realize. To speak with apparent certainty of things that will or are bound to happen is to use the "collapsed future tense" and to risk reproducing a form of technological determinism that pictures technology as an autonomous entity evolving under its own momentum, independent of human decisions and actions, or motives that could be contested from a variety of perspectives in a variety of languages. Can a future already known in advance even be considered a future? Is it not simply a projection of what Heidegger describes as an "entrapping securing" of a world and its inhabitants made available as resources and ordered to serve pre-calculated outcomes [1]?

Perhaps since Marx, and certainly since the rise of political struggles by feminists, indigenous peoples and ethnic minorities, it has become increasingly accepted that there is no one "History" but that histories are narratives told from particular standpoints and with characteristic blind spots. The same relativistic perspective is not usually applied to futurity, which (in Western culture anyway) is almost always invoked in the singular—the future—and assumed to be a destiny shared by all. But just as we have learned to interrogate "History" so can we interrogate accounts of the future: Whose future gets to be the future? Whose visions are named as realistic and attainable, and whose are deferred as impractical and utopian? Who gets empowered and legitimated by such language? Who is ignored?

Linguistic habits such as the collapsed or singular future arise partly as ideological effects of late capitalism, reflecting the sense that technologies "arrive" or "impact" upon ordinary people at speeds and from directions beyond our control. Yet what is at stake is not merely the possibility of gaining control over this or that technology, for, as philosopher of technology Don Ihde has pointed out, so coextensive are technology and culture that the question of how to gain control over technology is really a question of how to "control" a whole culture [2]. Thus, questions concerning technological futurity can be translated into questions about who—or what—are the agents of cultural change.

Western technologies have long been caught up in the progress narrative, overtly promoted as icons of modernity, newness and futurity. At different historical periods, artifacts such as the clock, the steam engine and, more recently, the computer have been taken up as metaphors defining humanness and culture [3]. Even at the supposedly postmodern moment, faith in the progress narrative persists in the form of technological neophilia (the love of the new). Advertising rhetoric describing new products as "revolutionary" can reinforce the idea that technological change automatically brings about social "revolutions," ending domination rather than (as is more usually the case) allowing it to alter its

Fig. 1. Nola Farman, Helen Britton, Brad Clinch and Anna Gibbs, *Carsick*, mixed-media installation with rusted car parts, video, audio and various surveillance technologies, 1992. Fragmented car bodies evoke "the aftermath," or car culture as a failed dystopia.



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sites and forms. The historical awareness that decisions about technologies are made by particular social actors on the basis of particular interests—often business and military ones—is frequently eclipsed by a technological determinist perspective emphasizing machines as agents of social and historical change, with their own evolutionary powers. Successive generations of ever "smarter" tools are heralded as manifestations of the future today, to which "we" can do nothing but acquiesce.

Collapsed futurity is also discernible on the post-1960s left, which has successively lost faith in socialism and utopian thought. In a 1982 essay, Marxist cultural critic Fredric Jameson proclaimed that "the past is dead" and that while "the future . . . may still be alive in some heroic collectivities on the Earth's surface it is for us either irrelevant or unthinkable" [4]. But the "us" for whom the future is a non-issue is not completely inclusive: Jameson himself cites utopian feminist writers (e.g. Le Guin, Russ, Delany) as counter-examples. My suggestion is that, while past and future may be of little interest to disenchanted veterans of the new left, both history and futurity are very much alive and contested by members of the newer social movements (feminism, environmentalism, land rights, etc.).

THE POLITICS OF NEOPHILIA

I am interested in becoming more discerning of differences in attitudes to newness and futurity in discussions of technological arts. Understandably, many arts practitioners and critics are excited about possibilities of electronic media to open up new forms of art, authorship and sponsorship. But do these new technologies have to be taken up by artists with the same neophilic spirit as that which pervades the capitalist and military matrix in which they were promoted and developed? The visual arts and crafts are potentially important sites for exploring techniques and technologies in relative (though certainly not absolute) freedom from hegemonic technological thrusts toward a pre-mapped future; craft forms from antiquity can happily coexist with industrial and digital processes. Here, interest in "the new" can be satisfied not only by the development of new media, techniques or technologies, but also through stylistic variations within or innovative combinations of existing media.

The positing of the new as a good in itself has political and aesthetic implications within discussions of electronic arts. Writing with reference to Latin America, Maria Fernandez criticizes the assumption that advanced Western technologies will inevitably and incontestably diffuse through developing countries, supposedly due to the rapidity and autonomy of technological development itself or peoples' willful abandonment of their own cultural traditions in favor of imported state-of-the-art equipment [5]. To artists working in countries with little access to constantly upgraded computer equipment (let alone a stable electricity supply to run it), a fetishization of scientific and technological aesthetics and artworks produced on the latest high-end machines could be seen as another instance of a European or U.S. preoccupation being proclaimed as a "universal aesthetic," to form yet another canon that favors artists who are white and male, once again "re-establishing the aesthetic superiority of wealthy nations over poor countries" [6]. Recalling the lessons of modernism, Fernandez argues that computer arts likewise "are products of specific political and economic environments" and therefore "should not become the norm by which other forms are judged" [7].

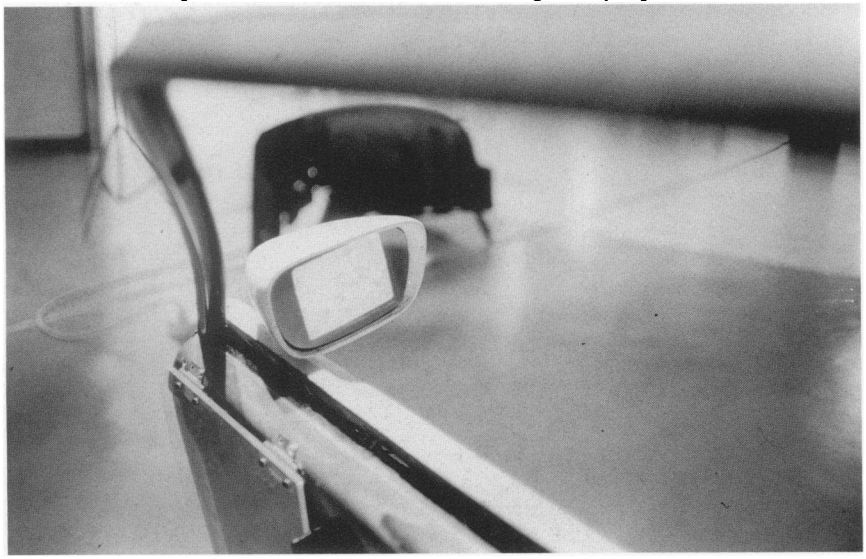
One alternative to the progress narrative and neophilia is the non-teleological perspective described by design theorist Tony Fry, who recognizes that technologies presently coexist in many different forms, not all of them new:

> From the non-teleological perspective, the new is neither celebrated nor lamented as the end of the old (which either continues or returns, but not necessarily in its original form). Certainly qualities of "the new" can be brought to an ethical evaluation of object, process or use. This cannot be done, however, on the basis of values wherein the new is posited as good in itself. Ethics themselves do not exist at the end of a road of moral development. They are also ensnared in a web of difference [8].

One example of artwork that makes use of new media without diminishing the value of previously existing forms is Acha Debelah's *Digital Painting,* which includes scanned images of local artifacts and patterns of traditional Ethiopian design as well as scanned images of pictures he has painted. The new is here incorporated as part of a techno-cultural assemblage that includes handmade work and invokes strong senses of tradition, origin and heritage. Debelah expresses the view that electronic arts, far from making history and tradition irrelevant, "can breathe new life" into them [9].

Differences in attitudes toward the new may be discerned across gender lines within technology-rich countries such as Australia. Several subjects interviewed so far for Virginia Barratt's and my study of Australian women electronic artists [10] have compared their own styles of relating to new equipment with those assumed to be normal in technoculture, where a mania for the newest and latest is conventionally associated with the "hard edge" of discovery and invention. Moira Corby, who describes herself as "fully devoted to very

Fig. 2. Nola Farman, Helen Britton, Brad Clinch and Anna Gibbs, detail of *Carsick* installation, 1992. A video screen set in a rearview mirror replays nostalgic scenes. Coupled with car parts, electronic technologies (such as this small video screen) provide a nostalgic "rear view" on the pleasures of the automotive technologies they supercede.



high end Silicon Graphics workstations and what they can do for me as an artist," nevertheless represents an alternative approach to the equipment [11]. Referring to the difficulties in learning from technical experts who attempt to help solve problems by taking over the equipment and doing the work themselves, Corby says:

> And of course you don't learn that way. You have to be shown, and you have to do it yourself, in the different steps. . . . I've learned by myself, I've got the catalogue, and learned, through trial and error, trial and error. . . . With the boy's thing it's always, "Oh, here's the newest latest software. Let's do what we can do with it, then throw it out and get the newest, latest software." There's this big competition thing happening, whereas that doesn't happen amongst the women I know. We like to spend a bit more time on *one thing*, and really explore it. You come up with things that so-called experts on the machine don't even know you could do. That's happened to me several times [12].

In other words, discoveries can arise out of careful and thorough exploration, not just the speedy conquest and instant trashing of the new. Isabelle Delmotte is a Sydney-based artist who taught herself to use a Silicon Graphics workstation to make computer animations that explore changes in perception and consciousness during and after epileptic seizures. Delmotte argues that women artists' access to expensive high-end equipment is not necessarily as big a problem as it might seem, since the mania for upgrading makes available good second-hand machines whose full technical and artistic potentials have yet to be thoroughly explored; the high-end second-hand equipment market represents an excellent source to be tapped by women (and other) artists [13].

Nola Farman, who makes interactive installations for galleries and public spaces, is also critical of technological neophilia within the electronic arts. In her view, technological developments in this century have proceeded faster than our coming to grips with their implications, and artists still have a lot to do in helping culture "digest" and work through earlier technologies—even things as humble as the light switch. Works of artistic and cultural merit can be produced with equipment "off the shelf of a good second-hand electronics store" [14].

An electronic artwork concerned with the collapse of futurity in an explicitly critical rather than unwittingly hegemonic way is the installation *Carsick*, by Nola Farman, with Helen Britton, Brad Clinch and Anna Gibbs, which was exhibited at the Art Gallery of Western Australia in 1992 and at the Performance Space in Sydney in 1994 (Figs 1 and 2). It comprises sections of old cars pulled from the bush, worked over and coupled with various interactive and non-interactive sound and video devices. The artists state their concern with "the social place of cars within Western culture as well as their approaching obsolescence" and counterpoise this general scenario against the ways that the car works at the individual level as "a nomadic utopic space offering a rich complex of possibilities for the owner/driver" [15].

Fig. 3. VNS Matrix, *All New Gen*, computer-game project, 1994. One of the DNA sluts—the "mutant sheroes" who keep players that bond with them stocked with G-slime—shown wrangling with the chrome-plated technobimbo Circuit Boy, whose penis is morphing into a mobile phone.

The car has been an icon of progress and futurity, promising individuals tremendous powers of speed, mobility and freedom through the mastery of a vehicle frequently experienced as a prosthetic extension of the body, and/or an object for ego-identification. *Carsick* literally explodes the smooth self-contained ego-body of the car and its utopic womb-like enclosing space into a set of partial objects. As Farman explains, this work explores the disintegrating post-car as "a failed prosthesis." The installation's title refers to cars that are sick—e.g. rusted beyond repair—and to the idea of being "love sick" for cars—i.e. having a sick love of cars and the perverse eroticism of automobility. Car sickness is nausea induced by car travel; the utopian promise of a nomadic trajectory is spoiled by vomit on the curbside—the abject product of the body's disorientation. Sounds of road crashes are heard when the visitor approaches the fender part of installation, reminding us that this dystopian tendency culminates in blood when an accident crashes through the limits of car and human bodies alike.

Instead of euphorically collapsing a predicted future of human obsolescence onto the present, *Carsick* explores the impending redundancy and dysphoria of a once-futuristic technology and the blood sacrifices that continue to be made for its sake. The installation invokes for me a temporal sense of "the aftermath," a potentially, if perversely, utopian time or space from which to imagine surviving the florescence of disaster and getting on with the clean up operations. It prompts us to realize we are already living in the aftermath, the Earth-sickness caused by cars; we have to start cleaning up now. In *Carsick*, the aftermath of car culture is signaled by the rusted and failed prostheses, as well as by the phoenix-like presence of electric and electronic technologies arising

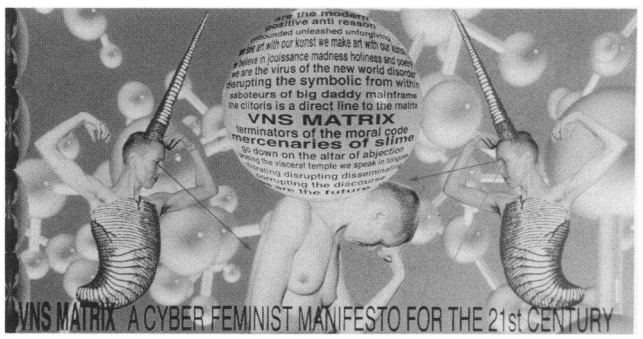


Fig. 4. VNS Matrix, *Cyberfeminist Manifesto for the 21st Century*, 1992. This work models a viral, technophilic feminism for a future in which bodies and eroticism are far from obsolete.

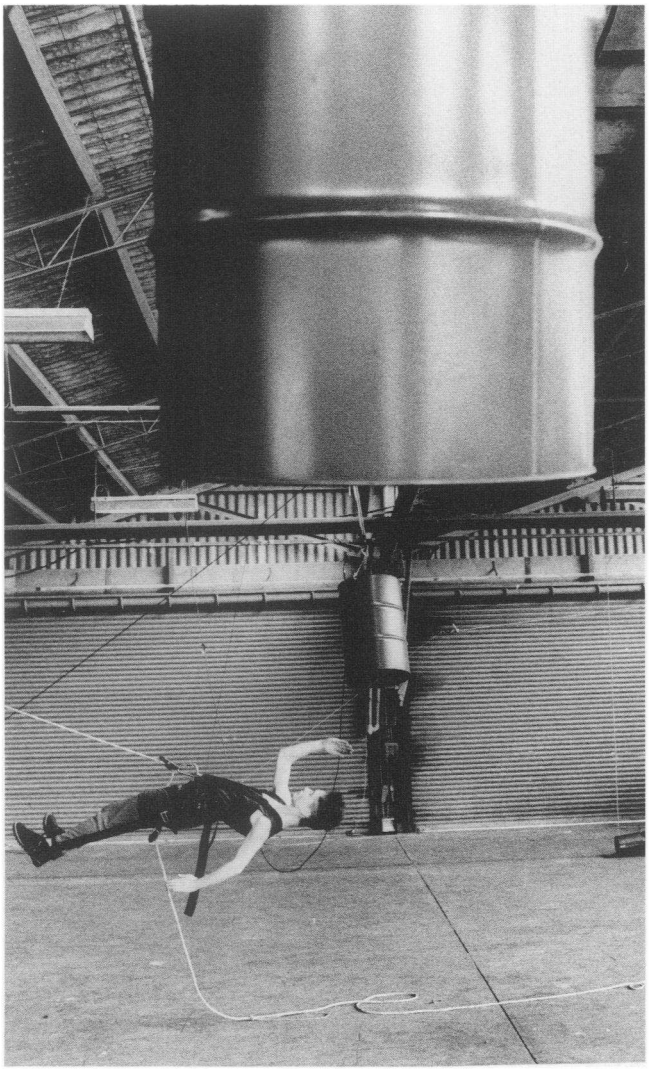


Fig. 5. In sound/performance works such as *Tensile* (1993), Sydney artist Anna Sabiel interfaces with industrial technologies to animate an environment with remembered movements of an intact body. (Photo: Heidrun Löhr)

within and around them. Some of these media are deployed for evocations of memory and nostalgia (e.g. the rear-view mirror video with its images of Lassie and roadside farewells, the dashboard radio that constantly switches between various sounds and frequencies "as if searching through memory for something lost and possibly irrecoverable" [16], etc.), reminding us that even our electronic future technologies will be caught within human purposes, memories and meanings.

Contested Futures

Artists working in digital media express a diversity of attitudes towards technology, newness and futurity. But to the extent that discourses on electronic arts are pervaded by hegemonic neophilic attitudes, this diversity can go unacknowledged. Arguably something like this is going on in the 1993 video documentary *Artists in Cyberculture,* which shows interviews and artworks of some artists at the 1992 Third International Symposium on Electronic Arts (TISEA) in Sydney [17]. This informative text presents a diversity of artists' works and views but subsumes this diversity within a textual framing that reiterates pseudo-universal sensibilities of neophilia and collapsed futurity. A written quote chosen to open the documentary, and thus authoritatively address the viewer states that "We move under the shadow of our machines . . . for our time is over and their time has begun. . . ." [18]

This statement of collapsed futurity—"our time is over"—pictures machines as beyond human control or responsibility and implies that the human body is redundant. It resonates with the ideas of Hans Moravec and other "tomorrow makers" [19] that rapid advances in information technologies and artificial intelligence are making human bodies outmoded and that the future of humanity will see a "downloading" of intelligence and reproductive powers from human bodies into high technologies that might live a remote-control and/or extraterrestrial existence [20], while human bodies disappear [21]. In the documentary, this perspective is immediately reinforced by a cut to the Australian Stelarc, perhaps "the first cyborg artist" [22], who is shown questioning whether in this high-tech age "male-female intercourse is the best way to prolong the species." Known for his interest in body obsolescence and his "shamanistic" and increasingly biomedical arts practice, Stelarc has elsewhere stated:

> The body must burst from its biological, cultural and planetary containment. The significance of technology may be that is culminates in an alien awareness—one that is POST-HISTORIC, TRANS-HUMAN and even EXTRATERRESTRIAL [23].

Another articulation of collapsed futurity in the documentary occurs in the later segment where artist Jon McCormack (whose own works involve explorations of computer "A-life" and ecological themes [24]) discusses the rapid pace of technological change compared to human adaptation and claims "we have stopped evolving."

At the beginning and end of the TISEA documentary, a robotic voice proclaims, "It is the law of nature . . . the strong survive." This Darwinian idea, long applied to capitalist ventures, is extended to imply the survival of machines as the fittest inheritors of human evolutionary powers. For those who have "stopped evolving," it is no longer a question of gaining mastery over the machines, or of worrying about who owns or controls them, but simply a matter of masochistically surrendering to *their* control, being content to live in their shadow, or even, as in cyberpunk and hacker fantasies, of "jacking into cyberspace"—of letting oneself be engulfed by the oceanic matrix. There is a chillingly profound passivity and a regressive disclaiming of responsibility in these framing quotations, which imply that machines are something like an emergent Fourth Reich to which "we" must inevitably, even enthusiastically, submit. As Maria Fernandez points out, "Anything that is presented as inevitable, predestined, or part of the natural order of things resists contestation" [25]; she goes on to cite Walter Benjamin's views that what most corrupted the German working class was "the notion that it was moving with the current . . . the illusion that the factory work which was supposed to tend towards technological progress consti-

tuted a political achievement" [26]. I would suggest that like earlier futurist celebrations of the machine's aesthetics and powers, attitudes of neophilia and collapsed futurity associated with new technologies could also play into a form of fascist politics in which people relinquish social responsibility in submission to the incontestable progress of "stronger" and "higher" machinic powers.

Who are the "we" who have stopped evolving? And who are the "our" whose times are over? What of those whose time is just beginning (or re-beginning)? Referring to modernity's uneasiness about the links between machines and women, seen as at once automatic yet not entirely controllable emergent intelligences [27]. British cultural theorist Sadie Plant has suggested that, in the information age, "women's emergence is man's emergency;" while white men have dominated and "re-membered"history as his-story, "the future is unmanned" [28], that is, neither dead or collapsed, but animated by other dynamic agents, including women and machines. From the perspective of "cyberfeminism" (a Haraway-inspired term coined simultaneously in 1991 by Plant in England and feminist art group VNS Matrix in Australia), the question is not one of dominance and control of or submission and surrender to machines, but of exploring alliances and affinities, co-evolutionary possibilities, especially between women and technology. The hope is that despite their patrilineage, new technologies may be effectively deployed in feminist projects to "morph" the pre-mapped future, mutate its pre-set algorithms and codes, and bring about a social reality that is not just a speedier higher version of the high-tech today.

(TECHNO) BODY POLITICS

The Australian cyberfeminist art group VNS Matrix, comprising Virginia Barratt, Francesca da Rimini, Julianne Pierce and Josephine Starrs [29], deploys vivid physical imagery to actively contest the masculinist rationales of high-technology and dominant visions of the future—the "contested zone"—ironically appropriating the hacker metaphor in artworks while developing a computer/video game called All New Gen. The enemies are Big Daddy Mainframe, a logo-headed suit, and Circuit Boy, "a dangerous techno-bimbo" imaged as a counter to the usual mechanical woman/fembot visions, whose penis morphs into a mobile phone in the work's recent computer animation version. The player measures his or her energy in stores of "G-slime" and is aligned with a feminine-coded cyberspace inhabited by the amorphous *All New Gen* (variously described as a hostile mist, intelligent slime etc.) and receives assistance from the DNA Sluts, described as "mutant sheroes" (Fig. 3).

Fig. 6. Linda Dement, *Penes and Cloth (Smile for Me)* from the *Typhoid Mary* CD-ROM, 1992. Dement literally "puts guts into the machine," working with scanned-in surgical images of organs, as well as other objects and images she uses as "paint" in combination with decorative textures and overlays. Here, dissected penises are a pattern element of a formal and decorative image linked to a verbal text implying a fantasy of revenge.

One of the alternatives to neofuturist submission to dominant technoculture pursued by VNS Matrix is active viral identification—imaginatively entering technology and the corporate system as a micro-entity that can penetrate and corrupt the data banks of Big Daddy Mainframe. Unlike male hackers with their Oedipal fantasies of using viruses and data piracy to take over and control the place of Big Daddy [30], VNS Matrix highlights the infective principle: the virus becomes a metaphor of a political process, the spread of feminist consciousness to cause permanent disruption to organs and functions of the male-controlled corporate technobodies.

Technology, futurity, the matrix and, importantly, the body are all contested zones for VNS Matrix, whose works aim to physicalize technology and insist on the sensual and erotic character of the human-technology interface. Donna Haraway's "Cyborg Manifesto" [31], with its vision of an ironic cyborg politics based on affinities and partial identifications rather than identities and essences, is an important reference for the group's *Cyberfeminist Manifesto for the 21st Century* (Fig. 4). The work has appeared in various forms and sites, including as a billboard at the Tin Sheds Gallery in Sydney and at the Chicago ACM SIGGRAPH convention. Resonant with the viral metaphor, the woman here appears as a phallic and penetrative force capable of moving in the cyberspace matrix, seeking pleasure and knowledge. Developing Haraway's insights into the perverse and embodied character of cyborg technics, the artists articulate erotic and physical metaphors of the technobody, acknowledging possibilities for a creative woman-centered technophilia: *the clitoris is a direct line to the matrix.*

For VNS Matrix and several other Australian women artists, Stelarc's extremist statements about body redundancy and the quest for transcendence of the body through technology have helped clarify a position from which to differ [32]. Although conceived as part of a rigorous personal/artistic inquiry into the limits of the body and its technological prostheses or substitutes, Stelarc's works and statements are readily interpretable in relation to Christian, metaphysical and technoscientific desires to escape what cyberpunks call the "meat" of the body. His practices have included various suspensions by hooks, a robotic "third arm" wired up as a prosthetic double of his

own, and the insertion of various biomonitoring devices and the amplification and display of their signals to create a sound and light show in which his internal body functions become exteriorized as environment, a technoscape that can include virtual elements (e.g. a virtual reality hand or a whole body) [33]. His recent biomedical performance/sculpture, involving a specially made endoscopic device inserted (with much discomfort) into the stomach, further extends his interest in implanting the body with technology: "The body is no longer a mere container of a self, it now contains a sculpture. . . . The body . . . is seen as physiologically and metaphysically hollow" [34].

While invasive biomedical art practice is occasionally pursued by women (e.g. the French performance artist Orlan, who is remaking her face and body in a documented series of artistic/surgical events), more women seem to be interested in less-invasive ways of interfacing with technologies to animate environments. Anne Marsh compares Stelarc to Laurie Anderson, whose performances also involve visions of "a future where mind and body are enmeshed in technology" but who tends more to play with questions of (especially gender) identity and who wears technology "on her skin" [35]. One might also compare Stelarc's technologically invaded body with the very much intact body of the Sydney performance artist Anna Sabiel in her works. Wearing an abseiling harness, Sabiel attaches herself via piano wire and a system of pulleys and counterweights to one or more 44 gallon drums and, sometimes, ladders (Fig. 5). She moves against these weights and in turn causes them to move through her own body motions. The amplified tinkling and occasional scraping sounds of objects and water inside these drums provide a synchronized audio accompaniment to the movements, which explore themes of physical memory—the knowledge and feelings held and remembered by the body.

Sabiel contrasts Stelarc's insertion of biomechanical technologies into a body he wants to abandon with her own aim of achieving a holistic being in the body, explicitly motivated by a "social responsibility" to counter what she considers his "depressing" masculinist visions of the high-tech future and "hollow, hardening, dehydrating" bodies [36]. For Stelarc, the body-technology interface is a ruptured boundary that flows in both directions, whereas for Sabiel, the body-technology interface is surface-to-surface: the harness is donned like a garment that preserves the integrity of the body inside it. This and the overall arachnid effect of the performance reminds me of the movie *Aliens* [37] where Ripley does battle with the monstrous alien Queen from within the *Powerloader*, a robotic electromechanical exoskeleton: the body remains intact and surrounded by the technology. Sabiel's body movements animate a dynamic system in which what is externalized is not a spectacle extracted from the "meat"of the body by biomedical equipment, but a dimension of physical interiority almost unthinkable within Western metaphysics—namely, "physical memory," the body's own historical consciousness, its kinesthetic knowings.

For many women artists working with digital media, the body's physicality is not transcended or obsolesced by technology; rather, it is a source of poetic efforts to at once use and counteract the machine's own anti-body logics by using it as a medium to explore organic or visceral forms. Women artists interviewed for *Artists in Cyberculture* included German artist Ulrike Gabriel discussing her computer-mediated installation *Breath*, where images and sounds changed according to a breath monitor worn by the participant. Gabriel made the point that the work was not transcendent, but tied to the specific limitations of the body's energies and the aesthetic parameters coded into the machine: "You can't get out of your body; it can't get out of the [aesthetic] system, but still a lot can happen. . . ." New York artist Patricia Search, whose long-standing love of math made her at home with computer forms and logic, spoke of her desire to enrich her computer-based art with "color, form and light" to keep it from "being too rigid" while Canadian Char Davies rejected the term "computer artist" and described her computer-generated works as organic and textured forms exploring inner mystical experience and the natural world.

Whereas Davies and Search counter the computer's biases with an aesthetic of organic beauty, some Australian women artists have adopted an (anti)aesthetic of viscera and abjection. Melbourne-based computer image-maker Linda Dement has articulated her desire to "put some guts into the machine" and describes her enjoyment of the way computer scanning allows the use of objects as "paint" in combination with "inward-looking" autobiographical narrative explorations of "brutality, violence, madness" as well as beauty, desire and pleasure, exemplified in her work *Typhoid Mary* [38] (Fig. 6). Dement's images often feature detached organs, anatomical dissections and medical images, arranged in formal compositions with a strong decorative emphasis on layered images, textured surfaces. In a catalogue note for the Tekno Viscera exhibition of women's electronic art and performance in Brisbane 1993, Jo Frare and Vicky Sowry vividly summed up the feminist interest of "putting some guts into the machine":

Fig. 7. Linda Dement, from centerfold from *Cyberflesh Girlmonster*, interactive CD-ROM, 1995. Various "techno-visceral" images and texts are accessed via these whimsical animated "flesh monsters" grafted from scanned images of women's body parts.

> Given the obsession of many new technology applications (for example, video games and VR systems) with the female body, it is not surprising that feminist artists are rewiring the network so that these technologies become receptacles for abject female excess—for that which is subversive in gendered difference. The precision and order of these contemporary entertainment and/or representational technologies are being challenged with the intromission of viscera and fluid into what has previously been perceived as a hermetic, dry closed circuit [39].

Dement's recent CD-ROM *Cyberflesh Girlmonster* (Perspecta, Art Gallery of New South Wales, 1995) includes some anatomical and violent imagery, along with fragments of written text, but features whimsical animated monsters formed by grafted-together scanned images of body parts, enthusiastically donated by women at the 1994 Adelaide Festival Artist's Week (Fig. 7).

The thematics of "putting guts in to the machine" and a similarly ironic play with the fragmentation of women's bodies into fetishized parts can be discerned in the interactive mixed-media installation *Mapping E-motion* by Sydney artist Sarah Waterson. It consists of a number of hanging rectangular perspex plates on which are mounted latex casts of different breasts (Figs 8 and 9). A strong sense of "interface" is conveyed by the latex itself, which is shaped by a surface-to-surface interaction between skin and rubber, and which is described by the artist as "a semi-permeable membrane between reaction and sensation." Wires run between the latex breasts, which respond to different degrees and speed of visitors' movement in the gallery space by pulsating, their nipples becoming erect. In the 1994 version, the breasts also emitted electronic "chirps."

The artist's catalogue notes begin:

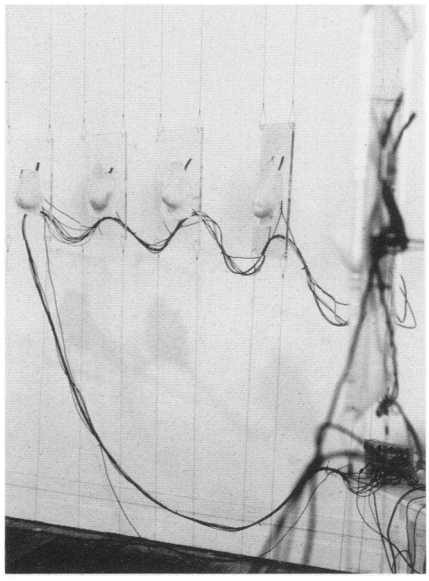
> We are all dislocated organs in a mapped symbolic state open to operation open to social and philosophic interpretation and reading. We are already mapped we are constantly written we are informed we are reproduced in our most predictable and deducible form. Technology and the button/switch manipulation proved this and requires recruits [40].

The installation provides an alternative mapping: we are inscribed into this space by an unpredictable and (on first experience anyway) a non-deducible form, for it may take a while to realize that our movements stimulate the breasts, that we are caught in an intangible "interactive interface." In this way *Mapping E-motion* not only experiments with an alternative to "button/switch" interfaces, it also successfully realizes the artist's stated aim of playing with the idea of pheromones, olfactory hormones that may allow us to be erotically stimulated across a distance. But it is only able to represent the idea of pheromones, a simulation of the interactions between erotically charged bodies; the perspex mounted breasts have no insides that might feel surging and erectile sensations. There is, however, the perverse possibility that some visitors will get stimulated by the simulation, and their own body parts move in "sympathetic resonance" with the latex models.

The catalogue notes state that "*Mapping E-motion* is about the impossibilities of electronics in simulating what is usually not seen or felt—the internal landscape of being stimulated by another." And a few lines later we read: "*Mapping E-motion* explores the possibility of using technology to simulate erotic pathways. . . ."

The contradiction between these statements about the possibilities and impossibilities of electronics to simulate the internal landscape is not a product of careless writing, but precisely expresses that generative tension between techno-logic and bodily interiority whose exploration comprises the poetic essence of this intriguing and gently ironic artwork. *Mapping E-motion* fully acknowledges the contemporary techno-logical trajectories that entrap us as recruits to "button/switch manipulations," but nevertheless responds to this situation in ways that are uninterpretable within regimes of artistic production and reception that valorize newness, highness, futurity and sexual/physical redundancy.

Fig. 8. Sarah Waterson, *Mapping E-motion*, 1992. Motion detectors allow latex casts of different breasts mounted on perspex to become "erect" (and in the 1994 version, emit small sounds) in response to gallery visitors' movements. (Photo: Heidrun Löhr)



My conclusion then is simple: theorists, critics, art-lovers and artmakers need to learn to listen to the diversity of voices and visions expressed in technological media and develop more appropriate frameworks in which to appreciate artistic works that do not merely reproduce or celebrate machine logics (e.g. algorithms creating electronic wallpaper), but actively challenge and pervert them and the futures they imply. Otherwise we risk not only misunderstanding specific artworks, but also reducing their potential effectiveness as alternatives to the spectres of monolithic futurelessness and a post-human world. In such a world, art itself could lose all meaning, for poetic strivings to remember and embody past experiences, to critically reflect upon present situations and to shape imagined and future worlds would all be eclipsed by the overshadowing machines to which our historically transformative and evolutionary powers would have been ceded. I hope this paper, by focusing interest on works by contemporary women technological artists, might contribute to their success in shaping alternative futures, futures that do not simply intensify the powers of the already strong, but enlarge the influence of the values and interests of those not satisfied by the pursuit of the new as a good—or even a god—in itself.

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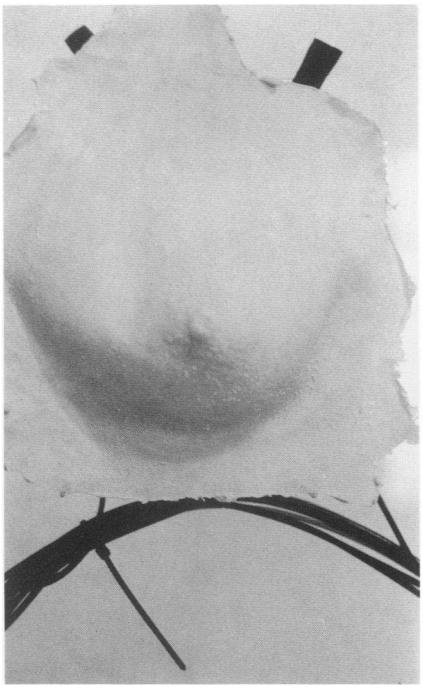

Fig. 9. Sarah Waterson, *Mapping E-motion*, 1992–1994. The latex breasts strongly suggest an "interface" while poetically exploring the limits of technology's simulation of stimulation. (Photo: Heidrun Löhr)

is recommended for readers wanting to survey a full range of Australian technological arts.

References and Notes

1. Martin Heidegger, *The Question Concerning Technology and Other Essays*, W. Lovitt, trans. (New York: Harper & Row, 1977) pp. 167–69; p. 27.

2. Don Ihde, *Technology and the Lifeworld: From Garden to Earth* (Bloomington, IN: Indiana Univ. Press, 1990) p. 140.

3. J. Bolter, *David Turing's Man: Western Culture in the Computer Age* (Chapel Hill, NC: Univ. of North Carolina Press, 1984) chapter 2.

4. Fredric Jameson, "Progress Versus Utopia; or, Can We Imagine the Future?," *Science Fiction Studies* **9** (1982) p. 152.

5. Maria Fernandez, "Technological Diffusion and the Construction of a Universal Aesthetic (discussed with reference to Latin America)," paper presented at the Adelaide Festival Artists Week, *Broadsheet* **23**, No. 2, 3–6 (1994).

6. Fernandez [5].

7. Fernandez [5].

8. Tony Fry, "Art Byting the Dust: Some Considerations on Time, Economy, and Cultural Practices of Postmodernity," in Philip Hayward, ed., *Technology, Culture and Creativity in the Late Twentieth Century* (London: John Libbey, 1990) p. 164.

9. Acha Debelah, interview in Jonathan Cohen, director of *Artists in Cyberculture* (Sydney: Cracked Metal Productions, 1993; distrib. by Ronin Films).

10. Virginia Barratt is an electronic artist, performer, curator and member of the feminist art group VNS Matrix. We are jointly conducting an interview-based study of women electronic artists and their relationships to technologies (see Acknowledgments).

11. Moira Corby, interview by Virginia Barratt for Double Agents project, December 1993; see also "*My Memory Your Past:* Interview with Moira Corby," *Mesh: Journal of the Modern Image Makers Association* **2** (Summer 1993) pp. 5–7.

12. Corby interviewed by Barratt [11].

13. Isabelle Delmotte, personal communication, December 1994.

14. Nola Farman, interview with author, November 1992.

15. Nola Farman, Helen Britton, Brad Clinch and Anna Gibbs, artists' statement accompanying the installation *Carsick*, 1992.

16. Farman et al. [15].

17. TISEA was the third symposia in the series coordinated by the Inter-Society for the Electronic Arts (ISEA), a membership organization. The symposium series began in 1985 and now takes place on an annual basis. For more information, contact ISEA, P.O. Box 8656, 3009 AR Rotterdam, The Netherlands. E-mail: <ISEA@MBR.FRG.EUR.NL>. A short history of ISEA can be found in Wim van der Plas, "ISEA: An Introduction," *Leonardo* **28**, No. 4 (1995) p. 288.

18. *Artists in Cyberculture*, Jonathan Cohen, director (Sydney: Cracked Metal Productions, 1993; distrib. by Ronin Films).

19. Grant Fjermedal, *The Tomorrow Makers: A Brave New World of Living-Brain Machines* (New York: Macmillan, 1986).

20. See Jean-Francois Lyotard, "Can Thought Go on Without a Body?," B. Boone and L. Hildreth, trans., *Discourse* **11**, No. 1, 74–87 (1988).

21. Arthur Kroker and Marilouise Kroker, "Body Digest: Theses on the Disappearing Body in the Hyper-Modern Condition," *Body Digest* issue of *Canadian Journal of Social and Political Theory* **11**, Nos. 1–2, i–xvi (1987).

22. Anne Marsh, "Bad Futures: Performing the Obsolete Body," in in N. Zurbrugg, ed., *Electronic Arts in Australia*, special issue of *Continuum: The Australian Journal of Media and Culture* **8**, No. 1 (1994) p. 281.

23. Marsh [22] p. 284.

24. Jon McCormack, "Post-Visual," *Photofile* **42** (June 1994) pp. 46–48; Bill Seaman, "The Emergence of New Electronic Forms in Australian Art—Rodney Berry, John Colette, Linda Dement, Philip George, Joyce Hinterding, Jon McCormack, Stelarc, VNS Matrix," in Zurbrugg [22], especially pp. 359–360.

25. Fernandez [5] p. 4.

26. Walter Benjamin, "Theses on the Philosophy of History," quoted in Fernandez [5] p. 4.

27. See also Andreas Huyssen, "The Vamp and the Machine: Technology and Sexuality in Fritz Lang's *Metropolis*," in *New German Critique*, Nos. 24–25 (1982) pp. 221–237; Judith Halberstam, "Automating Gender: Postmodern Feminism in the Age of the Intelligent Machine," *Feminist Studies* **17**, No. 3, 439–459 (1991); and Claudia Springer, "The Pleasure of the Interface," *Screen* **32**, No. 3, 303–323 (1991).

28. Sadie Plant, "Cybernetic Hookers," paper presented at Adelaide Festival Artist's Week; reprinted in *Australian Network for Art and Technology Newsletter* (April–May 1994) pp. 4–8.

29. For discussions of VNS Matrix and other Australian women technological artists, see Glenda Nalder, "Under the VR Spell? Subverting America's Masculinist Global Hologram," *Eyeline* **21**, (Autumn 1993) pp. 20–22; see also Nicola Teffer, "Body with Organs," Margriet Bonnin, "Zero 1: Technology and Future Art," and Cath Kenneally, "All New Gen," all in the *Natural/Unnatural* issue of *Photofile* **42** (June 1994); Jyanni Steffensen, "Gamegirls: Working with New Imaging Technologies," *Mesh: Journal of the Modern Image Makers Association* **3** (Autumn 1994) pp. 8–11; Bernadette Flynn, "Woman/Machine Relationships: Investigating the Body within Cyberculture," *Body's Image* special issue of *Media Information Australia* **72** (May 1994) pp. 11–19; and "VNS Matrix and Virginia Barratt Interviewed by Bernadette Flynn," in Zurbrugg [22] pp. 419–432.

30. Andrew Ross, "Hacking Away at the Counterculture," in C. Penley and Andrew Ross, eds., *Technoculture* (Minneapolis, MN: Univ. of Minnesota Press, 1991), esp. pp. 107–120.

31. Donna Haraway, "A Cyborg Manifesto: Science, Technology and Socialist Feminism in the Late Twentieth Century," in *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991) pp. 149–181.

32. VNS Matrix interview in Zurbrugg [22] pp. 429–430.

33. See Marsh [22]; and "Stelarc Interviewed by Martin Thomas: 'Just Beaut to Have Three Hands,'" in Zurbrugg [22] pp. 377–395.

34. Stelarc interviewed by Thomas [33] p. 388. For more on technophagy, see Dale Nason and Troy Innocent, "Cyber Dada Manifesto," *Leonardo* **24**, No. 4 (1991) p. 489; David Cox, "Nothing if not Full-On: Notes on the S-Thetix of Cyber Dada Films," *Mesh: Journal of the Modern Image Makers Association* **3** (Autumn 1994) pp. 16–20; and, for a more general account, Margaret Morse, "What Do Cyborgs Eat?: Oral Logic in an Information Society," *Discourse* **16**, No. 3, 86–121 (1994).

35. Marsh [22] p. 288.

36. Anna Sabiel interviewed by Virginia Barratt, December 1993.

37. *Aliens*, James Cameron, dir. (Twentieth Century Fox, 1986).

38. Linda Dement, note in Virginia Barratt, ed., *Tekno Viscera*, exh. cat. (Brisbane: Institute of Modern Art, 1993) p. 8; see also "Linda Dement Interviewed by Glenda Nalder," in Zurbrugg [22] pp. 166–177.

39. Jo Frare and Vicky Sowry, "Intromission," in Barratt [38] pp. 5–6.

40. Sarah Waterson, note in Barratt [38] p. 11.

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