10

Virtual Bodies

Let's take a deep breath before approaching this particular subject—virtual bodies are capricious, enigmatic, and highly problematic entities. Where should we start? Perhaps with this:

> Perhaps the most vivid change is coming in the art that is closest to the human body: dance. If dance is the art that is most embodied, dependent intimately on the state of the body . . . and each art form is heading for its opposite, then the future of dance must be found in disembodiment.
>
> —MARCOS NOVAK[1]

Or with this:

> And far from vanishing into the immateriality of thin air, the body is complicating, replicating, escaping its formal orfanisation, the organized organs which modernity has taken for normality. This new malleability is everywhere: in the switches of transsexualism, the perforations of tattoos and piercings, the indelible markings of brands and scars, the emergence of neural and vital networks, bacterial life, prostheses, neural jacks, vast numbers of wandering matrices.
>
> —SADIE PLANT[2]

Or perhaps this:

> In the cultural bestiary, the body is pulverized and splayed apart, like a "lap dissolve"; a traveller in time where from the viewpoint of the advanced cybernetic technologies of the mediascape, the body is always a big failure in desperate need of supplementary technical prosthetics."
>
> —ARTHUR KROKER[3]

The body is the most revered, fetishized, contested, detested, and confused concept in contemporary cultural theory. Moreover, that is just the natural, corporeal body—things become even more complicated with its virtual counterpart. The concept of *the* body dominates large areas of contemporary cultural, literary, feminist, and cyber criticism, but often in a highly questionable form, since disassembling postmodern impulses have placed the body outside of itself. Although body discourses continually remind us of the body's interconnectivity to all things (through cultural inscriptions, rhizomatic lines of flight and so on), the body has nonetheless been commonly separated from its physiological and psychic contexts. A classic Cartesian split underlies prevalent theoretical concerns with the body, which has imposed an objectified redefinition of our understanding of the human subject, the holistic "person," to render *it* an abstracted, depersonalized and increasingly dehumanized physical object—*the* body. But the human body is not a concept.[4] Bodies are particular, not general. Bodies are not animated cadavers, despite Stelarc's protestations. Bodies embody consciousness; to talk of disembodied consciousness is a contradiction in terms.

But in the body fetishization of recent social and performance theory, we should remember that it is not always the body per se that is being discussed. Rather, it may be the mind (Foucault); the inscribed, political hierarchies of gender (Butler); humanism and matter (Hayles); or metaphysics (Deleuze and Guattari). When the body is "transformed," composited or telematically transmitted into digital environments, it should also be remembered that despite what many say, it is not an *actual* transformation of the body, but of the pixelated composition of its recorded or computer-generated *image*. Virtual bodies are new visual representations of the body, but do not alter the physical composition of their referent flesh and bones. Virtual bodies may appear to be bodily transformations to the (receiver's) eye and mind, but no actual metamorphosis takes place within the (sender's/performer's) actual body. The virtual body is an inherently theatrical entity, and there is an enormous amount of suspension of disbelief going on in relation to it. Let us make our own position clear from the outset. There is no disembodiment, images are still just images, virtual worlds are still clunky, and the web is still primarily a lot of Web pages rather than a *Neuromancer*-style, high-adrenaline, mind-blowing cyberspace of swimming databodies—at least to those who do not easily separate their minds from their bodies.

The Cartesian Mind-Body Split

If we are ever to have pure knowledge of anything, we must get rid of the body and contemplate things by themselves with the soul by itself. . . . so long as we are alive, we shall continue closest to knowledge if we avoid as much as we can all contact and association with the body . . . and instead of allowing ourselves to become infected with its nature, purify ourselves from it until God himself gives us deliverance.

—SOCRATES'

Socrates began it all, Plato elaborated, calling the body a prison and a tomb for the soul, and in 1637 René Descartes famously formulated *The Discourse on Method* (1637), which set out a full-blown philosophy distinguishing, dividing and separating the mind from the body. The "self" was firmly located in the mind, although the body was not left entirely out of the equation since, as a container, it brought about limitations and particularizations on the mind and self. This general philosophical principle dominated Western thought for centuries, although phenomenology and late-twentieth-century cultural criticism sought to dispel the mind-body division ("Cartesian dualism") and emphasize a holistic unity of mind-body-self. However, the Cartesian split is still very much alive and well, and celebrating a glittering revival in cyberculture and academic discourses on virtual arts, where it is rarely acknowledged as such (Cartesianism being very deeply unfashionable), but is rather cloaked in other postmodern discursive (dis)guises.

The cult of the body in contemporary theory is itself (deeply ironically) a Cartesian reconceptualization of flesh and bone into a conceptual and *mental* ontology: as abstracted, malleable, and even useless matter. Its anatomical materiality is rarely described, since this is far less important than the psychological, political, and cultural inscriptions and reconstitutions forced upon it. This can be seen in the work of most celebrated body theorist, Judith Butler, as well as Frederic Jameson, who typifies the confusion and conflation of the external with the internal in an apparently erudite but actually absurd proposal. He suggests, in language quite typical of recent theories of the body, that we can understand an individual by looking at her body—judging a person by his or her "cover" in the same way that we are not supposed to judge books: "Finally the body itself proves to be a palimpsest whose stabs of pain and symptoms, along with its deeper impulses and its sensory apparatus, can be *read* fully as much as any other text."[6]

Paradoxically, even the cult of the body as expressed in the late-twentieth-century desire for "the body beautiful," tailored through diet, gymnasium culture, cosmetics, and plastic surgery, is a Cartesian triumph of mind over matter. Anorexia, a burgeoning disease starkly and perversely encapsulating the body-beautiful obsession, is now understood as the subject's self-destructive, body-destructive demonstration of her ultimate domination of the body by the mind: the powerful, pathological, anorexic mind ultimately controls and destroys the weak and subservient body. Body art, seemingly the most corporeal and visceral of performance genres, can likewise be viewed as the artist's will for the mind to transcend the body. The painful letting of blood by artists such as Ron Athey, Stelarc, Gina Pane, and Franko B is accompanied not by the screams of agony of the normative human body, but by an eerie, awesome, and stubbornly resistant silence marking mental power and bodily denial. In the extraordinary, tortured beauty of these artists' works, the bloodied, naked, body *seems* "all"—simultaneously signifier and signified—but the willful mind is the invisible but overwhelming sign, the ultimate agenda. Succumbing to pain is not countenanced here since, as Socrates told Phaedo, every physical experience of pleasure or pain "nails the soul to the body."[7]

Meanwhile, cultural theory deifies the body and resists the difficult truth that in point of fact the Cartesian split in culture and society is widening, as we sit like Foucault's malleable "docile bodies" watching screens and monitors, becoming ever more psychologically, but certainly not physically, disembodied. Foucault reminds us that this is by no means a passive activity, but is willful, mental;[8] and McLuhan was early (as ever) to recognize the flickering images of television for what they were, an electronic wedge to prize open and deepen the mind-body divide:

> As electric media proliferate, whole societies at a time become discarnate, detached from mere bodily or physical "reality" and relieved of any allegiance to or a sense of responsibility for it. . . . The alteration of human identity by new service environments of information has left whole populations without personal or community values.[9]

Daily dosages of empathetic, mental transference have grown as passive, receptive modes such as television have transformed into active and interactive cyber-wanderings, meeting "real" people to create fictional (MUDs and MOOs) and nonfictional (e-friendship) relationships. While these can be celebrated as liberating, proactive, and creative collaborative encounters, the fictionality and performativity of e-life and communication also poses serious questions about schizophrenic self-representation and consequent problems of relating with others outside artificial environments. Jon Stratton stresses the Cartesian division at play in his analysis of email affairs, what he calls "the increasing acceptance that the 'self' can exist apart from the 'body'" in online activities and remote erotic encounters such as phone sex.[10] Peter Lamborn Wilson provides Stratton with additional ammunition: "Cyberspace . . . involves a curious form of *disembodiment*, in which each participant becomes a perceptual monad, a concept rather than a physical presence," citing phone sex as a preview to this development:

> The deep purpose of phone-sex is probably not really the client's masturbation or his credit card number, but the actual ectoplasmic meeting of two ghosts in the "other" world of sheer nothingness, a poor parodic rendering of the phone company's slogan, "Reach out and touch someone," which is so sadly, so finally, what we cannot do in cyberspace.[11]

Allucquere Rosanne Stone points out how "compared to 'real' space, in virtual space the socioepistemic structures by means of which the meaning of the terms 'self' and 'body' are produced operate differently."[12] Stratton suggests that a consequence of this difference is

> a radicalising of Cartesian dualism. Where, in modern thinking, the body served to contain and limit the self, the singularity of which was guaranteed by the continuity of the mind in the body, there is now an increasing acceptance of the idea that not only are selves separate from the body, they are not limited and determined by the mind's containment in the body.[13]

But against this background, what is vital to understand in relation to digital performance is that the mind-body split is generally at complete odds with the practice of artists and performers. Their work involves—indeed is totally reliant upon—a close harmony and connection between mental creativity and physical skill and dexterity. The fundamental goal of most performers is the eradication of distinction between mind and body—the fluid and unmediated bridge between the inner and the outer—mental or emotional impulse spontaneously combusting as unique and pure physical expression. As Richard Schechner put it in 1977, "His entire effort is in making his body-voice-mind-spirit whole. Then he risks this wholeness here and now in front of others. Like the tightrope walker on the high wire, each move is absolutely spontaneous and part of an endless discipline."[14] Regardless of the medium, performance artists explicitly explore and enact their holistic autonomies and interiorities (gendered, spiritual, emotional, and political), not simply their bodily corporeality. If this process takes place within a recorded electronic or digital environment, it is the medium that is virtual, unreal or disembodied, not the human performer within it. In the performance arts, whether in a theater, on a street corner, or on a computer monitor, the medium is not the message (and never has been); the performer is.

But much cybertheory and digital performance studies have tended to miss this point, to relate instead the metamorphosis and fragmentation of the body in virtual realms to an *actual*, corporeal transformation; or worse still, to a belief in disembodiment. The dislocation and fragmentation of the body in digital performance is an aesthetic praxis which deconstructive critics have hungrily grasped and mythologized, holding up the virtual body as the central icon (immaterial, disembodied), whereas in actuality, it operates as an index, as another trace and representation of the always already *physical* body. The emperor's new clothes of the virtual body are thus being lovingly admired, theorized, and proudly hung up in a wardrobe of theoretical self-deception, as the too-solid flesh of the sweating performer lumbers exhaustedly to the theater bar.

We take a different view, and believe that audiences cognitively and empathetically perceive the performing virtual *human* body (as opposed to a computer simulated body) as always already embodied material flesh. Irrespective of the medium, performance's ontology has for centuries been virtual and simulacral, and the flesh of even the virtual performer remains too solid, and will not melt. Performers generally also share this perception, since their actions in recording images for their virtual body manifestations constitute fully embodied actions of body and mind. Contrary to prevalent critical assumptions, we do not believe the performing virtual body is either less authentic than the live, nor is it disembodied from the performer. What possible use is disembodiment to a performer, or the very idea of a mind and body split?

Bolter and Gromala raise a similar point in relation to digital art, arguing that artists' explorations of the relationship between the virtual and the physical "help to combat the myth of disembodiment":[15]

Digital artists in particular insist on the materiality of their work. They will never abandon or disparage the ways of knowing that the senses give us. For them, even the experience of seeing is not disembodied; it is visceral. Seeing is feeling. What fascinates digital artists is the ways in which their embodied existence is redefined in cyberspace. So they use digital technology to examine the interaction between the physical and the virtual. . . . Digital design oscillates between the physical and the virtual, just as it oscillates between the reflective and the transparent.[16]

Susan Kozel: Dreaming the Telematic Body

I seldom feel without thinking, or think without feeling.
—SAMUEL TAYLOR COLERIDGE[17]

In a notable article from 1994, "Spacemaking: Experiences of a Virtual Body," one of Britain's leading dance and technology artists, Susan Kozel, reflects at length on the digital body and telepresence following her experience "performing" for four weeks in Paul Sermon's seminal installation *Telematic Dreaming* (1992). Working for several hours a day over a sustained period as a simultaneously corporeal body (on her own bed) and a virtual one (her image projected onto a gallery visitor's bed) and interacting with others' telematic presence, Kozel explored in depth the relationship between her flesh body and its virtual counterpart (figure 10.1). Video cameras, monitors and projectors link together beds in two separate rooms using a videoconference ISDN line. Each person's image, lying on a blue bed, is separated from its background using chromakey blue screen techniques, and is transmitted and projected onto the other's bed, and the composite image is shown on monitors. The two bodies (one real, one virtual) thus mutually meet on both beds, and prerecorded video imagery—rich colors and textures—is mixed into the scene to enhance the dream-like quality. But Sermon deliberately avoids providing an audio link so as to concentrate attention on the meeting of two bodies separated in real space but virtually conjoined: "human interaction was reduced to its simplest essence: touch, trust, vulnerability."[18]

Figure 10.1 The image of Susan Kozel is projected onto a bed occupied by a gallery visitor in Paul Sermon's installation *Telematic Dreaming* (1992).

Kozel begins by describing the initial strangeness of the relationship between her actions moving her arms and body alone on her bed "as if in some sort of hypnotic ritual dance," yet simultaneously engaging in an intense and intimate improvisation with other unknown bodies projected on the bed. She felt "little electric shocks" in response to virtual caresses and very soon the real impact of the telematic connections became apparent:

Movement usually began in a hesitant way with hand contact taking on excessive importance. The impact of slow and small movement became enormous. . . . When the movement progressed from these early stages to a sort of full body choreography the piece became an emotional investment which shocked and sometimes disturbed people. . . . The occasions when the movement worked well felt very much like good contact improvisation: a hypnotic feeling of not knowing what is coming next but letting the strong flow of movement carry you onward. When the movement moved through us in this way, based on openness and trust, the distinction between which bodies were real and which were virtual became irrelevant.[19]

But over days, as Kozel became increasingly engrossed in her telematic body as she watched its duet meetings with scores of visitors on the monitors, the "irrelevance" of its status as flesh or data was brought into crisis and reevaluated, as her real body rebelled. Her back, neck, and joints became stiff and painful, and even more disturbing for her, her digestive system and internal organs were beset by aches and cramps:

My real body asserted its presence as a response to the virtual image which had come to dominate my movement while performing. The invisible elements of my body began to take on a new, demanding significance, as if needing to assert themselves to balance the scale. Digestion does not appear on the screen. Admittedly it does not appear through flesh, but it is even less present in a context where the body has lost its three-dimensionality. The more I ventured into the visual, virtual world the more my non-virtual body called attention to itself like an anchor, like ballast. I seemed to be pulled between the two extremes of an imaginary spectrum: the abjection of flesh and the sanitization of technology.[20]

Kozel's experience of her split body becomes like a mythical rite of passage as she recounts tender sexual experiences which thrill her but also fill her with guilt ("would [I] be desensitizing myself to the detriment of relations with my real loved ones[?]") and are punctuated by incidents of violence and defilement. Someone on the other bed produces

a knife, which sends a distinctly corporeal shiver down her spine: its virtuality does nothing to disguise or lessen the psychological and emotional coding of a man wielding a blade over a supine woman on a bed. Another visitor elbows her hard in the stomach, and she doubles over "wondering why since I didn't actually feel it. But I felt something." The only occasion she admits to completely separating her physical and virtual selves was in the worst incident of "cyberviolence" she encountered, when two leather-jacketed men jumped on the remote bed and attacked the image of her head and pelvic area. But even here, she relates her dissociation from her virtual body in relation to a phenomenon that can equally occur in the physical world when people are subjected to rape or brutalization: "I found myself watching my image in the video monitor, paralysed with horror at what they were doing to the woman's body—no longer *my* body . . . a primordial reaction in a sophisticated technological context."

But all other violent incidents and betrayals of trust shake her emotionally and hurt her physically, forcing her to refute popular theories that the virtual body is disembodied or futile. Rather, she theorizes the virtual body as an alternative, yet still material body, inescapably connected to its corporeal embodiment. Crucially, she draws a distinction in her conception of "alternative materiality" between living, moving human bodies and inanimate objects. She describes how sometime after sharing a fifteen-minute improvisation session, a man returned and presented her with a rose. Her inability to grasp it (she could only trace its outline in virtual space or pass her hand through it) rendered it fundamentally immaterial; its lack of kinetic or emotional response (in stark contrast to the bodies of her virtual partners) made it a metaphorical rather than a material presence. She concludes that "the distinction between materiality and immateriality in the technology is movement: as moving beings people take on an alternative materiality, while objects become immaterial in their inertia."[21]

Kozel's article is a definitive phenomenological expression of the part-split, part-organic experience of the relationship between the corporeal and virtual body. In fluid and intensely experienced waves, she vacillates between feelings of separation and oneness—of losing ("the ability to disappear is central to the experience of the body electric") and then being sharply reminded of her physical body ("then without warning the flesh of my body would reassert its presence"). We are struck by her discourse's closeness to Barthes' *Camera Lucida* (discussed in Chapter 6) both stylistically in its soul-searching, subjective scrutiny, and philosophically and epistemologically in its conclusions. Where Barthes is categorical about the palpable reality of the Photograph, so too is Kozel about the materiality of the virtual body, as seen, for example, in her discussions of the virtual sex she experienced. She adamantly maintains that these encounters were "not a substitute for sex" or a "technological replica," but "undeniably real, not a compromise." Kozel also echoes Barthes's suggestion that the Photograph can be "more real" in its potency than the physical moment it captures, when she discusses the "stilted" and "wooden" encounters she had in the gallery coffee bar with the frequently returning

"virtual lover," who gave her a rose. "Although both contexts were real, our virtual relationship seemed to be more meaningful . . . *not* because our bodies were digitalised and abandoned . . . [but because] our virtual rapport had a greater physicality and intimacy than our real engagement."[22]

As with the question concerning the reality of theatre, that of the reality of virtual experience becomes spurious, with no adequate grounds upon which to test it. In some respects, the advancement of virtual technology will help to render the claim that theatre is an artificial reproduction of reality even more non-sensical. . . . It becomes more and more difficult to sustain a clear distinction between truth and falsity when the phenomenology, or direct experience, of technology is taken into account; when, according to Marshall McLuhan, the contours of our own extended bodies are found in our technologies.[23]

She draws on McLuhan's notion as well as Frederick Brooks's research into "Intelligence Amplification" to stress the electronic body as an amplification and extension of the flesh body to which it is intimately entwined. Rather than rendering the corporeal body obsolete, telematics offers it a fourth dimension, where it is able to do things the physical body cannot "such as map itself onto another or disappear . . . [and] challenging existing ideas of what it was possible for two bodies to do. We could pass through each other. . . . Our bodies seemed to be infinitely mutable, while they never ceased to be *our* bodies." As the Photograph for Barthes is a return to and spiritual reanimation of the real, telepresence is the same for Kozel in relation to the body. "Telepresence has been called an out-of-body experience," she says, "yet what intrigues me is the return to the body which is implied by any voyage beyond it. Once plunged back into flesh, what has changed?" It is thus not the body's voyage out into virtual embodiments that most radically alters human perceptions of the body, "but the inevitable return and the lasting effect that the outward motion leaves on the reunited body. It is here that the political dimension of VR resides."[24]

Kozel's experience of direct connection and physical and psychological empathy with her virtual body provides an important perspective, but it should not be forgotten that it is a performer's perspective. That is not to suggest in any way that it should be mistrusted, and Kozel is a performer (and an intellectual) of great integrity and sensitivity. But it is in both the performer's psyche and job description to open themselves physically and emotionally, and to welcome vulnerability in order to experience virtual pains and pleasures "as if" (in Stanislavski's phrase) they were real. Is it the same experience for the nonperformer, the visitor on the other bed? The simple answer is "sometimes," depending on who they are and how much they too are prepared to open themselves, be vulnerable, and "perform" with intimacy and sensitivity.

The fact that each visitor interacts with Kozel, a trained dancer and performer, means that she can guide and lead the virtual contact improvisation, but the use of a performer

on one of the beds during this four-week installation in 1992 was actually a rare incarnation of *Telematic Dreaming*. Since then, the two beds in two rooms have been meeting places for gallery visitors only. The piece has become a popular installation classic, exhibited in more than twenty different galleries and locations, including for a year at London's Millennium Dome during 2000 and over many years as a permanent exhibit at the National Museum of Photography, Film and Television in Bradford, England. We have watched and participated in the installation numerous times in different galleries and have seen a vast range of different types of exchanges and "performances" (which is, of course, one of its charms).

But the fact that others in the gallery also stand close to the beds and observe tends to inhibit extreme behaviors or intimacies, and people in one room tend to wait for a friend or partner to get on the other bed before they get onto theirs. Children are far less inhibited, and are also most prone to virtual fisticuffs, but their blows are playful, and reactions to virtual impacts are melodramatically performed rather than "felt." But whatever the age or sensibility, and whether improvising with strangers or friends, we observe almost universal pleasure, wonder, or delight on the faces of those who venture onto the beds to make contact in the same space and time with someone else's projected body image. Whether or not visitors identify as intensely with their virtual bodies as Kozel, Paul Sermon's wonderful, exquisitely simple and groundbreaking installation creates a type of magic, a sort of lucid dream. *Telematic Dreaming* is an example of where digital technology and performing bodies are combined to create something unique and unprecedented: something genuinely and distinctly new. Few people would dare to venture onto the same bed as the real Kozel (or other stranger) to commence a physical improvisation, but her virtuality enables it. Over years, tens of thousands of people have, like Kozel, "luxuriated in the physical intimacy and sheer decadence of it all," and they will continue to do so as the work is destined to stand the test of time.

Digital Dissections (or, Project-ing Visible Humans)

The digitization of the body reached an historic moment with the multimillion dollar National Library of Medicine's *Visible Human Project* (1994). Biomedicine, medical imaging, and computer technologies were brought together to create an immensely detailed digital dissection archive of two human bodies: a male prison inmate executed by lethal injection (Joseph Paul Jernigan), and an anonymous fifty-nine-year-old housewife who had died of a heart attack. Dubbed "Adam and Eve" by the project team, their corpses "were MRI scanned, frozen in gelatine to −85 degrees C, quartered, scanned again, sliced through (into thousands of slices between 0.3 and 1 mm thick) and photographed repeatedly, as each layer of their bodies was planed away, turning to dust."[25] The digitized images of the successive, minute layers of the bodies' compositions were arranged into various programmed data sets to enable reconstruction and viewing of all cross-sections

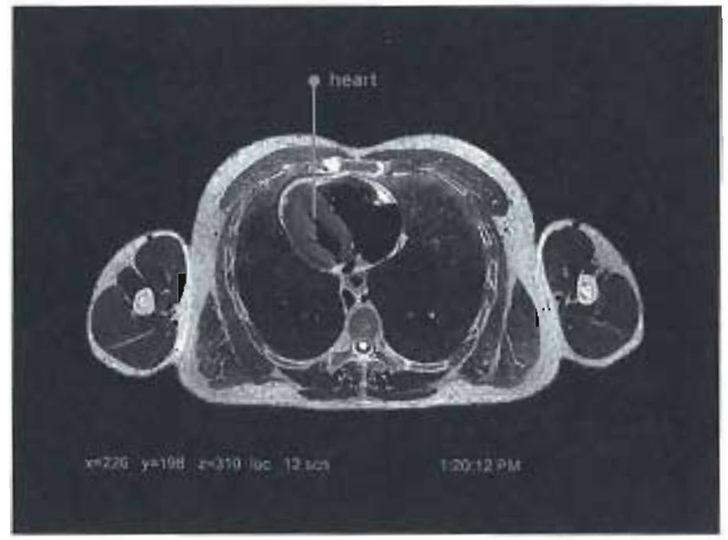

Figure 10.2 One of the *Visible Human Project*'s bodily cross-sections used (with graphical overlays added) by Paul Vanouse for his installation *Items 1-2,000* (1996).

within any plane; detailed examination of organs, body parts, skeletal and circulatory systems; and even animated body "fly-throughs" (figure 10.2).

In her book about the project, Catherine Waldby suggests that while the *Visible Human Project* has provided a clinical benchmark for human anatomical study, the figures also "prefigure some new future for the human body, they imply the possibility of frightening, rather than consoling, transformations."[26] These "exhaustively visualized" bodies are "perfectly co-operative image objects . . . available for all forms of display and penetration, without recalcitrance and resistance."[27] Unlike real bodies, they are endlessly replicable, transmittable, and divisible. She also notes their disconcerting presence as "virtual apparitions," the dead reanimated into life once more through the miracle of biodigital science, or perhaps "virtual vampires" and "cyber-zombies" dwelling in the netherworld somewhere between life and death: the digital undead.

In line with many other writers, Waldby draws attention to the male subject, Jernigan, whose execution as a convicted murderer places his clinical dissection within long historical traditions of medical and anatomical experimentation on criminals and vagrants. His status as prisoner is eternalized through the *Visible Human Project*, where he is once again condemned to "an afterlife of arrest, incarceration and punishment."[28] Meanwhile, David Bell draws parallels with the digitally created Sid 6.7 character in the film *Virtuosity* (1995), a composite serial killer computer simulation created by the police, who

escapes from cyberspace to reek havoc. "Could the Texan murderer and the Maryland housewife similarly cross back into RL?" Bell ponders. "As with the futurological speculations about A-Life and posthumanism, we are as yet uncertain about the outcomes of these experiments in bringing life to cyberspace, and cyberspace to life."[29]

Interactive artist Paul Vanouse reflects on Jernigan's cyber-incarceration while discussing his installation *Items 1–2,000* (1996), which was directly inspired by the project—the title refers to the two thousand thin slices into which Jernigan's body was dissected. Vanouse identifies the telling resonance with Michel Foucault's ideas in *Discipline and Punish* (1979): "the disciplined body of the prisoner is subjected to the ultimate surveillance process (minute dissection) and his body, essentially 'drawn and quartered' in the ultimate spectacular punishment."[30] Vanouse's installation uses images from the *Visible Human Project* CD-ROM alongside pictures from medical and dissection manuals, and Vanouse's own sketches and memories as a student in the anatomy morgue. These images and memory fragments are triggered by visitors passing a pen-style stainless steel barcode scanner across barcodes on a sheet of glass suspended above a human figure half-submerged in a block of wax. Users thus become like surgeons, drawing scalpel-like incisions over barcodes positioned above (and corresponding to) the cadaver's different body organs. Vanouse's jarred recollections of his time dissecting corpses are activated on every third scan, which "address the de-humanisation of the corpse" and "attempt to deconstruct the rationalization processes of western bio-medical practices and to discover a point of empathy with the subject"[31] (figure 10.3).

Empathy with Joseph Jernigan, the male subject of the *Virtual Human Project*, is the starting point for Mike Tyler's *Holoman: Digital Cadaver* (1997), a solo multimedia theater performance with actor Frank Sheppard in the role of Jernigan. Sheppard lies naked on a white-sheeted dissection table as images of Jernigan's virtual body are downloaded from the Internet and projected on a screen behind him. Sheppard then sits up and gets off the table: "I'm off-centered. My flesh has been erased, but I'm standing" he says.[32] The performance explores Jernigan's different embodiments (physical and digital) as he symbolically returns from the dead to confront his digital double and undergo a severe bodily identity crisis. He speaks directly to the audience, extending Plato's cave metaphor to complain how his body has become "a shadow's shadow thrown on the wall of some kinda 25-dimensional cave":

I ask you, why was I picked for the hard disk?
To be crunched like a silicon snack chip,
As convenient cadaver for the queasy,
Click on the mouse, you can cut me that easy.

Isabelle Jenniches's digital designs for the performance utilize STEIM's *Imagine* software to merge live video imagery with the *Visible Human Project* data set in real time to

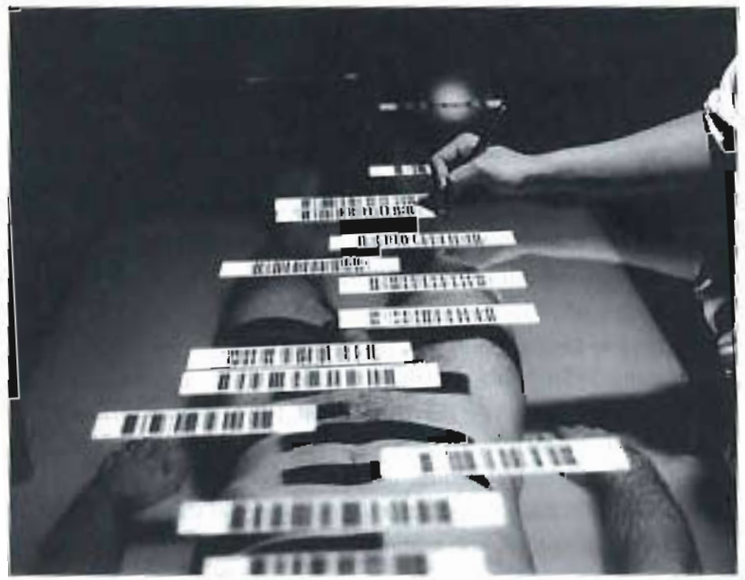

Figure 10.3 Users scan barcodes suspended above model Ryan Douglas' body to trigger images and audio fragments in Paul Vanouse's *Items 1-2000* (1996).

create the effect of Sheppard being "inside his own body."[33] Maaike Bleeker's analysis of *Holoman: Digital Cadaver* stresses its importance in presenting a phenomenological critique of the body, and reflects how Jernigan himself, through his fear of death, was tricked into seeing the *Visible Human Project* as an escape from the finitude of the body, rather than as a new incarceration. "Growing up in a modern society typified by a certain 'disembodied' lifestyle" she says, "it is easy to forget the material basis of our existence . . . [and accept] the Cartesian paradigm in which the body gets marked as something we *have* instead of something we *are*."[34]

Davide Grassi's performance installation *Nuclear Body* (1999) makes extensive use of medical technologies to create a complex, visually mutating virtual body. Like the *Virtual Human Project* and *Items 1–2,000*, it also dissects and lays bare the body's organs and subsystems, but in this case the artist's own. Conceiving it for the Slovenian "The Beauty of Extreme" Festival, Grassi created what he calls his "double," but a "clone without a skin . . . an ideal existence, comparable to the image of Dorian Gray . . . that lives his own cyclical life in fluid aggregation and originates from the digital uterus."[35] Grassi used medical scintigraphy techniques, intravenously injecting radioistopes to provide digital images of his inner organs, musculoskeletal system, blood cells, and body tissues via a gamma camera. Sixteen hundred of the scintigraphic images were combined

to create a animation of Grassi's body double, which constantly morphs and mutates between its inner and outer body form, with its veins, organs, and skeleton appearing and disappearing, its vivid colors radiating and changing hues.[36]

Gallery visitors view the *Nuclear Body* through six viewfinders placed around a large pipe. Inside the pipe, the body animation is projected onto smoke, which enhances the body's sense of constant flux and dissolving ethereality. Internal body sounds such as blood flowing and the brain sending bioelectrical signals to organs (obtained using ultrasound and other advanced medical techniques such as EEG and EMG[37]) provide a rich accompanying soundscape. Like Waldby, Bell, and Vanouse, Grassi has also stressed that to digitize the body's inner structures and organs entails a direct technological invasion of the body. For each of these artists and theorists, the digital dissection of the body may ultimately produce a virtual form, but the means to that end are distinctly material, visceral, and corporeal. Grassi's *Nuclear Body*, like those in the *Visible Human Project* is not only dissected, but also invaded—both by technological instruments and by the curious spectator's gaze. For Grassi, the direct medical invasion undertaken to create his digital body renders his actual body "contaminated at molecular level and therefore altered," while his rent-open virtual *doppelgänger* conveys a complex interplay between the imaginary and the sensory, and opens significant and troubling questions about survival in an immaterial world.[38]

British multimedia theater company doo cot's *Frankenstein—The Final Blasphemy* (1999) uses digital technology to enact a much simpler, but nonetheless theatrically powerful dissection effect. Performer Neagh Watson stands naked on stage in the role of the preanimated monster corpse, lit only by the white light of a projector. A computer graphic projection of a vivid red line then slowly appears to slice through her body, beginning at the throat and scoring down to her stomach. Video footage of actual human autopsies is also projected onto the severe and clinical white set and floorcloth. Once "brought to life," the monster is an eight-foot puppet, expertly manipulated by Watson, who also acts in sequences with the puppet, whose "view" of her is projected live via a hidden camera in one of its eyes.

Medical Bodies

The frequency and extent to which the virtual body is correlated to the flesh and blood of surgical, medical, genetic, and molecular science is striking. Chicago dance company The Anatomical Theatre collaborated with a molecular biologist (Doug Wood) and a physicist (Pangratios Papacosta) for its exploration of cellular biology, genetics, quantum physics, and cosmology, *Subject: Matter* (2000). It begins with a sequence like a court dance where each dancing couple represents a base pair in the DNA molecule, after which

Matter and antimatter pairs are personified in duets enacting the "creation/destruction dance" of particle materialization and annihilation. The relationship between the black holes and the stars is dramatized as a whirling waltz, a ballroom of cosmic scale, and dancers emulate the locomotive strategies of microscopic organisms, expanding the cellular activity within a single drop of water to fill an entire stage.[39]

For *ACTG* (2000),[40] a collaborative telematically linked dance performance at the Cellbytes 2000 Festival (Phoenix, Arizona), choreographic materials were devised to correspond to the letters in the title. These related to the theme of the choreography, the human genome, each representing the basic four chemicals that comprise DNA: adenine (A), cytosine (C), thymine (T), and guanine (G). One of the letters was computer selected and extracted every eight seconds (corresponding to the video-stream time lag between the two performance spaces) to prompt choreographic changes in the performance. Critical Art Ensemble's performance *Flesh Machine* (1997) combines a performed presentation about genetics and reproductive technologies, a specially created biotech CD-ROM about in vitro fertilization (IVF), and interactive elements where spectators undergo a donor screening test. The test extracts blood that is analyzed to provide a DNA sample; visitors who "pass" the screening test are presented with a certificate of "genetic merit," and their cell samples are held for cryo-preservation. Like much of Critical Art Ensemble's work, *Flesh Machine* explores and exposes the myths, ethics, and political implications behind technological science, and the normalization of its marketing and propaganda.

Contract with the Skin

The human cell structure—"nucleus, cytoplasm, membrane, envelope"—provides what Paulo Henrique calls the "creative tissue"[41] for choreographic movement, and the allegorical and symbolic starting point for his enthralling dance-theater performance *Contract with the Skin* (2000). Skin itself—nakedly exposed, massaged, and computer-scanned to provide textured surfaces and screen projections—is put through a metaphorical and theatrical microscope, as computer images are triggered by movement onto a rear screen and two stage video monitors. It opens with a beautiful, overweight woman dressed only in white briefs, who walks slowly and gracefully around the tightly lit perimeter of a stage space around ten meters by five meters. Her broad shoulders and hips, large breasts, and tummy—her voluptuous expanse of *skin*—captures the central theme from the outset and also lets one know this is unlikely to be a conventional dance show.

She continues her circumnavigation of the space, while other, more traditionally shaped dancers enter to work in the central area. Their choreography moves from expressive, undulating phrases to slow, precise gestures, and from everyday movements to sudden, unexpected fragments of classical dance. A female dancer struggles to get out of her costume, stretching her arms inside it, so that she appears to be trying to escape from a membrane or another skin. She eventually succeeds, emerging naked and relieved, while a male dancer performs a duet with a plaster cast of a leg, which he manipulates with two wires. The large woman rolls on the floor, her soft, rounded movement counterpointed

by thin, scribbled black lines that spill and splash onto the rear screen, building an abstract picture like a Jackson Pollock drip painting. The music and sound score, mixed in real time by sonic artist Rui Leitão, is dense and sensory featuring deep, electronically treated notes and chords, a wailing classical voice, slow violin strings, and synthesized white noise.

At one point, the large woman stands in near darkness with only her torso lit, while the rear screen plays an image of a skeletal, skinless hand, video-mixed with fragments of what appear to be broken Russian letters. From behind, two hands come around her and begin to massage and gently pound her stomach, and unearthly, subterranean musical sounds give way to the sound of Edith Piaf's "No Regrets" (sung in English). The woman begins a simple, repetitive movement routine. Stretching out an arm and crooking it, bringing it in to caress her cheek, and swinging her hips from side to side, she finally "dances." A male dancer undresses and once naked, touches her skin and hair, entangling his long hair with hers. As they move together, against rising, granular musical chords, a soft-spoken voiceover says:

> My skin contract is inevitable, being in the skin. Being skin is inevitable. . . . A contract with the skin *is* inevitable. Did you read between the lines? Is your contract inevitable? . . . Did you choose your contract? A contract with the skin is inevitable. . . . My skin is preconceived. . . . It is inevitable being the color of skin that I am. Would you change your color, contract? Is it inevitable being in your skin? . . . Are you satisfied with it? Temporarily, socially, culturally? A contract with the skin. I am a contract with the skin. I am, politically, socially, culturally, individually, inevitably, a contract with the skin.

As the voice goes on, a naked female dancer enters with a phallic, clear glass vase held to her crotch and, in a symbol of male orgasm, slowly pulls a long, dripping wet, translucent piece of plastic from it, as water spills on the floor. She opens the wet plastic and puts on what is now revealed to be a transparent raincoat, another "skin" that clings to her, as she bends down and allows a long line of her spittle to flow into the vase. The spittle image, as well as *Contract with the Skin*'s life-affirming celebration of human flesh, echoes the work of choreographer Jérôme Bel, who similarly exalts in this liberating sense of openness, respect, and love for the naked human body—its shapes, its form, its sexuality, its *skin*.

Dumb Type

The virtual body's relationship to medical science provides the central theme for Dumb Type's *OR* (1997–99), where a line of four full-body-length glass laboratory slides imprison and display digital bodies. The four slides have a thin LCD film sandwiched between two long sheets of glass, and play video images of seven male and female bodies, which switch between semiopaque and transparent, and transform and metamorphose in response to sensors that track visitor movements.[42] Placed on a white carpet, these giant, sterile, quasi-medical laboratory exhibits invoke images of moving corpses on a mortuary slab, but also trace the mutating materiality and immateriality of the virtual bodies as though through a cellular microscope. Dumb Type has exhibited *OR* as an installation, and also in more performative incarnations, on a white circular stage with a semicylindrical wall, presenting a sophisticated multimedia meditation on the border territory between life and death. The theme is explored from multiple perspectives: philosophical, cultural, corporeal, medical, emotional, and spiritual. The lighting on the all-white set is so bright it is almost blinding, emphasizing Dumb Type's aim to take the audience into what it calls

> the state of "white out" like in a blizzard, where you are deprived of ability to see, where you can't recognize anything, where you don't know where you stand anymore, where you may not know whether you are alive OR dead. But what distinguishes one from the other? Where is the border? What is death? What is it?[43]

Dumb Type is one of Japan's most distinctive and aesthetically inventive artist collectives, producing work in varied forms and media, from large-scale live performances to media installations and printed publications. Based in Kyoto, its artists possess and combine multiple skills from computer programming to visual art, architecture, acting, writing, music, and Butoh performance. The relationship between the body and technology is a central theme, and *OR* continued the company's exploration of mortality begun in *S/N* (1992–96), which combines energetic new dance, multiple projections and a television talk show format. The performance begins with a man scrabbling around the space on all fours, talking unintelligibly, while a narrator (played by director Teiji Furuhashi) explains that the man is deaf and translates his animal sounds as meaning that he wishes to dance the tango, at which point he attaches the label "Homosexual" to the animal-man's clothes. Furuhashi wears one too, and he and two other performers mix ideas of fiction and reality to come out as gay men and, in Furuhashi's case, to reveal he has been diagnosed as HIV-positive.

A high-tech, two-tiered staging features four separate screen projections across the lower level wall, running images and pieces of text. These include, during one sequence, a jumble of animated words: "MONEY, LIFE, LOVE, SEX, DEATH," and in another, each screen shows separate images of couples embracing with a subtitle across their width reading: "Can you see which is the person with AIDS?" (figure 10.4). Above the screens is a narrow, raised space where the performers move laterally left and right. The projections include images and pieces of text which complement and connect with the mechanical, insect, and animal movements of the performers above. It ends in a climax of strobe lighting, projected images of huge close-up faces, live robotic dance movement, agitated cries, and shrill screams of unfulfilled desires: "I dream . . . my gender will disappear . . . I dream . . . my nationality will disappear."[44] The performers undress and then literally

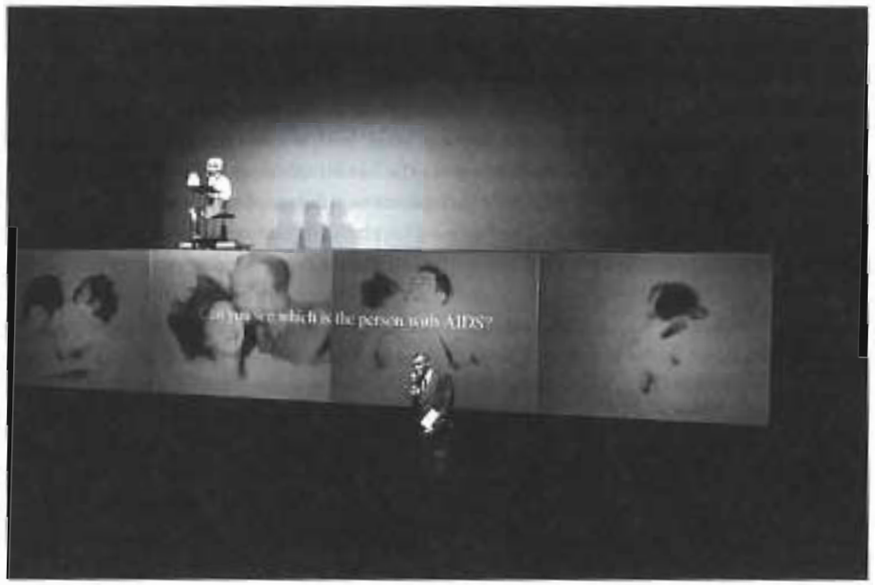

Figure 10.4 Dumb Type's split-level multimedia theater production *S/N* (1992–96). Photo: Yoko Takatani.

disappear, dropping out of view behind the wall, in an image that suggests both rebirth—as the naked figures slip out of sight as if down an invisible birth canal—and a sudden descent into the grave.

Furuhashi's consciousness of his body and its fragility in the face of AIDS (he died of the disease in 1995) is captured and transfigured in one of Dumb Type's most beautiful and uplifting works. *Lovers: Dying Pictures, Loving Pictures* (1994) is a panoramic 360-degree installation of enormous lyricism and visual presence. When we saw it in 1995, unaware at the time of its underlying AIDS theme, we were struck, and moved, by the way in which the formal, conceptual modes of bodily movement stirred unexpected and deep feelings of human longing, love and loss. Computer-controlled laserdiscs are linked to seven projectors on a tall metal shelf rack in the center of the space, sending bright images of five life-size, naked men and women around the otherwise dark walls of a square room. The projected bodies have a luminous and ethereal, yet classical, quality as they move around all sides of the visitor. A man runs around the entire circle of the wall space; two figures slowly embrace; others stand still in profile, or in strong, statuesque, open-armed poses. A motion-sensing system responds to the visitors' movement, prompting different actions, including surrounding the visitor with a circular ring on the floor composed of textual phrases such as "DO NOT CROSS THE LINE OR JUMP OVER" and "A

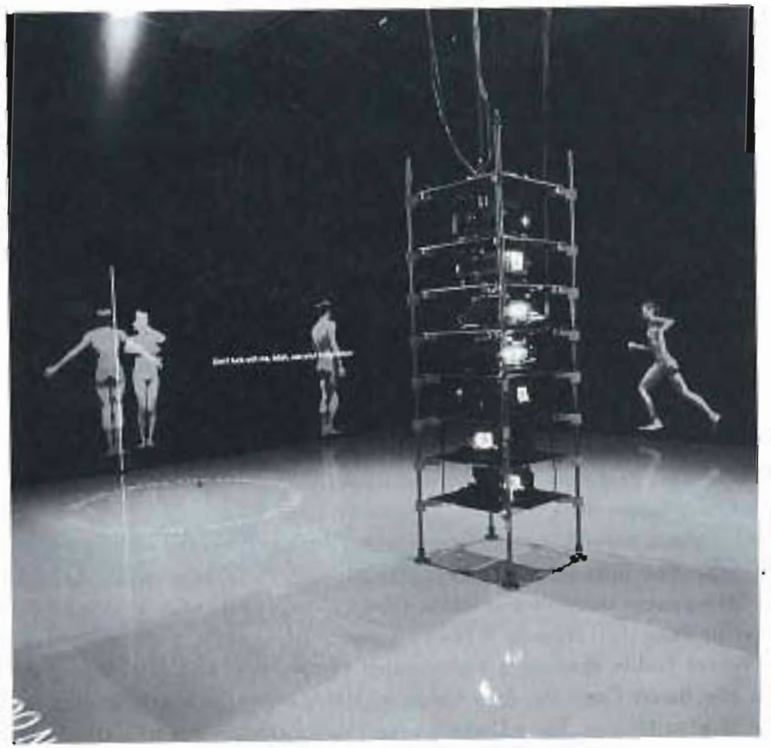

Figure 10.5 Teiji Furuhashi's beautiful "tableau mourant" laserdisk installation *Lovers* (1994). Photo courtesy of ARTLAB, Canon Inc.

JAILBREAK OVER ORDINARY FIELDS IS HARDER THAN OVER WALLS AND WIRE FENCES." Other pieces of text are projected like small, subtle subtitles onto the walls: "Love is everywhere," "Don't fuck with me, fellah, use your imagination." Moving close to the walls sometimes prompts an image of Furuhashi to appear from the blackness and move toward you, stretching out his arms as if for an embrace. But then he clasps them around himself and falls backwards, disappearing once again, like a benevolent spirit or ghost, passing away once again into the darkness (figure 10.5).

In one sense, the virtuality of the bodies and their lack of materiality is emphasized in their visual crossings past and "through" each other, and critics have variously described *Lovers* as a "*tableau mourant*,"[45] "a dance of missed connections,"[46] and a "dream-like pantomime."[47] But in another sense, and in what we would suggest provides its real aesthetic power, their virtuality renders the bodies poetic and metaphorical, symbols of the always

already ghostly and ephemeral status of the physical body: a brief and lonely container for the self or spirit, ever searching for communion with others, and for existential connection.

Fragmenting Virtual Bodies and Conjoining Them with Real Ones

Richard Lord's *Web Dances: Lifeblood* (1997) is a tongue-in-cheek response to the question "what is a virtual dance?" He concludes it is a dance that does not exist in reality, does not involve a real dancer or a real space, but can nonetheless be experienced by an audience member. His solution is a Web-based text description of the experience of watching a dance, what he calls: "a low-bandwidth virtual dance . . . [that] was created in 1997 and has remained unaltered ever since."[48] But it is the ability to alter, fragment, and transform the digital image-body continually that holds most appeal to others. Igloo's *Windows 98* CD-ROM (1998) provides ingenious opportunities for the user to instantly divide, fragment, multiply, and choreograph digital dancers and their body parts by simply dragging-and-dropping them with the mouse; and the passing of the cursor over the image-body of a naked man in Bjørn Wangen's Web-based *id* (2002) splits and fragments it to great and varied effect.[49]

Victoria Vesna created an early example of a website enabling visitors to construct digital bodies from different components (*Bodies Inc.*, 1995) and her *Notime* (2001) allowed people "to represent themselves as 'meme fabrics'—geometries of data-bodies containing information about their creators."[50] Nancy Burson was one of the first computer artists to create virtual bodies through a sophisticated compositing and blending of different photos. Her *Beauty Composites: First Composite* (1982) mixed photographic images of the faces of Marilyn Monroe, Bette Davis, Sophia Loren, Audrey Hepburn, and Grace Kelly, while her *Beauty Composites: Second Composite* (1982) merged Meryl Streep, Jane Fonda, Brooke Shields, Diane Keaton, and Jacqueline Bisset. The results are two faces of compelling, iconic presence (rather than strictly "beauty"), two highly auratic virtual film stars, each clearly belonging to their separate movie eras.

The paradigm has famously been extended into the real body of French performance artist Orlan during her satellite-transmitted series of performances *The Reincarnation of St Orlan* (from 1990), where her face is transformed under local anesthetic by plastic surgeons while she reads out pieces of text and talks to her remote audience via video satellite (figure 10.6). Each surgical performance introduces a new element to her composite-image face:

> Her forehead is from Leonardo's *Mona Lisa*; her chin is from Botticelli's *Venus*; her nose from an attributed sculpture of Diana by l'École de Fountainebleau; her mouth from Gustave Moreau's *Europa*; and her eyes from François Pascal Simon Gérard's *Psyche*. . . . Everything about Orlan is artifice, from her name to her body, which remains a work in progress. . . . No longer does art imitate life. In Orlan, life imitates art.[51]

Figure 10.6 One of Orlan's series of satellite-transmitted operating theater performances entitled *The Reincarnation of St Orlan* (from 1990).

Orlan's corporeal body thus becomes a type of "virtual" body itself, characterized by the same malleability and potential for metamorphosis as the digital image body. As Auslander puts it, *The Reincarnation of St Orlan*: "valorizes the dematerialized, surgically enhanced, posthumanist body, a body that experiences no pain even as it undergoes transformation because it has no absolute material presence; its materiality is contingent, malleable, accessible to intervention."[52] In more recent work, Orlan has reverted to the computer to reconfigure her malleable visage less permanently, conceiving frighteningly garish and grotesque self-portraits based on Central American Mayan iconography and themes from mythology (figure 10.7).

As we have stressed, the digital body, as created and represented in software programs, is an image only: it has no form or matter other than as digital pulses projecting light and pixels onto a screen; a hollow visual shell without internal substance. Kimberly Bartosik's essay "Technogenderbody" discusses the phenomena in relation to the dance software program *Life Forms*, where the graphical figure is not a body in any true sense at all, but "only a shape of space." The see-through avatars could hardly be more different from real dancers:

Figure 10.7 As the digital revolution blossomed in the late 1990s the reconfiguration of Orlan's visage was transferred from the cosmetic surgeon to the software program for her *Self-hybridation* images (1998–2000).

They have no blood or organs, no heat, no fragility. No bones or flesh, they are weightless, without mass. Sexless, they do not have breasts which swell premenstrually or genitalia to be stuffed into a dance belt. No semen, eggs or womb whose vulnerability or cravings could change the course of multiple lives. They are infallible, uninjurable, consistent, without difficult personality or habits, non-confrontational, never moody or obstinate. Perfectly disciplined, they react at the touch of a finger, showing up when the screen is turned on, disappearing when the correct key is pushed. They have no intimate relationship to their own form, able to dance even in a divided, fragmented state: manipulate the torso, head, right ankle, left finger separately, and the other segments remain unaffected. Without volition, they never need to question why they are asked to do something.[53]

Theoretical and practical viewpoints on the performing body and its relationship to technology polarized in the mid-1990s, and Guillermo Gómez-Peña highlights a turning point "when the artworld went high-tech overnight," whereupon performance artists quickly adopted one of three positions:

There were those . . . who advocated the total disappearance of the body and its replacement with digital or robotic mechanisms; others believed that the body, although archaic and "obsolete" could still remain central to the art event if physically and perceptually enhanced with technical prostheses.

The artists of the "Apocalypse Culture" responded . . . by adopting a Luddite stance, attempting to reclaim the *body primitive* as a site for pleasure, penance and pain, and to "return" to a fantastical and imaginary neotribal paganism, very much in the tradition of US anarchist "drop out" culture.[54]

Birringer has reflected on the prevalence of the latter grouping, but sees the phenomena as being much more intertwined with the politics of technology than Gómez-Peña's interpretation of simple Luddite rejection. The focus of performance art since the 1980s toward what Birringer characterizes as the "abuse, violation, derealization, or erotic fetishization of bodies"[55] presents a direct psychic reaction to the crises of the body and identity brought about by the technologization of contemporary culture:

If I note the absence of a spiritual sensibility in Western physical theater, I am of course assuming that there is a connection between self-loathing, dehumanization, and a disintegrated spirit of body. . . . Such abjection in the performances of the disjointed, tortured body indicates the phantasms of the collapsing boundaries of identity and those between the symbolic and meaninglessness. . . . The abjection I have noticed, as well as the disavowal of an organic, whole body, reflect a reaction to the disturbed body rhythms in our Western technocultures and to the dislocating experience of migration.[56]

Contrasting views on the digital body emphasize, on one hand, its freedom as a weightless, unfettered form, and on the other its bondage as an infinitely malleable and controllable entity. Optimistic conceptions therefore stress its imaginary, metamorphic, and fantastical possibilities, while dystopian views hold that the digital body operates as what Harald Begusch calls "a weightless shell, as a translation of physical materiality into a controllable code, as the realization of the Cartesian fantasy of the calculable, or as an expression of the occidental image of a smooth, mouldable and controllable body."[57] But in the feeding frenzy of recent discourses on the digital body, it should not be forgotten that a remarkably similar debate was staged previously in relation to photography, where the body is equally "captured" in what Allan Sekula calls "a double system . . . of representation capable of functioning both *honorifically* and *repressively*."[58] In digital performance, the optimistic, "honorific" view is prevalent, although not entirely dominant, with some installations, net.art and CD-ROM works exploring negative aspects of the digital body, particularly through its depiction as a socially controlled or politically inscribed object. But in live theatrical and dance forms, the virtual body's transformational beauty and shimmering ethereality is generally cherished and celebrated.

Random Dance Company

Wayne McGregor's acclaimed British digital dance group Random Dance Company typifies this celebration, exploring the complementarity between live and virtual bodies in a remarkable multimedia trilogy centered on the elements: water (*The Millenarium*, 1998),

fire (*Sulphur 16*, 1999) and earth/air (*Aeon*, 2000).[59] *The Millenarium* (1998) creates a "futuristic environment of digital bodies, virtual space and extraordinary computer generated graphics . . . [in] an aquarium-like world where the live and the present meets the live and non present in a volcanic dialogue,"[60] while *Sulphur 16* provides even more extraordinary and breathtaking moments fusing live and projected dancers. It opens with a shimmering, ghostlike giant image of a solo female dancer projected onto a fine gauze scrim at the front of the stage, and lights gradually brighten to reveal her comparatively tiny live counterpart behind it, center stage. Later, two virtual dancers perform a fluid and sensuous duet, appearing to move *inside* and through one another as they cross one another, become entangled, and seemingly "step into" one another's bodies. In one exuberant routine the entire company of dancers are joined by their virtual doubles, and the stage is filled with real and digital dancers (whose images bleed and double again from front to back projection scrim) in a *tour de force* sequence. Although created as late as 1999, it was one of the earliest examples we saw of a truly sublime and mesmeric theatrical conjunction of virtual and live performers on a dance stage.

The company emphasizes how technology "stimulated every aspect of the devising stage, leaving its futuristic impression upon choreography and design," and McGregor's lightning-speed choreography and wonderfully strange, often alien-like physical vocabulary mixes the personal, the organic, and the machinic. He describes how he "places the concepts of the body, time and space into fresh dimensions"[61] and "pushes dancers to amazing new limits . . . [of] articulation, questioning and exploring ideas about the technology of the human body."[62] He extends this idea further in *Nemesis* (2002) where the live dancers wear large, pump-action, prosthetic arm extensions (figure 10.8). Here, as Jackie Smart observes, McGregor's movement language

> plays a kind of double game around notions of the organic and the technological, travelling between extremes of incapacity and superhuman flexibility and strength. In the first half, the dancers' bodies seem to stretch and twist themselves almost to a punishing degree but their exertions are interrupted by momentary breakdowns, glitches in the muscular technology. . . . They seem extrahuman, practising levels of control and discipline which seem excessive . . . flourishing their prosthetic limbs like weapons, the dancers resemble futuristic superheroes. . . . As the dancers "unlearn" how to move, the audience "unlearns" how to understand dance.[63]

Distributing Virtual Embodiments

The Brazilian and French collaborators of the Corpos Informáticos Research Group place great emphasis on the theoretical implications of the digitally distributed body, creating ambitious networked tele-performances with invited guests from all over the world. Their two-day performance *Folds* (1999) took place in a gallery space in Porto Allegre, Brazil, where two performers interacted with guests transmitted via the Internet from Philadelphia, Paris, New York, Brasilia, and Campinas (figure 10.9). Their *Hungry@Corpos* (2000)

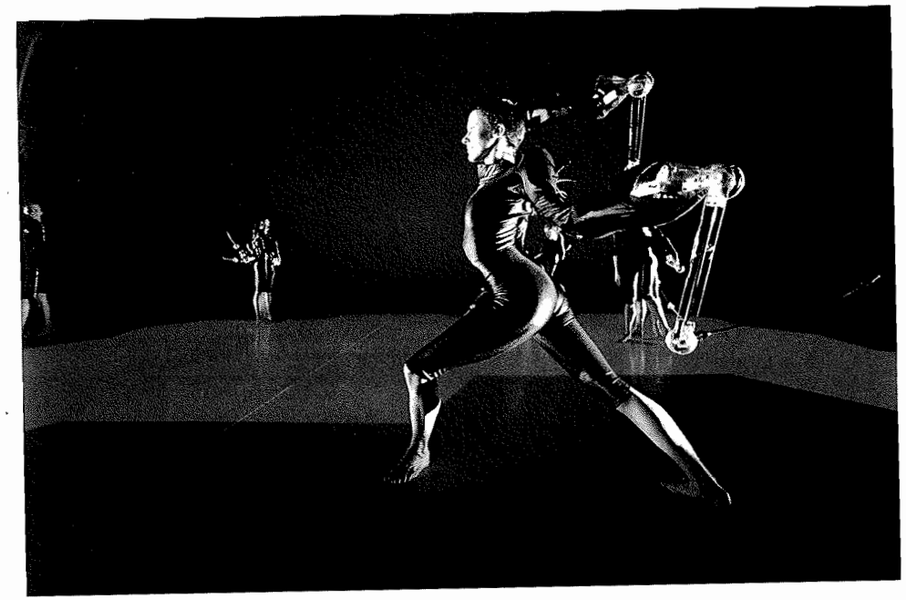

Figure 10.8 "Flourishing their prosthetic limbs like weapons, the dancers resemble futuristic superheroes": Random Dance's dance-theater production *Nemesis* (2002). Photo: Ravi Deepres.

Figure 10.9 Performer Cyntia Carla applies makeup while interacting with multiple Internet guests from around the world in the Corpos Informáticos Research Group's *Folds* (1999).

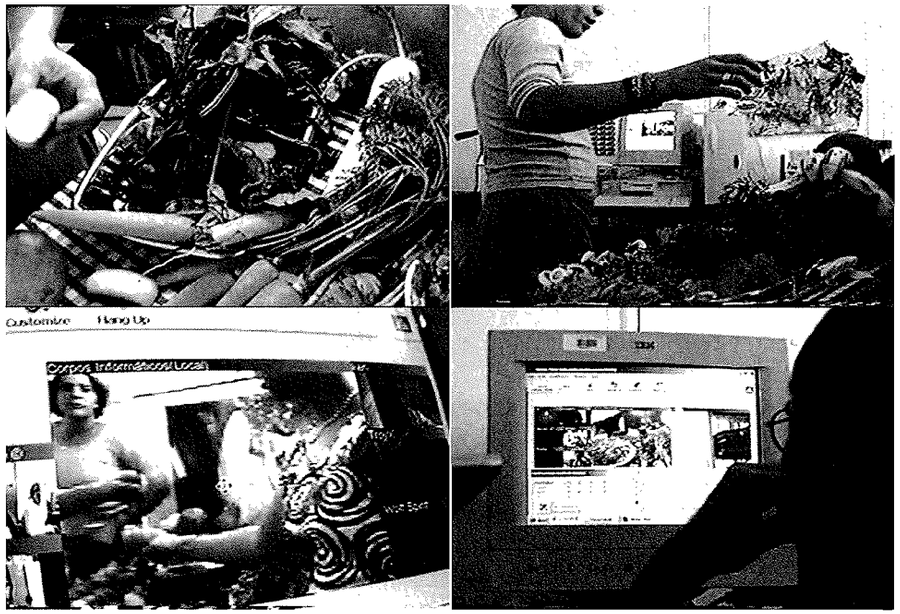

Figure 10.10 Virtually dining together at a distance—images from the Corpos Informáticos Research Group's day long multisite banquet performance *Hungry@Corpos* (2000).

centered on a shared "virtual banquet," with the company eating for an entire day in a space at the University of Brasilia while interacting with other invited, video-conference guests who similarly ate and drank throughout the day (figure 10.10). Their performances *Infoporto* (1999), *Entrasite* (1999), and *Media@terra* (2000) explore the sense in which the telematic body itself becomes a machine, yet nonetheless resists its imprisonment through physical performance. The group draws on the theoretical perspectives of Wittgenstein and Deleuze to examine and demonstrate how the presence of a virtual body in front of us elicits our desire, pleasure, and will for an intimate encounter. They suggest that this now operates to such a high degree that "the quotidian is jealous of the telepresence, jealous of the virtual. . . . The researches on teleperformance demand a higher engagement. . . . The numeric body (telepresence) imposes itself broken, the quotidian seems to draw the other off from virtual space."[64] This potential jealousy and conflict between the real and virtual body is a potent idea that has also been dramatized in a number of live dance performances, including Troika Ranch's *In Place* (1994):

Figure 10.11 The Olympias' interactive installation *Geometries* (2000) explores what director Petra Kuppers describes as her disabled performers' "different experiences of embodiment."

Because the live performer was dancing with a video image of herself, we saw the performance as a kind of contest, one that would in the end emphasize the limitations of both entities: the human performer, bound by time and gravity and her virtual doppelgänger, limited by its inability to enter the corporeal world.[65]

Petra Kuppers, director of the The Olimpias company, explores new ways of working with "different experiences of embodiment" in works with disabled performers such as *Geometries* (2000) (figure 10.11), which highlights the aesthetic beauty and graceful kinetic patterns of wheelchairs, which are gently and erotically caressed; and in *Traces* (1998), a multiple-screen installation using video material shot during community movement and dance workshops with people under mental health care in Wales. Focussing on and reinterpreting ideas of embodied chaos and of loss of control, "huge images of the participants' concentrated faces and bodies . . . provide a counterpoint to many traditional

representations of people in mental health settings. *Traces* documents the beauty, dignity and privacy of all its group members."[66]

Satorimedia's *TouchDown* (2000) is a "duet for hands" rehearsed and performed both in real space and over the Internet, the opening two sections consisting of videos of the individual performers' hands. In the first, their hands "perform" in isolation while we hear their voices talking about the joys of caring for and holding their children; in the second the two hands meet, touching in real space, affectionately teasing one another like small children playing. The final section explores ideas around transcendence and transformation, includes text fragments from Lao Tzu, and is performed over the Internet, where the hands meet again, this time in cyberspace. Like *Telematic Dreaming*, it examines the delicate relationship that exists in the real-time meeting of two "live" telematic bodies, a peculiar dynamic that has also prompted Roy Ascott to pose the question, "Is There Love in the Telematic Embrace?" (1990): the title for his famous essay. Although the touch is not physical in *TouchDown*, the hands move with extraordinary sensitivity and awareness of each other, perhaps even more than they would in physical space. The company believe that increasing technological communication means that "we have more cerebral contact than ever before, but the comfort and sensual pleasures of physical touch may be fading sensations in this advancing world."[67] *TouchDown* offers both "a celebration and a warning" in relation to networked technologies and virtual bodies, contrasting "the physicality of children with the distances which form between adults, both in virtual and real-space relationships."[68]

The laying of hands, in this case the gallery visitor's, onto two digital bodies projected from above onto a table with a white velvet surface, activates their movements in Thecla Schiphorst's *Bodymaps: artifacts of touch* (1996). As the user caresses the life-size image of the bodies, sensors collect 3D XYZ coordinates of the hand movements and prompt delicate changes in the video image so that the two bodies appear to wake from their slumbers and move, turn over, and embrace one another. The bodies appear at times to be immersed in water, and at others in the midst of flame, while an atmospheric audio score of breath and water sounds echoes and enhances the slow and quite beautiful metamorphoses. Schiphorst, who worked closely with Merce Cunningham as one of the designers of *Life Forms* software, has a background in both choreography and computer science and is keenly aware of their relationships and correspondences, and their different understandings and approaches to the representation of the body:

> Computing Science training includes notions of elegance and appreciation of mathematical or algorithmic construction and form, and tends to literally represent the body borrowing from medical mappings or often in Computer Graphics from mass cultural clichés of representation. My interest lies in the recognition that I am dealing with two highly technical systems each with their own technical language and frames of reference, that of the human body on the one hand, and that of computer technology on the other hand.[69]

Conclusion: Theorizing the Virtual Body

Among numerous writers offering theories and critical perspectives on the digital body is Don Ihde, whose book *Bodies in Technology* (2002) begins by defining three types of body: *body one*, our physical and phenomenological being-in-the-world body; *body two*, the culturally and socially constructed body; and a third body existing in "a third dimension . . . traversing both body one and body two . . . the dimension of the technological."[70] This body may utilize technologies from relatively low-tech extensions (Idhe uses Heidegger's analysis of tools such as hammers and nails as an example) to advanced networks and prostheses. He argues, "The ultimate goal of virtual embodiment is to become the perfect simulacrum of full, multisensory bodily action."[71] William Mitchell's "informal trilogy" *Being Digital* (1995), *E-Topia* (1999), and *Me++: The Cyborg Self and the Networked City* (2003) traces the gradual erosion of previous distinctions between digital and physical bodies, virtual realities and "real life." He argues that the merging of our selves into computer networks signals that "the trial separation of bits and atoms" is over: "I am part of the networks, and the networks are part of me."[72]

In the *Women and Performance* journal's special issue on "Sexuality and Cyberspace" in 1996, a number of writers point to a false dichotomy in ascribing oppositions between ideas such as corporeal and virtual bodies, and real life versus online life. For Teresa M. Senft, the female digital body constitutes a new type of body, which she likens to a storytelling ghost. Yet at the same time she reminds us that regardless of a body's corporeality or virtuality: "feminists are in a bind, finding that it is nearly impossible to write of the truth of a feminine body when we are all in disagreement about what a 'body' truly is."[73]

In "Turing, My Love," Matthew Elrich uses a sexual encounter with a partner in cyberspace whom he suspects is actually an Artificial Intelligence program to question wittily and mischievously whether his partner's corporeal reality or AI virtuality has any relevance at all. He begins by asking his remote lover "Was it as good for you as it was for me?" but then rapidly retreats: "I desperately hope you never reveal the truth to me. Not that I care if you're an AI. I can't help wanting to know. But I prefer to live in the body of the text—not its meaning."[74] Sharon Lechner's essay "My Womb, the Mosh Pit" is a much more poignant and serious take on the same issue, as she discusses correspondences between reality and virtuality in relation to the image of an ultrasound scan of a fetus she once aborted. Her conclusion is extremely direct: "Images ARE real, insofar as they pleasure, they pain, they cause action. Women, especially, ignore this crucial lesson in aesthetics at their peril."[75]

In one sense, the virtual body's status as an alternate body is nothing new in the field of theater and performance, as actors and dancers have always plied their art and craft to represent and experience different embodiments (characters) physically. The depiction of unworldly or unnatural bodies also has a lineage stretching from masked representations of gods, spirits, and demons in tribal dances and rituals, to the Furies of Aeschylus and

the magical creatures of Shakespeare's *The Tempest*. Classical ballet training has long exerted unnatural shapes and lines on the dancer's body in the aesthetic pursuit of what Theodores called "the thrill of the unnatural," and much contemporary performance and body art focuses on the abnormal, dysfunctional, diseased, or abject body. Birringer sees the virtual body in digital performance as an extension of these themes and practices: on one hand through an intensification in depictions of the dysfunctional "ideological crisis of the fragmented subject" and "the deconstructed and disappearing actor," and on the other, the creation of new "impossible anatomies," as in Cunningham's work.[76] Both relate to the "ethos of borderness," where the performing body is positioned within a threshold, or liminal terrain or state.[77] The paradigm is enacted in its most vivid and dramatic form when the live performer meets her digital double face-to-face—our next chapter in the fascinating story of the virtual body.

11

The Digital Double

Go back to the body, which is where all the splits in Western Culture occur.
—CAROLEE SCHNEEMANN, *ASK THE GODDESS*, 1991[1]

Theater and Its Digital Double

Marvin Carlson suggests that "a consciousness of doubleness" is intrinsic to performance,[2] a theory that Marshall Soules uses to argue its equal applicability to the human-computer interface.[3] The notion of the double has been a particularly potent concept in performance since the publication of Antonin Artaud's *The Theatre and Its Double* in 1938, and the metaphor has become concrete and actuated in the theory and practice of digital performance. Artaud's notion of theater's double is a primitivist and spiritualized vision of a sacred, transformational, and transcendental theater. Early on in *The Theatre and Its Double*, Artaud discusses the totems of Mexican culture: magically invested rocks, animals, and objects that can excite dormant powers in those who worship or meditate upon them. In a typically abrupt, jagged thought-change (now ubiquitous in computational hypermedia), in the space of a single sentence this totem suddenly becomes an effigy, a double and a shadow: "All true effigies have a double, a shadowed self."[4] For Artaud, the double of theater is its true and magical self, stirring other dark and potent shadows which rail against a fossilized, shadowless culture "as empty as it is saccharined."[5] Discourses on cyberculture now reinscribe this Artaudian dialectic, where a romantic utopianism hailing spiritualized virtual realities is pitted against a dystopian skepticism, which attacks the soulless, alienated, and schizoid nature of digital irreality.

Artaud's incendiary theatrical writings conjure images, previously considered impossible to stage, which have been realized using the capabilities of the computer. His belief that actors should be "like those tortured at the stake, signalling through the flames"[6] has been echoed in works such as 4D Art's dance-theater production *Anima* (2002), La Fura