Performance Animation
Motion capture is an unfortunate term because it implies that the motion is contained once it is captured, like a bee in a net, but this sophisticated and poetic slice of human-computer interaction is about flow, patterns, and shapes of movement, about the way life can be breathed into that which seemed inanimate. In the case of the games industry, a simple computer animation or avatar is the skin waiting for the spark of movement. In motion capture performance, the figure animated by the movement of the dancer in real time is perceived as having life and agency separate from the dancer. According to Brad deGraf and Emre Yilmaz, both pioneers in using motion capture for computer animation, motion capture "combines the qualities of puppetry, live action, stop motion animation, game intelligence and other forms into an entirely new medium," but even they maintain that it is an unfortunate term (1999, 34). Their objection is that motion capture is only one of three components occurring in a thirtieth of a second (the time of one frame of video) for computer animation to be effective in emulating human movement. Motion capture is the first; it is a sampling of movement from any moving source, echoing the more familiar process of using sampled sound in music composition. The second component is the representation of body parts: applying motion to the various body parts of a character in a 3-D scene. This character does not need to be humanoid, it can be part animal or quite abstract. The third component is rendering: the 3-D scene of the figure animated by the movement of the dancer in real time is perceived as having life and agency separate from the human dancer did not fare well in the comparison, for grace was seen to exist in greater quantities in puppets and animals due to the obstructive impact the human power of reflection had on the path of the pure flow of movement (Kleist 1983, 184). He drew this conclusion on the basis of two conceptual duets: a comparison of the movement of a dancer with that of a string puppet, followed by an anecdote of a fencing duel between a man and a bear. It is less the suggestion that a dancer is a mere puppet that is of interest than the way observations on the location of the soul are arrived at through the intercorporeal relations, albeit hypothetical, between entities. Predating Charles Darwin’s major writing by approximately fifty years, Kleist exhibits little prejudice based on ontological state of being: a digital data based on live performance is more inclined toward a continuity rather than a dichotomy between human and animal, because this continuity can be extrapolated across a broader spectrum encompassinghuman, animal, nonhuman, digital human. Crist expands her argument by indicating that Darwin’s premise that “living is experientially meaningful for animals and that their actions are authored” reflects his “perception of subjectivity in the animal world” (ibid.). With this move she acknowledges a form of implicit phenomenology on the part of Darwin: his knowledge was based on his perceptions, and he read his information through his own affective, physiological, and intellectual apparatus, which is to say, through his corporeal engagement with the world. While Crist never refers specifically to phenomenology in conjunction with her consideration of Darwin’s anthropomorphism, Emanuela Spada asserts that that problems with anthropomorphizing are synchronous with suspicions over phenomenology as a methodology (1997, 39). Anthropomorphism acknowledges similarities and differences between human and animal behaviors, and like phenomenology it does so generally through metaphor and subjective description. But there is more to it than simply poetry. The attribution of human characteristics to nonhuman forms, be they animals or Artificial-Life creatures, is a negotiation of value among humans. The identification of human traits and behaviors in something nonhuman both emerges from and in turn shapes social perceptions and interpretations, limiting actions that are conceivable, possible, undesirable, and fundamental. In this way, acts of anthropomorphism contribute to shared ethical codes. They are negotiations of values that change not only how we view others, but also how we as humans...
perceive ourselves (Caporael and Heyes 1997, 71).

The ethical challenge is that by attributing purpose, will, and causality similar to our own onto an animal, a plant, or a semi-intelligent digital animation (one that may respond to a mover but also follow its own algorithms), we may not allow it the spontaneity of being unlike us. We may unwittingly not allow it to be divergent, to be other. It is for this reason that Donna Haraway cautions against anthropomorphism and calls it a serious mistake, because the world contains the construction of an ethics based on alterity: to what extent is the other a person like us, and to what extent is she/he/it radically other or different? Freud captures this question in terms of comfort versus discomfort when he indicates that we can breathe freely or feel at home "if the elements have passions that rage as they do in our own soul, if death itself is not something spontaneous but the violent act of an evil Will, if everywhere in nature there are Beings around us of a kind that we know in our own society" (1964, 22). Breathing easily is not always what happens when humans encounter humans, let alone when humans encounter nonhumans; still, Freud makes a good point. Anthropomorphism may make us feel more comfortable, but the context is often one of unease. Haraway’s assertion that “it is people who are ethical, not these nonhuman entities” acts to remind those who choose to anthropomorphize that the ethical burden, the unease, remains with them through an imperative of being responsive and responsible to all sorts of complexities, and I would say beings, that arise from what she calls “technoculture” (2000, 133–134).

Animism can be seen to take us further from home. It is more diffuse and distributed than anthropomorphism: if we define it as the attribution of life, consciousness, or spirit to the nonliving, it takes us beyond the familiar contours of a human form. Instead of seeing a face in the clouds or viewing the trees as having arms, the clouds simply look at us without corresponding to human physiognomy and the trees seem to reach and wave without any reference to bodily extension.6 One of the strands of Luce Irigaray’s critique of Merleau-Ponty is that he posits a sort of animism: “This reversibility is Merleau-Ponty’s hypothesis. As if the seen enveloped me in its vision? Isn’t this a sort of animism in which the visible becomes another living being?” (1993, 172). Reflecting on Merleau-Ponty reveals one of the strengths of animism: unlike anthropomorphism it is less likely to be a sneaky cover for anthropocentrism, the positing of the human being at the center of meaning and value. He contends, “When we speak of the flesh of the visible, we do not mean to do anthropology, to describe a world covered over with all our own projections leaving aside what it can be under the human mask” (Merleau-Ponty 1968, 136). The indication that there might be something radically other, potentially deeply disturbing to our human sensibilities is what Merleau-Ponty aims to preserve. Anthropomorphism in its more generous state attributes human intention to the nonhuman and provides the opening for this other to thwart us, for it to escape our control; animism exists entirely within this opening, even further from our implicit control. Evoking Kleist’s metaphor, the being of animism exists at the end of even longer strings than the anthropomorphist puppet.

The animist move is subtle, and can be interpreted many ways, but for the purposes of this argument it can be seen as a reverse anthropomorphism: if everything can be seen to be alive and possessing its own being, what is to prevent the worlds of rocks, creatures, spirits, and disembodied forces from projecting their nonanthropomorphic forms and affects onto us, and in so doing, dissolving our human form and human feelings beyond recognition? This is a radical extension of the Merleau-Pontian chiasm according to which I am a subject but I am also a thing among things. Instead of mapping the body outward onto everything it inserts it into the world of things, or does both according to a double-belongingness: “its [the body’s] double belongingness to the order of the object and to the order of the subject reveals to us quite unexpected relations between the two orders” (Merleau-Ponty 1968, 137).

If performance animation becomes, in some sense, performance animism, one would hope that we are not just mapping a narrow notion of humanity onto our digital creations. Strategic and creative animism can help to avoid the dual grasps of anthropocentrism and technocentrism pervading our Western industrial societies.8 These are a false duality, because they are not mutually exclusive; paradoxically they coexist and fuel each other.
Empathy, Seduction, Control

—not to see in the outside, as the others see it, the contour of a body one inhabits, but especially to be seen by the outside, to exist within it, to emigrate into it, to be seduced, captivated, alienated by the phantom.

—Merleau-Ponty,
The Visible and the Invisible
Two studio experiments with a motion capture system for performance animation were enough to kindle in me an enduring fascination; although these were brief forays into a domain of technologies not generally used for live performance, they generated ethical, corporeal, and ontological questions. These performances revealed the alterity, or otherwise, at the root of my dealings with digital data. At a small Amsterdam motion capture studio on a circular platform I was tethered into a professional motion capture system, which tracked and recorded markers on the joints of the body in 3-D space so that movement data could be used as the dynamic infrastructure for visuals, such as avatars.9 The electromagnetic system used markers on cables that snaked along the limbs and gathered at the small of the back into a small tail that extended four meters to the computer. The data captured from not more than ten points on my body (including feet, hips, sternum, wrists, head) were used to animate a simple geometric figure in real time; it moved as I danced. Each capture point was given a 3-D cube, forming a visual body I affectionately called the “pile of blocks.” The pile of blocks moved as I moved, but also exhibited its own quirks, simple ones, but enough for me to have the uncanny sense that it had its own mind, heart, and will. It appeared to be a set of colors and surfaces inhabited by vision, touch, and moments of agency. A tunic-style garment afforded the option to place the foot markers not on my feet but on the edges of the fabric. The fabric swung and twisted as no human legs could but was given life and momentum by the movement of my legs. The pile of blocks was animated partially by markers on limbs and partially by markers on fabric: the figure became whole, stretched across human and textile, entirely convincing as an entity. It was a creature of connective tissue, a new sort of flesh. It moved, it leapt, it spun, showing its 3-D quality, as if braging that it had volume, it had a back and sides, a top and a bottom. It existed across more dimensions than a flat image, as if “the hidden face of the cube radiates forth somewhere as well as does the face I have under my eyes, and coexists with it” (Merleau-Ponty 1968, 140).

I entered into a duet with the pile of cubes. My movement gave it life, but it was more than my movement. The pile of cubes had a spark of autonomy: it was cheery, it experienced pain, indecision, and pathos. I found myself reacting to it as if it were a life form, as if it could see me, a sensation uncannily captured by Merleau-Ponty’s words chosen to describe one’s coexistence with things in the world: “I who see the cube also belong to the visible, I am visible from elsewhere… I and the cube are together caught up in one same ‘element’”; and this “cohesion” of the seer and the seen, the performer and the digital partner, “prevails over every momentary discordance” (ibid.). When I folded my body into a ball and moved very little, the pile became a confused jumble of blocks. When I stepped too close to the sphere that drove the mocap system by emitting the electromagnetic field it froze momentarily then seemed to rush to catch up with me, stumbling over itself, exuding vulnerability and joy. Researchers into artificial life situate spontaneity and autonomy, combined with the capacity for self-reproduction, as the essential components of A-Life systems (Boden 1996, 3). It was no accident that the moments with the most dramatic tension between performers and captured data were created when the computers malfunctioned slightly, when they lagged, jumped, froze, made the image disappear and reappear, or even when, for inexplicable reasons, they caused the figure to distort or dismember itself. These glitches are consonant with spontaneity and autonomy, with affect and responsibility, with expression and pain. I was caught unaware, for I did not anticipate this strange empathy from the experience of performing in a mocap system. I was unsure what had just begun, like the early stages of a new relationship. I wondered if there was something there, where it might go, when I might meet it again.

The empathic phase with the pile of blocks gave way to the seductive phase with a stick figure. Again a brief improvisation in a system yielded extraordinary kinesthetic and affective results, this time with unexpected political and ethical overtones. Once more I was wired into an electromagnetic motion capture system, again tethered to the computers, but this time I had more space to move and a larger surface to receive the projected imagery.10 Dancing with visual movement data projected in real time on a surface adjacent to the performance space is crucial so that the visualized data becomes a partner in the space, next to me, life-sized or more, sharing the movement dynamic. Except this time I had more space to move and a larger surface to receive the projected imagery. A second figure was animated by my real-time movement in the space. It did what I did, without a lag, a reasonably faithful representation of my movement, except for its lack of knees, elbows, neck, and face. It was like a comic-book version of myself. The third figure was a brainstorm by the digital artists Hoch and Woolford. They decided to create a simple morph of the two other figures and place it in the middle of the other two; algorithmically very simple, it was the mean of the movement position and dynamic of the prerecorded figure and the real-time figure. If the arm on the pre-recorded looping figure was fully extended and the arm of the real-time figure touched the floor, the arm on the middle figure would be roughly at waist height. Hoch introduced a further algorithm that directed this middle figure to approach, in digital space, whichever of the other two figures was moving the fastest. If the pre-recorded figure reached a rapid section of its sequence while the real-time figure was still, the middle figure would perform the mean of the movement, but closer in space to the prerecorded figure.

The middle figure seemed to be alive. My perceptions of how it moved in space, what pattern its body exhibited, the speed or slowness it adopted, and most of all whether it decided to move closer to the prerecorded figure or to my real-time figure—all this gave it life. I entered into a duet that was more than creating shapes in space; it was imbued with power, agency, and desire. It was thick with affect. On a visceral level, I wanted the middle figure close to me. I wanted it to “choose” to approximate the real-time figure that I was directly controlling rather than the prerecorded figure that seemed to be doing its own thing. When I slowed my movement and the figure slid away from me toward the other figure I felt loss, and a desire to get it back. This made me want to increase the velocity and size of my movement, like a toddler wanting the attention of her mother. This reaction in me was the primordial phenomenological experience of the pre-reflective. I did not consciously and rationally decide to lure the middle figure back to me. I just wanted it back, driven by a sort of “internal carnal echo” of the corporeality of the figure, which was, strictly speaking, just a thing (Diprose 2002, 103). It became other. It seemed to exhibit its own whims and made its own decisions. In the spirit of Merleau-Ponty’s reversible relation by which I see things in the world but am seen by things in the world, it was the object that watched me, that touched me, that moved me. It thwarted me, but occasionally let me bask in its attention. I desired it but could not possess it. There was an incessant escaping and return. It was impossible to see it without it seeming to me, to direct its movement without it seeming to direct mine. It was always moving, always interrupting me. My position was one of disequilibrium and of transformation. I was alarmed by the strength of my desire to control it, delighted by the experience of swimming in movement with another. I realized that I had entered the domain of ethics.

The relation of reversibility that Merleau-Ponty’s sees to be the fundamental dynamic according to which I engage with the world became clear once again in these performative experiences with motion capture.11 Things are an annex or a prolongation of myself, as he writes, but this does not mean that the thing is known, predictable, or feels identical to me. Hence the “confusion,” the being “caught up with things,” which are more than just inanimate objects (Merleau-Ponty 1964a, 163). There was never a full correspondence between myself and the pile of blocks or the stick figures. Despite their being direct extensions of my movement, there was no coinciding of the seer with the visible, for the visible figures never entirely converged with me. We borrowed from each other; to use Merleau-Ponty’s term, we “encroached” upon each other, but we also gave to each other (1968, 261). From my first improvisation with mocap data I experienced an “open circuit” between my body and the figure. To use the Merleau-Pontian inspired vocabulary of Rosalyn Diprose, the performativity I shared with the digital data was enacted in a “mirror-space of ambiguity, generosity, and intertwining, [where] the spark of sensibility, of perception, of affectivity is lit” (2002, 102).12

These were intercorporeal exchanges across beings of differing materiality. Any hierarchy between human and nonhuman was porous and plastic; I emerged from the studio with new ideas regarding my own body, the materiality of digital data, and a shifted ontology by which I mean a shifted sense of what constitutes a being. It did not matter that the figure did not have life or full agency—I responded to it and perceived it to be that way. I never needed to judge it on the basis of what it was in itself; true to an existential phenomenological approach, I could not access the thing-in-itself but I could access the thing in its reversible relation with me, both of us dynamic, moving things in the world. My choice to view this as an ethical relationship was partly motivated by witnessing my own reactions through a hyper-reflective loop and it was partly just that: a choice, a political and ethical decision on how to behave.
Fear of Capture
Ghostcatching had a distinct visual aesthetic within the field of animation. It was a video installation of 3-D drawings of a transparent dancing figure that was, unmistakably, Bill T. Jones. Bill’s body was transformed into a pattern of blue, red, or green scribbled lines, with the texture of charcoal on paper. He swirled and swooped across the “stage” which appeared as a reflective surface that supported the moving calligraphy as if it were smooth ice. The arcs of Bill’s arms and legs were emphasized with lines that materialized like the smoke trail of an airplane. One of the most powerful features of the virtual dance (lasting eight and one-half minutes) was the way figures appeared and disappeared. These figures—arms and legs were emphasized with lines that materialized like the smoke trail of an airplane. One of the most powerful features of the virtual dance (lasting eight and one-half minutes) was the way figures appeared and disappeared. These figures were all Bill: sometimes he danced with each other, sometimes one left the space by disintegrating line by line as another arrived. For me, viewing the installation, the arrivals and departures were materializations and immaterializations.

Commenting on the process, Jones said, “After my motion is captured, the question remains: what entity will now inhabit this motion? Is it a ghost? (It is certainly not me.) Has it taken a piece of me? Or did I spawn it—a life in another world?” (Bunn 1999, 33). His terms evoked the sci-fi gloss of films like Aliens, Invasion of the Bodysnatchers, or Matrix—he talks of “spawning” and being inhabited by other entities. But for Jones, Bill was present. The richness of the colors combined with the powerful sound score of his speaking, breathing, singing, footsteps, and even shouting made the warmth and idiosyncrasy of Bill naked with the glowing sensors attached to his body, including a sensor attached to his penis. This seemed to be more a point about how digital technologies are not outside the politics of sexuality than it was about obtaining a faithful portrayal of the movement of this part of his anatomy.

The quality of the lateral movement in the animation was extraordinary. The patterns of Bill’s arms, legs, and traversals through space were astonishingly clear. The ghostly drawings seemed to shudder at times as they performed the athletic and ever-changing movements. For some reason the up-down movement was less convincing than the sideways movement. Landings were convincingly weighted but the moments of suspension in the air at the top of jumps seemed strangely stuck. This reflects again how the art of capturing motion might lie in choosing the location of the sensors: after all, what part of our body really conveys the elevation of a jump? Can it be isolated and captured? In contrast with the movement of his arms and legs, the flexibility of his back was lost: Bill sometimes seemed to be dancing with a broomstick for a spine. Moments when his spine flexed and his head turned to occupy a different plane from his torso were remarkable: Ghostcatching became breathtaking.

Highly individual movement qualities and even a personality seemed to be directly communicated through the visuals and used as a point of departure. This is why I was taken aback by the terms used to describe the project, both by its creators and by certain critics. Despite the sophistication of the project, its rhetoric verged on the techno-apocalyptic. The victim was the moving image; the victim was the body. Text written on the walls of the Cooper Union gallery as part of the installation set the tone: “So, we may ask: What is human movement in the absence of the body?...What kind of dance do we conceive in this ghostly place, where enclosures, entanglements, and reflections vie with the will to break free?” Motion capture was referred to as a technology that “extracts” movement from the performer’s body. Bill seemed to have an uneasy rapport with the systems used to capture his movement, fearing that somehow his body, or even his “spirit,” might be lost. He claimed to relate to the fear expressed by Native Americans who “deny having their likeness captured for fear that their spirit might also be taken.”

It is a paradox that the technology that was responsible for the amazing capture and extension of Bill’s movement was accused of disembodiment or, worse, the theft of spirit. Perhaps this suspicion greets the advent of any “new” technology. Certainly photography and X-rays were regarded as hijackers of human essence before they became integrated into artistic, medical, critical, and commercial cultures. The critic for New York’s Village Voice reinforced the divide between image and body when he wrote that Bill was “disembodied.” For me, Bill was present. He spoke of how dancers have a “strange piety” that values the ephemeral moment of performance over the movement of this part of his anatomy.

Motion Capture: Performing Alterity

When our data seems to perceive and act independently and at a distance from us, the composition and sanctity of the self is invariably called into question. For this reason, motion capture is a technology that makes some people fear for their physical essence and causes others to burn with the possibilities for extending what it means to exist as embodied beings. My reaction seemed to contrast with one expressed by another dancer involved in creative collaboration with digital artists using motion capture. Acting as a phenomenological counterpart to my phenomenological recollections, and to reveal a different set of cultural attitudes to motion capture, it is useful to consider the Ghostcatching installation and the attitudes to motion capture exhibited by dancer and choreographer Bill T. Jones.

Digital artists Paul Kaiser and Shelley Eshkar of Riverbed collaborated on several celebrated projects in the 1990s that integrated motion capture, animation, and dance. The collaboration with American dancer/choreographer Bill T. Jones was called Ghostcatching (1999) and took the form of an installation with video projections of 3-D animations but without the presence of the live dancer.1 Riverbed used an optical motion-capture system for this project that, distinct from the electromagnetic systems described above, operates by using infrared cameras to track, in three-dimensional space, points on a moving figure. These points are most often reflective spheres (like small ping-pong balls) attached to the joints on the mover. They don’t have to be attached to the joints, but the articulation and range of motion offered by joints make them the most direct and clear way to model human motion.
Intercorporeality

[I]t is the impact of the other’s difference that strikes me, moves me, inspires my carnality, and sets up a resonance in my own corporeal style.

—Rosalyn Diprose, Corporeal Generosity
A phenomenological description of what happens in a motion-capture performance from the perspective of the performer can read like a form of animist science fiction. What might seem like a simple process of tracking the limbs of a performer and using this information to drive, in real-time, a 3-D computer animation offers up a tangled array of questions, prevarications, and ambiguities trespassing on the domains of ethics, corporeality, and ontology. Ethical questions are shaped around the relation between the self that is performing and the digital other that is an extension of the self but also profoundly different; corporeal questions ask where my body ends and the synthetic digital body begins; and fundamentally philosophical questions concerning the ontological status of the exchange cannot be avoided: what sort of beings are these digital creatures transfigured and conjured out of human movement? And what is my relation to them?

This chapter navigates a phenomenological journey to understand the experience of motion capture and to reveal how the body in performance can act as a catalyst for transforming our understanding of human-computer interaction. I suggest, somewhat counterintuitively, that a human ethics can be developed from human-digital interactions. Ethics is immanent, ethics is embodied, and motion capture performance reveals both dimensions. If thought can be seen as a dance, two moves need to be executed in this chapter: first, to reframe our viewpoints, and relates them both. The first view to be reframed is the idea that the other is outside of me, or that I am a self-contained subject facing the world out there. This is the fundamental subject-object or self-other divide. The second view to be reframed is the suggestion that technologies destroy “the vital source of our humanity,” and undermine the mental, moral, and social domains. This view expressed by Neil Postman is not unlike the one expressed by Paul Virilio and considered in chapter 2. Yet I am not willing to go so far as to suggest that the self is entirely dissolved; nor am I offering the simplistic technomorphic rebuttal to a techno-apocalyptic view. Through technologies our relations with ourselves shift (our movement, our perceptions, our thought processes) and inevitably our relations with others shift too, creating the conditions for an ethics that is not a prescriptive set of rules, but a value system based on a sensibility toward the other and the wider world. These reflections are based on performing with motion capture and motion-tracking technologies within the context of several projects spanning a time frame of over ten years. As ever, ideas from Merleau-Ponty are central to the phenomenological accounts of performance in these systems, but attempts to deepen the experiential encounter with otherness foster a transcendental ethicalism of alterity and his philosophical ethics of alterity and his phenomenological ethics that are central to the inquiry. The formation offers up a tangled array of questions, prevarications, and ambiguities trespassing on the domains of ethics, corporeality, and ontology. Ethical reflections provided by Merleau-Ponty, Levinas, and Deleuze, but those who feel the need for a moral code to maintain our social order, protecting it against transgression and disintegration, might find them too open-ended.

The embodied ethical flavor of the phenomenologies in this chapter are further inspired by the feminist philosophers such as Luce Irigaray and Rosalyn Diprose. Irigaray insists that the complex and difficult times in which we live call for a revolution in ethics; that philosophical ethics are vital. But ethics is not often considered in the context of digital art or performance, almost as if it is assumed that once technologies are devoted to art, rather than to the expansion of the military-industrial complex, then they are implicitly ethical, almost innocent, in comparison, or devoted exclusively to a critical role. Paul Virilio (2003) and Jean Baudrillard (2000) take a social and political approach to critiquing the increasing technologization of human life; Donna Haraway (1997) and Katherine Hayles (1999) consider the scope for transforming gender, cross-species, and human relations by shifting our approaches to politics and technologies; philosophers of technology such as Bruno Latour (1993) and Don Ihde (2002) restructure our relations with technological objects. Applied ethical approaches inspired by the Anglo-American philosophical tradition and the social sciences used to address the social impact and use of games, search engines and databases, reproductive technologies, and global development have high profiles, but ethical approaches from the continental philosophical traditions toward the more subtle ontological and existential dimensions of humans’ engaging with and through technologies are not as easy to find in English-speaking countries. Rosi Braidotti (1994a, 2006) offers a “nomadic ethics” emerging from the belief that moral philosophy is a hindrance to dealing with the ethical complexities we now face. Her Deleuzian approach reveals a profound desire to account for progressive social transformation, or a need for “new schemes of thought and figurations that enable us to account in empowering and positive terms for the changes and transformations currently on the way.” Our multitechnological, ethically enhanced societies are “neither simple nor linear events, but rather multi-layered and internally contradictory phenomena” (Braidotti 2006, 31). An ethical approach seems to be a viable alternative to a moral approach in the era of increasing fundamentalism in all cultures; ethics can be more human-centric, less doctrinaire, more ambiguous, more relational. This appeals to some but not to others. Those who want to consider ethical questions but not to be saddled with rules, prescriptions, or laws might be drawn to the approaches provided by Merleau-Ponty, Levinas, and Deleuze, but those who feel the need for a moral code to maintain our social order, protecting it against transgression and disintegration, might find them too open-ended.

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Two studio experiments with a motion capture system for performance animation were enough to kindle in me an enduring fascination; although these were brief forays into a domain of technologies not generally used for live performance, they generated ethical, corporeal, and ontological questions. These performances revealed the alterity, or otherness, at the root of my dealings with digital data. At a small Amsterdam motion capture studio on a circular platform I was tethered into a professional motion capture system, which tracked and recorded markers on the joints of the body in 3-D space so that movement data could be used as the dynamic infrastructure for visuals, such as avatars. The electromagnetic system used markers on cables that snaked along the limbs and gathered at the small of the back to transmit data to the computer. The data captured from more than ten points on my body (including feet, hips, sternum, wrists, head) were used to animate a simple geometric figure in real time; it moved as I danced. Each capture point was given a 3-D cube, forming a visual body I affectionately called the "pile of blocks." The pile of blocks moved as I moved, but also exhibited its own quirks, simple ones, but enough for me to have the uncanny sense that it had its own mind, heart, and will. It appeared to be a set of colors and surfaces inhabited by vision, touch, and moments of agency. A tunic-style garment afforded the option to place the foot markers not on my feet but on the edges of my legs. The pile of blocks was animated partially by markers on limbs and partially by markers on fabric: the figure became whole, stretched across human and textile, entirely convincing as an entity. It was a creature of connective tissue, a new sort of flesh. It moved, it leapt, it spun, showing its 3-D quality, as if bragging that it had volume, it had a back and sides, a top and a bottom. It existed across more dimensions than a flat image, as if "the hidden face of the cube radiates forth somewhere as well as does the face I have under my eyes, and coexists with it" (Merleau-Ponty 1968, 140). I entered into a duet with the pile of cubes. My movement gave it life, but it was more than my movement. The pile of cubes had a spark of autonomy; it was cheeky, it experienced pain, indecision, and pathos. I found myself reacting to it as if it were a life form, as if it could see me, a sensation uncannily captured by Merleau-Ponty's words chosen to describe one's existence with things in the world: "I who see the cube also belong to the visible, I am visible from elsewhere...and the cube are together caught up in one same 'element'"; and this "cohesion" of the seer and the seen, the performer and the digital partner, "prevails over every momentary discordance" (ibid.). When I folded my body into a ball and moved very little, the pile became a confused jumble of blocks. When I stepped too close to the sphere that the performer and the digital partner, "prevails over every momentary discordance" (ibid.). When I folded my body into a ball and moved very little, the pile became a confused jumble of blocks. When I stepped too close to the sphere that the performer and the digital partner, "prevails over every momentary discordance" (ibid.). When I folded my body into a ball and moved very little, the pile became a confused jumble of blocks. When I stepped too close to the sphere that the performer and the digital partner, "prevails over every momentary discordance" (ibid.). When I folded my body into a ball and moved very little, the pile became a confused jumble of blocks. When I stepped too close to the sphere that
it, delighted by the experience of swimming in movement with another. I realized that I had entered the domain of ethics. The relation of reversibility that Merleau-Ponty’s sees to be the fundamental dynamic according to which I engage with the world became clear once again in these performative experiences with motion capture.11 Things are an annex or a prolongation of myself, as he writes, but this does not mean that the thing is known, predictable, or feels identical to me. Hence the “confusion,” the being “caught up with things,” which are more than just inanimate objects (Merleau-Ponty 1964a, 163). There was never a full correspondence between myself and the pile of blocks or the stick figures. Despite their being direct extensions of my movement, there was no coinciding of the seer with the visible, for the visible figures never entirely converged with me. We borrowed from each other; to use Merleau-Ponty’s term, we “encroached” upon each other, but we also gave to each other (1968, 261). From my first improvisation with mocap data I experienced an “open circuit” between my body and the figure. To use the Merleau-Pontian inspired vocabulary of Rosalyn Diprose, the performativity I shared with the digital data was enacted in a “mirror-space of ambiguity, generosity, and intertwining, [where] the spark of sensibility, of perception, of affectivity is lit” (2002, 102).

These were intercorporeal exchanges across beings of differing materiality. Any hierarchy between human and nonhuman was porous and plastic; I emerged from the studio with new ideas regarding my own body, the materiality of digital data, and a shifted ontology by which I mean a shifted sense of what constitutes a being. It did not matter that the figure did not have life or full agency—I responded to it and perceived it to be that way. I never needed to judge it on the basis of what it was in itself; true to an existential phenomenological approach, I could not access the thing-in-itself but I could access the thing in its reversible relation with me, both of us dynamic, moving things in the world. My choice to view this as an ethical relationship was partly motivated by witnessing my own reactions through a hyper-reflective loop and it was partly just that: a choice, a political and ethical decision on how to behave.
The journey in this chapter is to explore approaches to otherness that can adequately explain the uncanny experience of performing with motion-capture data, and to shape this into a corporeal ethics. The intention is not to dismiss the field of practical philosophical ethics around reproductive technologies, copyright, representation, and privacy of personal data. The intention is to generate an ethics that accounts for the confusion, the ambiguity, and the transgression of corporeal exchanges with digital others, and to do so by turning to figures in the Continental philosophical tradition, recognising that no one philosopher exclusively can deliver what we need. This is not a return to a canon or a construction of a new canon; it is a phenomenological encounter between performance and philosophy beginning with a deeper understanding of Merleau-Ponty's intercorporeality, challenging this with Levinas's account of alterity, and then enhancing the scope for affect and motion by looking to Deleuze's interpretation of Spinoza.

Perception, agency, and the construction of notions of selfhood and otherness emerge as my body opens to bodies of others, opens to digital bodies, opens and embraces the possibility for aspects of my own body to be digitized. Merleau-Ponty's ideas are particularly useful to describe a relation of proximity and difference with a kinesthetic visual entity because we follow Merleau-Ponty, perception is more than just the neurophysiological mechanisms by which I apprehend the world. Perception is constitutive of who and what I am, perception is ontological: “It is that the thickness of flesh between the seer and the thing is constitutive for the thing of its visibility as for the seer of his corporeity” (ibid., 130).

This reading of Merleau-Ponty yields an ontology of corporeal intersubjectivity, where ontology is understood in phenomenological terms as not just what beings are, but as ways or modes of being; ontology considers how we come to be in a dynamic sense (Moran 2000, 358). Diprose’s articulation of ontology as “the realm of the social constitution of identity and difference” is based on Merleau-Ponty’s late work and is an important reminder that ontologies are social and are formulated merely by holding a magnifying glass up to one being as representative of all (2002, 14). Once our proximity with digital technologies is taken to a finegrained behavioral and existential level, as it is in our current society, a deep questioning into the constitution and unfolding of bodies requires a broadly construed ontology: one that does not falter in the face of the digital data emanating from my and others’ movement, physiology, or thought; one that can account for gaps, distances, and discordance. This also involves reconstructing the notion of a being; instead of a self-contained entity or agent, beingness is a changeable, dynamic construct, chiasmically connected to other beings and to the flesh of the world. My very being contains the traces of my bodily encounters with others. The ways I see, touch, and move with others are in my very fabric, memories and histories integrated and transformed. This is predicated upon his later philosophy is devoted to charting the chiasmic relation we have with the world—the tactile and visual world.

I am implicated in an ebbing and flowing relation with the world by means of the porous membrane between interiority and exteriority that is my perceiving body. I am seen like objects in the world are seen, I see the objects in the world at the same time that I see my body and other bodies. As Merleau-Ponty says, “My body is at once phenomenal body and objective body” (1968, 136). A direct implication of this reversible relation is the dilution and extension of the designation “my,” the grammatical constructions of “my” and “I” seem to imply ownership of a clearly delimited body, but the dynamic of the chiasmus spreads and bends this so that the proper self is amorphous even if language is structurally constrained. This dimension of lived experience is brought into sharp relief when the body of the performer is split, transformed, multiplied by motion capture systems and visualization techniques. When I encounter my digital self I discover that it is not simply me. The relation between myself and the figure I animate is as chiasmic as the seeing-seen, the touching-touched. It is me, because it is animated by my movement, but it is also other because it is separated from me by the thickness of the space between us and because it moves around and looks back at me—I am the one wearing the motion capture markers, the animation is projected onto a surface next to me, we are the same but we are different in space and in dynamic form. The figure with which I perform is always at the same time both my own body and another body; it manages to be this because of the way I perceive the world dynamically while I am enmeshed within the world. If we follow Merleau-Ponty, perception is more than just the neurophysiological mechanisms by which I apprehend the world. Perception is constitutive of who and what I am, perception is ontological: “It is that the thickness of flesh between the seer and the thing is constitutive for the thing of its visibility as for the seer of his corporeity” (ibid., 130).

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Contributing to the understanding of the relation between self and others in a Merleau-Pontian framework is the psychic phenomenon of syncretic sociability. Each of us retains a sense of the first “me” from early stages in our development of consciousness as children and this self is at first not separated from others; it is “virtual or latent...unaware of itself in its absolute difference” (Merleau-Ponty 1964b, 119). It follows that this virtual self is not constituted in strict opposition to others and to the world. This is a self with soft borders, a porous self that “is unaware of itself and lives as easily in others as it does in itself.” This is a sort of syncretism that refers to an “indistinction between me and the other, a confusion at the core of a situation that is common to us both” (ibid., 120).

Following this stage of the development of the child’s psyche, a corporeal schema is set
I was experiencing part of the ambiguity of intercorporeality, the discomfort, in that I was caught within the being of the other, which was carving and swallowing me up, objectifying me. I became aware of being the seen to the seeing, the surveilling eyes of the camera and the software. Making myself experience the seeing-seen relationship integral to Merleau-Ponty’s understanding of how we live in the world required a volitional act of regaining the position of seer, and from that vantage point I could complete the second half of the reversible relation by seeing my own body, and by seeing and somehow patapating the software as it tracked my body. To use a more obvious sociopolitical term, it was a “decolonizing act.”

Controlling the grid in Contours was a process of developing new images, bringing new life and movement to objects that have endured. It was as if the grid was breathing in and out with the dancer, finding a life and another life, another reality, from the human to the nonhuman and back. The system allowed me to bring together the worlds of the human and nonhuman, not in a two-way duality but through a process of blending and mixing. The grid was a medium through which the dancer’s body was transformed, becoming a living, breathing entity that connected with the software in a fluid and responsive way.

The performance was a form of syncretic sociability by which the dancer was transposed into digital space. It is not that I lost all distinction between myself and the images while dancing, but that I did not need to exist within conscious distinctions of that sort: I was able to flow in a pre-reflective state where syncretism existed across others in space. It is not that I lost all distinction between myself and the images while dancing, but that I did not need to be aware of the difference between myself and the images.

Evaluating the ability of Merleau-Ponty’s thought to accommodate difference can be approached by reflecting upon a pervasive, intimate and explosive locus of difference: sexual difference. Luce Irigaray is one of the most influential philosophers of sexual difference for good reason: her writing combines philosophical rigor with poetic beauty as she challenges the ability of language to convey what is important to life: ideas, eros, embodiment, poetry, love, the elements of selfhood and attraction. Her thought privileges the subject and the visible over the other and touch. The question she raises regarding reversibility and intercorporeality is that of the other, particularly of “an other whose body’s ontological status would differ from my own”—in other words, the other of sexual difference (Irigaray 1993, 157). Her objection to the philosophical physics of the two hands is that neither hand nor the world is reversible, they are not “gloves.” They have their roots and their atmospheres, and “to reverse them thus, the one in the other, would amount to destroying them in their own lives” (ibid., 160). Here the ethical, social, and political enters her critique with the implicit recognition that difference is contextual and lives are not identical. No singular person shares another’s history, sexuality, and race. No one or thing is reversible. In short, Irigaray is concerned that reversibility is the same as substitutability, causing the subject to mapped outward like a rippling solipsism, and that vision dominates touch. “Flesh, the flesh of each one, is not substitutable for the other” (ibid., 167).

There is no doubt Merleau-Ponty strives for a beauty in our relations with the world and with others. The sensual poetry of his writing is his strength and his weakness: it is possible to argue that he errs on the side of beauty. This is most evident in his reflections upon art and otherness. His most poignant descriptions of the other skip over the basic relation with the stranger on the street and evoke the magic and sensuality of the other who is my lover: “the body is lost outside of the world and its goals, fascinated by the unique occupation of floating in Being with another life, of making itself the outside of its inside and the inside of its outside. And henceforth movement, touch, vision, applying themselves to the other and to themselves, return toward their source and, in the moment and silent labor of desire, begin the paradox of expression” (Merleau-Ponty 1968, 144). Despite his animist streak (when the landscape looks at the painter and colors vibrate and express of their own accord) there is little direct sense that the other could be a human being one dislikes, let alone an animal or a digital being. In the following chapter on wearables an argument will be made for the abject body, and moments of discord and disequilibrium from Merleau-Ponty’s thought will be emphasized, but for this discussion of alterity the question to be asked is whether his latent animism is one of lovers and sun-dappled landscapes, omitting a wide swath of human relations and affective states.

An ontology of corporeal intersubjectivity, as derived from and in turn applied to motion capture performance, is not about doubling, not about creating a replacement of one for another for the simple reason that we do not want to remain trapped within an endless cycle of exchange, or even play, without scope for transformation. The question becomes whether motion capture and other digitally mediated exchanges draw us into “an effective and transformative dimension of intercorporeality” (Diprose 2002, 9), or whether they let us swim in a sensual digital pool of reciprocity. I delight in Merleau-Ponty’s consideration of the other, and struggle to hold onto moments in his thought where I can truly read otherness in the chiasmic relation with the world, but when I really need to understand myself confronted with the strangeness of the digital rendering of my movement and I stumble over the unexpected and the sheer-not-me-ness of what I expected to be me. I need a more elaborated understanding of otherness, one that places me even further onto unknown territory, one that is out of balance and asymmetrical, offering a “topos or locus of the irreversible” (Irigaray...
1993, 153). I look to Levinas to push the limits of alterity, but at the same time I am wary that if the other is construed as radically other, he she or it might be so very different, so alien to me, that perhaps I cannot enter into a meaningful exchange.
This section on performing alterity is not about interrogating the nature and essence of the digital other. Instead, the visceral and affective responses to the other are taken to be the basis of a performative enactment of ethics. In order to sustain performance improvisation, I cannot unilaterally control the figure, drive it, or simply impose my narrow and finite will upon it. If I attempt to impose my will on the figure the performative exchange becomes profoundly uninteresting, I lose sense of direction and purpose, and the figure seems lifeless. Ethics resides in my response to the other and gives meaning and social integrity to my motions. Hence, a performative approach to alterity reinforces the validity of Merleau-Ponty’s claim that “I borrow myself from others; I create others from my own thoughts. This is no failure to perceive others; it is the perception of others” (1964c, 159). Although it resonates with the experience of responsive performance, this is the basis of Levinas’s critique of Merleau-Ponty: that corporeal intersubjectivity amounts to a unity of thought that subsumes the other and eliminates difference. For Levinas the problem is precisely that I create the others through “comprehending” them, as if I trap others in my personal thought bubble. Levinas’s rigorous and sensitive account of alterity challenges and deepens some Merleau-Pontian perspectives on self and otherness and helps to elaborate a performative ethics. In this section phenomenological descriptions from a performance called immanence (2005) are read through Levinas who maintains that the ethical relation is a “performative doing,” that ethics is “an expressive position of myself facing the other” reflecting my inability to control or contain the other. A Levinasian approach to alterity reminds us that “the ethical relation takes place at the level of sensibility, not at the level of consciousness” (Critchley 2002, 21).

Through Levinas it is possible to gain a deeper sense of alterity, to challenge the symmetry of reversibility with an asymmetric and irreversible relation between self and other, and to appreciate the need for an experience to remain in part, quite simply, beyond comprehension or outside of knowledge. The role for performance in shaping a new ethical approach to technologies can be given new significance if ethics is seen to be an expressive position of my self-facing another that may elude words, that operates on a kinesthetic and prereflective level. Paradoxically, through Levinas it is possible both to problematize the construction of an ethical schema based on the encounter between self and other mediated through motion capture, and to lend additional vibrancy to the phenomenological description of such an encounter.

Martin Heidegger’s discussion of techne quite unexpectedly helps with understanding the ethical dimensions of responsibility by linking response with responsibility, and facilitates a transition to a consideration of ethics informed by Levinas’s approach to alterity. Heidegger writes that “the principal characteristic of being responsible is this starting something on its way into arrival” (1977, 9). Once techne is defined as an act of revealing what was concealed—in other words of bringing forth into the world—technologies can be situated within this broader context of knowledge and revealing that is techne. Heidegger arrives at this conclusion by first rejecting the merely instrumental definition of technology and reworking of the notion of causality so that it is not reduced to a deterministic relation between cause and effect. When causation is seen to be responsible for bringing something into being, responsibility and revealing are linked, and responsibility occupies the broad and fertile ground of creative activity. In a simple sense, something that is not yet present makes its arrival through a dynamic of responsibility, or, I add, responsivity.

It is no accident that the published lecture in which Heidegger presents this argument is called The Question Concerning Technology. He asks us a question and we are expected to respond. Our response need not be articulated, it is enough that it is a process of thought, or a way of thinking. The relation of responsibility that Heidegger sets up between himself and the original group who listened to him in 1955, and, subsequently, those who read the published words, is an exchange between self and others that invites us to bring something into being: a new way of thinking. This is intensified by the matter he asks us to address: technology. As he puts it, technology itself “makes the demand on us to think in another way” (ibid., 30). We are asked to respond, and to respond differently. While Heidegger does not explicitly refer to the other, I take it that we are asked to respond by an other, or to use Levinas’s term, by a source of alterity.

For Levinas the deep structure of subjective experience unfolds by means of a relation of responsibility or, better, responsivity to the other. Consistent with much of the discussion of this chapter, he regards ethics as occurring through embodied exposure to the other (Critchley 2002a, 21), but inconsistent with a Merleau-Pontian approach is a tension between symmetrical and asymmetrical views of our responsive relation with the other. This can be focused on the role for gift or remainder in the chiasmic exchange. If the relation of reversibility or chiasmatic exchange at the basis of Merleau-Ponty’s phenomenology of intercorporeality is seen to occur without excess or loss, without gift or remainder, then there is a huge problem from a Levinasian point of view. The other can never be fully mapped, predicted, or exchanged. In contrast with the celebrated two-way exchange epitomized in Merleau-Ponty by the one hand touching the other, Levinas indicates that otherness can only be supported by irreversibility, by a one-directional offering that approximates a gift, for which there is no anticipation of return. By being a moment of excess that cannot be integrated into a predictable and measured relation of exchange, the gift occurs, in Levinas’s words, outside of knowledge, “otherwise than being,” and can open space for something entirely new or unexpected.

Interpretation is elastic and it is possible to overexaggerate the differences between Merleau-Ponty and Levinas. Merleau-Ponty’s chiasmic relation, despite being called reversibility, is not a synonym for substitutability or replaceability. There is always the moment of ambiguity, of disequilibrium at the heart of the motion; this is the drawing of strangeness into the relation of the self with the self, like the way my hand never succeeds in grasping the other or Merleau-Ponty’s example of twins who share the same flesh but are definitively absent from one another, living a distance apart with their concerns, despite different vocabulary, and Deleuze captures the structure of the gift in his appropriately titled book Difference and Repetition (1994). He writes: “Reflections, echoes, doubles and souls do not belong to the domain of resemblance or equivalence; and it is no more possible to exchange one’s soul than it is to substitute real twins for one another. If exchange is the criterion of generality, theft and gift are those of repetition” (Deleuze 1994, 1). Theft and gift represent loss and excess, they are remainders with no place in symmetrical relationships. The idea of twins is useful because intuitively we know what we cannot say: first we cannot pretend that our twin does not exist; second we cannot say that she is the same as me and that we can be substituted one for another; third we cannot say that the twin is such a strange creature that she is entirely alien to us. The same is true of the motion captured figure: it exists, it is not exactly the same as me, but it is also not irrevocably different from me, and, in a broader sense, I cannot pretend that the digitization of our bodies and social relations is going to evaporate or even diminish. Like it or not, we have digital twins. Immanence, a promenade-style performance, was structured around four responsive systems, each in their own “node” or area, in the performance space. One was
a Vicon optical motion capture system used in real time through which the live movements of an actor animated abstracted 3-D graphics. Another used medical imagery and gave the impression of a dancer swimming in her brain and heart. A third had a dancer engaging with her digitally manipulated real-time video feed, and the fourth was the basic configuration where collective movement shaped musical composition and visuals.22 The motivation for this project was not to use technology just for the cutting-edge cachet, but to explore in greater depth the qualities of internal and externality that could be achieved through practices of movement, attention, and perception in conjunction with computational systems. The inspiration for immanence was those labyrinthine processes of contemplation used to obtain a sense of internality that apply to yoga, meditation, and philosophy, and Deleuze’s thought of immanence and the virtual.

The term virtual has come to refer all too exclusively to the digital representation of life, structures, or 3-D worlds, or to data that has had its material structure altered (from words and numbers on paper to zeros and ones in cyberspace). This performance attempted to embody an alternate notion of the virtual: Deleuze’s suggestion that a life is made up of virtualities, events, singularities, that the virtual is “not something that lacks reality but something that is engaged in a process of actualization” (2001, 31). In some respects, this was by the instant falling out of phase with itself—which is the temporal flow, the differing of the identical” (Levinas 2002, 9). Plays across temporality are further manifested in performance and in life not only when lags are integrated into movement, but when anticipation becomes palpable. A thought, gesture, or full-body movement that has not yet occurred but is about to materialize has its precursors, and these can be sensed as though they were a pre-touch, or virtual force. In this way I live across temporalities as I respond to virtualities in the moment of movement. Both the lagged past and the ill-defined future are filtered through my attitude of responsibility, catching me up in a swirl of feedback and feedforward.29 As Levinas says, the instant falls out of phase, but I too fall out of phase with myself, revealing the remainder or the gift inherent to this movement dialogue. The reversibility of this movement was never a self-identical mapping, never exactly in sync or coinciding with expectations. Of course I had developed an implicit narrative throughout the devising process for immanence, which lasted a number of months, but once in the system I let the movement occur through listening, feeling, and receiving, prior to acting or at the same time as acting. Levinas’s description of skin that touches depicts the improvisation process with uncanny vividness: “movements of hands and fingers that explore, of a head that changes points of view, and of hearing; movements of contraction and decontraction of the eye muscles. These muscular acts and these perceptive acts are ‘mixed’, tied to the exploratory activity of a skin that touches” (Levinas 1990, 61). The immanence was virtual inasmuch as it was both deeply internal but at the same time still about to occur.

Repeated encounters with otherness, and the unsettling unpredictability of these encounters, are always latent in the experience of performing with responsive technologies. A peculiar relation with alterity occurred in one particular section of immanence as my body became flesh, or meat. My movement was transfigured into visuals with the uncanny look and feel of a live Francis Bacon painting. My face and limbs seemed to be stripped of the outer layer of skin, appearing like raw meat, with moments where eye sockets, ribs, teeth, or fingers were clearly visible prior to dissolving anew into a visceral smearing. There was a feeling of having been flayed, but also a tremendous life force or power to this state of a body turned inside out (which was no longer just my body). Levinas’s description of the encounter with the face of the other was challenged: the image presented itself to me as an other denuding itself of its skin, sensitivity on the surface of the skin, at the edge of the nerves, offering itself even in suffering” (2002, 15), but the face-to-face relation between myself and the image was not distant and respectable; the other was grotesque, distorted flesh and I echoed this, feeling my own self transformed into moving meat. Writing on Bacon, Deleuze identified in the paintings what I felt in my body, an “intense movement” flowing through my body and the body of the digital other,” a deformed and deforming movement that at every moment transfers the real image onto the body in order to constitute the Figure” (2004, 19). Bacon dismantles the face in his paintings: the body escapes through the mouth, the flesh descends, the teeth are little bones in heads that are “wiped, scrubbed or rubbed.” There were no faces in any of the visuals in immanence, but in the heads there were perhaps “insinuations of faces,” to return to Levinas for a moment (1990, 66). There was meat in the purples, reds, and oranges. There were “zones of indiscernibility or undecidability between man and animal” (Deleuze 2004, 21), between self and other, between human and nonhuman. Despite knowing that my movement contributed to and provided the movement narrative for the raw visual effects in immanence, they were the impetus for my emotional and physical shifts through space—I was compelled to respond or to be evicted from the intimate flow into a position of outsider to my own actions.

The use of the extreme visceral philosophy of Deleuze juxtaposed with Levinas allows me to do something else that has been implicit throughout the consideration of immanence, which is to use flesh and meat to overcome the implicit duality between immanence and transcendence. Calling this performance immanence and asking three women to dance in it can’t help but evoke the feminist philosophical critique of the position of women and their bodies as immanent to centuries of philosophical thought that associate men and philosophical thought with transcendent. As Iris Young succinctly put it, “women in male-dominated society struggle(s) to live out free transcendent subjectivity within the requirements of immanence and objectification (1998b, 287). The obvious question is whether I am celebrating the requirements of immanence and objectification (1998b, 287). The obvious question is whether I am celebrating the

Chapter 4 very practically manifested through dancers and images, but in phenomenological terms immanence pushed the limits of sensation, opening the scope of movement exploration so that the choreographic elements included internal impulses, kinesthetic reactions, digital interventions, virtual singularities, and the shifting terrain across materialities where the familiar and preexisting melted into something indefinite and undefined. Too often the phenomenological approach is seen to be stuck within the confines of a sensory subject in an external landscape, but on this occasion landscape gave way to topography, internal and external, actual and potential. Immanence and the phenomenology to come out of it did not have as a goal simple self-reference, but attempted “to introduce difference into the very idea of sensation” (Rachman 2002, 16).23

I inhabited the node in the performance space where projections of my movement were modified in real time by visual artist Jamie Griffiths and then returned to my side, visible on a floating projection surface.24 The only way I could perform in this configuration without falling into rote and spectacle was by wholly responding to the sensory stimulus around me. This improvised performance cycle happened across a range of temporalities: sometimes very quickly, almost simultaneous to the images generated, sometimes with delay. The temporality of the visual transformations, which occasionally incorporated short buffered loops and a lagged duplication of my image, echoed a comment by Levinas on the differing of the identical self through temporality and phasing: “In the temporalization of time the light comes about...
the immanent side of the duality as a way of correcting the balance. I would have to say no, for the reason that this would preserve the duality and also hold onto a standard notion of transcendental subjectivity. Young’s identification (after Simone de Beauvoir) of contradictory modalities such as “ambiguous transcendence, and discontinuous unity” is a partial move to escape the old structures by fragmenting and reassembling them. But Deleuze and Levinas take us further. When immanence is a state of potentiality rather than simply an internal state, when the distinction between the performing self and the visual virtual other is swallowed up by a shared corporeal ebb & flow in, immanence no longer needs to be twinned with transcendence in order to have a corporeal and ethical validity.

We need not look to the extreme interpretations of raw, skinless meat in order to emphasize the otherness in the relation of self to the world. Levinas’s objection to Merleau-Ponty seems to be that true otherness cannot be obtained if the “unity” of a body is at its basis (1990, 63), but the human body is never homogeneous, never entirely known, and the topography of the human body is interwoven with strangeness. This is not just the sense of never really knowing what the small of our back looks like, of not knowing the shape, texture, or size of our liver, or how our skeletal structure manages to hold us upright, or what malignancies may be lurking deep within. On a daily basis we live with faith, and more than a little surprise, that when we get out of bed in the morning the puppet that we are manages to string itself together once again; we need only look to the dancer’s perspective to question rather than reinforce the assumption of unity in a body. A passage written by dance historian Susan Foster on the slippages inherent in a dancer’s control over her own body stays with me, and makes me want to ease Levinas’s mind when he worries that the right hand might know the left hand too well in order to account for alterity. Dance illustrates how our bodies exist through formlessness, either that of pain and injury or that of vigor and physical exhilaration, and frequently both entwined. Foster’s account of the dancer’s relation to her own body conveys the entwinement of mastery and disintegration, dispelling the myth that the dancer is in full control of her body. Formlessness is the lining of the dancer’s form, as the invisible lines the visible. Foster writes:

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Typically, a dancer spends anywhere from two to six hours per day, six to seven days per week for eight to ten years creating a dancing body. During the course of this travail, the body seems constantly to elude one’s efforts to direct it. The dancer pursues a certain technique for reforming the body, and the body seems to conform to the instructions given. Yet suddenly, inexplicably, it diverges from expectations, reveals new dimensions and mutely declares its unwillingness or inability to execute commands. Brief moments of “mastery of the body” or of “feeling at one with the body” occur, producing a kind of ecstasy that motivates the dancer to continue. Clear sensations of improvement or of “mastery of the body” or of “feeling at one with the body” occur, producing a kind of ecstasy that motivates the dancer to continue. Clear sensations of improvement or of discontinuous unity is a partial move to escape the old structures by fragmenting and reassembling them. But Deleuze and Levinas take us further. When immanence is a state of potentiality rather than simply an internal state, when the distinction between the performing self and the visual virtual other is swallowed up by a shared corporeal ebb & flow in, immanence no longer needs to be twinned with transcendence in order to have a corporeal and ethical validity.

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Figments was a motion capture installation by Mesh Performance Practices for which the capture system was neither optical nor magnetic, but ultrasonic. It was a partial hack, stitching together two ultrasonic tracking systems. The images were projected in real time onto a large hanging screen in the front room of a Victorian house that acted as a performance space, but also onto small liquid crystal display (LCD) screens suspended at head height, and to a head-mounted display worn by the performer. One performer at a time was wired to a computer, although there would generally be two performers improvising in the space at a time. The system worked by creating a feedback loop between four small speakers suspended in the room emitting ultrasonic clicks (inaudible to the human ear) and small microphones worn by the performer. Taped to the performer’s limbs and head, each microphone was attached to a cable that trailed along her body to be gathered into an “umbilical cord” connecting her with the computer. These microphones picked up the clicks and transferred this audio information to the computer, which then translated it into a visual map of the position of the microphones in space. Once wearing the motion-capture “suit,” which was more like a tangle of cables, the performer effectively puppeteered an abstracted image of the human form in real time. The do-it-yourself nature of the system—nonstandard, ultrasonic, stitched-together and running on simple PCs—meant that the graphics had to be extremely minimal line drawings to not tax the CPUs with data for real-time updating.

Two elements of this performance-animation experiment take this philosophical discussion into different areas. First, this system worked by means of sound and not images because microphones were the source of capture instead of cameras. And second, its instability surpassed that of the other experiments discussed in this chapter. The impact of these elements was to challenge corporeality and responsibility to their points of breakdown. Corporeality, even the fluid and chiasmic construction offered by Merleau-Ponty or the one permeated by the infinite of the other rather than totality of the same offered by Levinas, could not fully account for the dissolution of the bodies in this movement exchange, or for their “remembering” in the dual sense of unearthing memories and assembling the parts of the body anew. Deleuze’s sense of the body as forces, particles, and planes gained a relevance that before had only been oblique, particularly his interpretation of Spinoza’s ethics. Here is an ethics based on affect and motion, on speeds and slownesses. Some of the most abstract, conceptual dimensions of his reading of Spinoza were given flesh by the phenomenologies derived from performing in figments. “Concretely,” writes Deleuze, “if you define bodies and thoughts as capacities for affecting and being affected, many things change. You will define an animal, or a human being, not by its form, its organs, and its functions, and not as a subject either; you will define it by the affects of which it is capable” (1988, 124). The...
not act to correct any distortions caused by the elements at play in the scene (moving water, flickering light, air currents, waving trees); rather, it occurs through and because of them:

If there were no distortions, no ripples of sunlight, if it were without this flesh that I saw the geometry of the tiles, then I would cease to see it as it is and where it is—which is to say, beyond any identical, specific place. I cannot say that the water itself—the aqueous power, the syrupy and shimmering element—is in space; all this is not somewhere else either, but it is not in the pool. It inhabits it, it materializes itself there, yet it is not contained there; and if I raise my eyes toward the screen of cypresses where the web of reflections is playing, I cannot gainsay the fact that the water visits it, too, or at least sends into it, upon it, its active and living essence. (1964a, 182)

The poetic beauty of this passage is often used as a way to dismiss its philosophical and perceptual insight, as if conceptual revelation could not happen through sensory pleasure. In addition to providing a basic understanding of embodied and situated perception, this passage provides a metaphoric leap required to make sense of the visual, sonic, and responsive peculiarities of the figments system. The pool was the physical room in which we performed. It was disturbed by the incessant but inaudible clicks used to keep track of the five sensor points on our limbs. These sounds traveled in waves, bouncing off the walls and floor, echoing across the physical structure of the room. The pool was also the digital space held within the computer monitor and the head-mounted display worn as goggles by the dancers, allowing us to see the digital space before our eyes at the same time as the physical space could be seen in our peripheral vision. These two pools were continuous, just as the water in Merleau-Ponty’s tiled pool and the viscous, shimmering element reflected onto the leaves were continuous. Further watery responses were elicited in the figments space when another person, not wired up and seemingly not connected to the animated figure, traveled through the physical space at a rapid rate. Their wake in the sonic dimensions of the room would disrupt the tracking process and make the figure respond with large, unexpected movements, as if tossed about by the sound waves. This seemingly “uncaptured” and invisible person was, in concrete terms, able to elicit a response from the system through the connective tissue that was the collective space of sound.

Being in the system meant more than just having the microphones and HMD: the inhabitants of this shared pool also included the other performer, audience members who strayed through the room, and of course the visualizations. I noticed my channels of perception and responsivity became hypersensitized, perhaps because there was so much seemingly nondeterministic behavior occurring through the system. Action B was less likely to produce response A or even response B, I had to be prepared for responses X or Y. At times the tracking system would malfunction, causing the figure to do something entirely other like kick its leg when I had not kicked my leg. These uncontrollable eddies became a feature of the installation; some days they were more violent and unpredictable than others. In the split second of this phantom movement happening, I would occasionally prereflectively attribute it to the other performer in the space even though he was not attached to the computer the way I was and ostensibly was not being captured. It was almost as if the other had taken control of one of my sensors and inserted his movement information into the relationship between myself and the animated figure. Thus, our relationships in space became triangulated: across myself and the other performer, across myself and the image that I generated, across the other performer and the image even though he exerted no direct control over it, apart from coexisting in the same performative space with it.

As I began to realize the levels of distortion and unpredictability in this system were higher than in any previous one, different corporeal and affective paradigms emerged: those of illness, of pain. And of humor. Comedy arrived, unannounced and unexpected, piggybacking on the distorted relationship of puppeteer to puppet evoked by the performer and the image tied to her movement. Due to the inherent imprecision of figments’ system for performance animation, exact replication of movement was not possible. Delivered instead was comedy. When the vagaries of the system were not so great that the figure seemed to be in distress or transcended all anthropomorphism, when the figure responded nearly in real time with only a small time lag, this elicited a comedic response from the performer: prancing around the space, silly runs, exaggerated arm and leg movements. The figure shifted in size depending on the position of the performer in the space, with an extraordinary knack of becoming larger and splitting out of the frame, in a weird sort of looping embrace of the space as arms and legs wrapped and extended. Covering a microphone-sensor with one hand while traveling through space resulted in stretching a limb of the image, whereas uncovering the sensor made the limb bounce back. The twitches, kicks, and jerks that were the result of the computer losing track of the body were interpreted as naughty responses on the part of the figure. The system did not need intelligence programmed into it in order for autonomy or even agency to be attributed to its cheeky progeny.

Demonstrating vividly the suggestion that according to Spinoza a body is that which affects other bodies, or is affected by other bodies, the figure was able to make me react to it with that mix of confusion, discomfort, and compassion we have when faced with the pain of another. The final performance was marred by the system tracking only 10 to 20 percent of the performers’ movements, and the animated figure generated became analogous to an autonomous being exhibiting extreme psychosis: it was only intermittently aware of external stimuli; the rest of the time it engaged in a violent dance of dismemberment. It shook, it leapt, it shrank and grew; its limbs flew about and flapped in response to imagined stimuli. The effect was disturbing. I felt as if the figure was in considerable distress and wanted to save it from the demons that tormented it. I had a visceral reaction. The figure was like an animal in pain and I felt traces of this, as if, as for Spinoza, there existed one substance (or flesh) for all the attributes, “one Nature for all bodies, one Nature for all individuals... no longer the affirmation of a single substance, but rather a the laying out of a common plane of immanence on which all bodies, all minds, all individuals are situated” (Deleuze 1988, 122). Rather than argue in a reductive fashion that one person can feel another’s pain, it is enough to say that human beings apprehend the effects of the composition and decomposition of relations. This is a Spinozan argument. Deleuzian Spinozism takes the relations between self and other into a multiplicity of relations including those one has no part in. Joy is experienced when a body encounters our body and enters into composition with it, or when an idea enters into a similar relation with our mind; sadness is the effect when a body threatens us with decomposition, or an idea damages our sense of coherence. When we are exposed to a body in a state of decomposition the effect is that we will feel one of the sad passions just by being presented with it because we are too able to sense the same decomposition affecting ourselves (ibid., 19). There is no reason to assume that there will not be a similar affective result if the body is a digital or a fictional figure.
At that time of the performance of figments, I was drawn to juxtaposing phenomenological reflections with principles and metaphors from computational research into Artificial-Life, suggesting that an experiential account of performance can be the basis for a dialogue across science and arts. Looking to A-Life was a first attempt at providing a wider context for my sense that the data with which I danced was more than mere representation, the basest level of mimesis. I looked to A-life to provide considerations of alterity, agency, autonomy, emergence, adaptation, and even metabolism—in short, for some way to understand how an array of pixels might instill in me a human response. I searched for kindred research and practice in a community like that of artists that both constructed and conceptualized.

The intrigue of scientific pursuits into A-Life is that they ask us to imagine life-as-it-could-be in order to illuminate life-as-we-know-it (Langton 1996, 40). These imaginative, computational worlds are generally based on the premise that they are excluded from our own world, either by existing in a computer or in a conceptually self-contained world. The media used for experiments into A-Life include computers, robots, and (bio)chemical soups. Since this permissible range of media travels from the organic to the inorganic, by way of biology, robotics, and computer programming, I wondered whether was a possibility for artificial worlds to collide with our own, or, in other words, to be entwined with ours.

figments felt like the birthing of a sentient system over the course of the six-week research period, so I attempted to inject scope for performativity and physical spaces into the A-Life imaginative construct of life-as-it-could-be. Could this “could-be” life share some of the physical spaces and materials with the life-as-we-know-it, while still having a revolutionary impact on life-as-we-know-it? As ever, the artistic and philosophical goals were to see whether new paradigms of human engagement with computer systems could challenge existing norms and conventions in arts, sciences, and culture. A-Life proved to be a dead-end. It labored the notion of life by remaining committed to an ontological approach that was essentialist and substance driven. For the most part, the A-Life community was concerned with arguing what artificial beings were, when I needed a phenomenological ontology that was concerned with modes of being, or responsivity. I looked to A-Life discourse for innovation and a little magic (some of the rhetoric exhibits a certain amount of drama and hyperbole), but in the end I could not find concepts sufficiently vital and dynamic to converge with, and illuminate, my embodied experience. Subsequently, I learned that what I needed in order to understand the radically unstable alterity encountered through figments were both the kinetic and dynamic propositions regarding bodies that Deleuze identified in Spinoza: the motion and rest of particles, and the capacity for affect and being affected (Deleuze 1988, 123).

A body has a capacity for affecting other bodies. This body can be a human, an animal, an artwork. “A body can be anything; it can be an animal, a body of sounds, a mind or an idea; it can be a linguistic corpus, a social body, a collectivity” (ibid., 127). A body can be digital data, generated entirely from a computer, extrapolated from my movement, or an interpolation of the two. After interpreting Merleau-Ponty’s intersubjectivity through a Spinozan filter so that it includes the inanimate, and Levinas’s alterity through the same filter so that it stretches to the nonhuman, we have come to a place where there are no philosophical acrobatics required to meet the phenomenological reality of performing with motion capture data. Bodies are speeds and affects. They are in motion and rest, they affect and are affected. “A body, however small it may be, is composed of an infinite number of particles; it is the relations of motion and rest, of speeds and slownesses between particles” (ibid., 123). This is the first attribute of a body, that it is made up of particles in motion; the second is that it affects or is affected by other bodies. Both attributes are evident in Contours: the software for one section produced particle systems that responded to my dynamic impulses by visually exploding into clouds, then quieting into a single stream when the motion subsided. Suspended in a low-slung harness, toes barely touching the ground, my limbs were pulled in many directions at once, my center of gravity was ripped from one location and thrown outward, tossed. Inverted and spinning, the particles flying like sparks off my body, I lived the complex relation between stillness and acceleration, releasing a surge of motion and swallowing it into one small suspended
Chapter 4

Motion Capture: Performing Alterity

point of stillness, like holding a breath.

Ethics "is about being positioned by, and taking a position in relation to, others." Taken further, it relates to one’s character, dwelling and habitat, and is registered, according to Diprose, as "the problematic of the constitution of one’s embodied place in the world" (1994, 18–19). When our world consists of ever-expanding digital modalities, our ethics has to take into account our embodiment across materialities and our relation to others as they are embodied across materialities. An ethics relevant to our times spans digital bodies and human bodies, and how we behave toward ourselves and others once we are diffused across materialities in the world: our expectations, our habits, our hopes and fears, our visceral reactions and intellectual categories all merge and converge. It is a comfort to return to Diprose and her lush reading of Merleau-Ponty. Deleuze, despite the intellectual excitement he generates and the uncanny revelations of his account of Spinoza for figments, always feels cold to me, as if I have entered a centrifuge or a supercollider, that long tunnel underground where atoms are smashed into particles. The plane of immanence contains all possible individuals, speeds, arrangements, and affects but it feels like a garden before it has been planted, like setting the conditions for joy and sensuality without actually getting there, a dispersed corporeality that loses the inherent vulnerability and fragility that make a body human. Diprose with her Merleau-Pontian interpretation can be used to soften Deleuze. I warm to her indication that we operate within the affective and transformative dimension of intercorporeality. Sensibility "is fundamentally open and transformative of the self, the other, and the social norms that inform it" (Diprose 2002, 105).

My data is not radically discontinuous from myself. I hold onto a body as a way of engaging with the world and with others. These two moves may be seen as limitations of the ethical reflections in this chapter, certainly if the radical alterity of Levinas’s approach and the dissolution of the “body proper” (le corps propre) of Deleuze’s approach are accepted. I ride the momentum of thought from Merleau-Ponty, to Levinas, to Deleuze to explore the limits of alterity and push the scope for motion, but in the end I return to Merleau-Ponty, recognizing that I am not on a conceptual journey alone. I am a phenomenologist and I receive and integrate through hyperreflection what I learn through performance: my data is strange but also close, my body is porous and permeated with other, but it is still how I live in the world.
This section on performing alterity is not about interrogating the nature and essence of the digital other. Instead, the visceral and affective responses to the other are taken to be the basis of a performative enactment of ethics. In order to sustain performance improvisation, I cannot unilaterally control the figure, drive it, or simply impose my narrow and finite will upon it. If I attempt to impose my will on the figure the performative exchange becomes profoundly uninteresting, I lose sense of direction and purpose, and the figure seems lifeless. Ethics resides in my response to the other and gives meaning and social integrity to my motions. Hence, a performative approach to alterity reinforces the validity of Merleau-Ponty’s claim that “I borrow myself from others; I create others from my own thoughts. This is no failure to perceive others; it is the perception of others” (1984c, 159). Although it resonates with the experience of responsive performance, this is the basis of Levinas’s critique of Merleau-Ponty: that corporeal intersubjectivity amounts to a unity of thought that subsumes the other and eliminates difference. For Levinas the problem is precisely that I create the others through “comprehending” them, as if I trap others in my personal thought bubble. Levinas’s rigorous and sensitive account of alterity challenges and deepens some Merleau-Pontian perspectives on self and otherness and helps to elaborate a performative ethics. In this section phenomenological descriptions from a performance called immanence (2005) are read through Levinas who maintains that the ethical relation is a “performative doing,” that ethics is “an expressive position of myself facing the other” reflecting my inability to control or contain the other. A Levinasian approach to alterity reminds us that “the ethical relation takes place at the level of sensibility, not at the level of consciousness” (Critchley 2002, 21).

Through Levinas it is possible to gain a deeper sense of alterity, to challenge the symmetry of reversibility with an asymmetric and irreversible relation between self and other, and to appreciate the need for an experience to remain in part, quite simply, beyond comprehension or outside of knowledge. The role for performance in shaping a new ethical approach to technologies can be given new significance if ethics is seen to be an expressive and prerreflective level.20 Paradoxically, through Levinas it is possible both to problematize the construction of an ethical schema based on the encounter between self and other mediated through motion capture, and to lend additional vibrancy to the phenomenological description of such an encounter.

Martin Heidegger’s discussion of techne quite unexpectedly helps with understanding the ethical dimensions of responsibility by linking response with responsibility, and facilitates a transition to a consideration of ethics informed by Levinas’s approach to alterity. Heidegger writes that “the principal characteristic of being responsible is this starting something on its way into arrival” (1977, 9). Once techne is defined as an act of revealing what was concealed—-in other words of bringing forth into the world—technologies can be situated within this broader context of knowledge and revealing that is techne. Heidegger arrives at this conclusion by first rejecting the merely instrumental definition of technology and reworking of the notion of causality so that it is not reduced to a deterministic relation between cause and effect. When causation is seen to be responsible for bringing something into being, responsibility and revealing are linked, and responsibility occupies the broad and fertile ground of creative activity. In a simple sense, something that is not yet present makes its arrival through a dynamic of responsibility, or, I add, responsibility.21

It is no accident that the published lecture in which Heidegger presents this argument is called The Question Concerning Technology. He asks us a question and we are expected to respond. Our response need not be articulated, it is enough that it is a process of thought, or a way of thinking. The relation of responsibility that Heidegger sets up between himself and the original group who listened to him in 1955, and, subsequently, those who read the published words, is an exchange between self and others that invites us to bring something into being: a new way of thinking. This is intensified by the matter he asks us to address: technology. As he puts it, technology itself “makes the demand on us to think in another way” (ibid., 30). We are asked to respond, and to respond differently. While Heidegger does not explicitly refer to the other, I take it that we are asked to respond by an other, or to use Levinas’s term, by a source of alterity.

For Levinas the deep structure of subjective experience unfolds by means of a relation of responsibility or, better, responsibility to the other. Consistent with much of the discussion of this chapter, he regards ethics as occurring through embodied exposure to the other (Critchley 2002a, 21), but inconsistent with a Merleau-Pontian approach is a tension between symmetrical and asymmetrical views of our responsive relation with the other. This can be focused on the role for gift, or remainder in the chiasmic exchange. If the relation of reversibility or chiasmic exchange at the basis of Merleau-Ponty’s phenomenology of intercorporeality is seen to occur without excess or loss, without gift or remainder, then there is a huge problem from a Levinasian point of view. The other can never be fully mapped, predicted, or exchanged. In contrast with the celebrated two-way exchange epitomized in Merleau-Ponty by the one hand touching the other, Levinas indicates that otherness can only be supported by irreversibility, by a one-directional offering that approximates a gift, for which there is no anticipation of return. By being a moment of excess that cannot be integrated into a predictable and measured relation of exchange, the gift occurs, in Levinas’s words, outside of knowledge, “otherwise than being,” and can open space for something entirely new or unexpected.

Interpretation is elastic and it is possible to overexaggerate the differences between Merleau-Ponty and Levinas. Merleau-Ponty’s chiasmic relation, despite being called reversibility, is not a synonym for substitutability or replaceability. There is always the moment of ambiguity, of disequilibrium at the heart of the motion; this is the drawing of strangeness into the relation of the self with the self, like the way my hand never succeeds in grasping the other or Merleau-Ponty’s example of twins who share the same flesh but are definitively absent from one another, living a distance that, at the same time, is a strange proximity (Merleau-Ponty 1964c, 15). Levinas and Merleau-Ponty are not so very far apart with their concerns, despite different vocabulary, and Deleuze captures the structure of the gift in his appropriately titled book Difference and Repetition (1994). He writes: “Reflections, echoes, doubles and souls do not belong to the domain of resemblance or equivalence; and it is no more possible to exchange one’s soul than it is to substitute real twins for one another. If exchange is the criterion of generality, theft and gift are those of repetition” (Deleuze 1994, 1). Theft and gift represent loss and excess, they are remainders with no place in symmetrical relationships. The idea of twins is useful because intuitively we know what we cannot say: first we cannot pretend that our twin does not exist; second we cannot say that she is the same as me and that we can be substituted one for another; third we cannot say that the twin is such a strange creature that she is entirely alien to us. The same is true of the motion captured figure: it exists, it is not exactly the same as me, but it is also not irreducibly different from me, and, in a broader sense, we cannot pretend that the digitization of our bodies and social relations is going to evaporate or even diminish. Like it or not, we have digital twins.

Immanence, a promenade-style performance, was structured around four responsive systems, each in their own “node” or area, in the performance space. One was a Vicon optical motion capture system used in real time through which the live movements
1. Sections of this chapter contain material reworked from previously published essays including: “Finitesimal clouds of electric change: A Life Approach through Interactive Live Performance” (2000a); “Revealing Practices: Heidegger’s Technê Interpreted through Performance in Responsive Systems” (2006a); “Ghostcatching: More Perspectives on Captured Motion” (1999); “Marionettes and Dancers: Dance and Digital Technologies” (1998a).

2. Ortchley indicates that this is a formulation of Levinas’s adopted by Maurice Blanchot: the ethical relation to the other “can only be totalized by falsely imagining oneself occupying some Godlike position outside of the relation” (Ortchley 2002a: 15). It is an indication that technologies are seen as having “purposes” experiment included Kirk Wooford, Micha Hoch, and Gisèle Vienne.

3. Reversibility was discussed from different perspectives in the chapters on telematics (emphasizing extension) and on installation (elaborating a poetics of responsibility). Here reversibility will be evaluated in an ethical context. There is some debate in philosophical communities over whether Merleau-Ponty’s technê understood phenomenologically through performance in responsive environments can be found in Kozel 2006.

4. Some philosophers believe that Merleau-Ponty’s attempt to construct a new ontology is an example of innovatively new approaches in philosophy. See, for example, Diprose 2002.

5. Smerling means to suffer indiscern or doubt and is the title of a collection of poetry by Robin Robertson (2006).

6. It is worth recognizing that at the time of Merleau-Ponty’s writing the term virtual was used to refer to computer-generated imagery designed specifically for dance. See for example, When (1996) and coordinated by Dick Hollander agency, South East Arts, the University of Surrey Institute International de la Marionette (Charleville-Mézières, France) and the Zentrum fur Kunst und Medientechnologie (ZKM, Karlsruhe, Germany).

7. Immediate collaborators for this performance included Kirk Wooford, Sarah Lloyd (performance), Jonathan Clark (music), and Susan Kozel (concept, artistic direction, performance). It was a commission for the HTS Festival in 2005, hosted by Studio XX of Montreal, and supported by the Canada Council for the Arts, the Interactivity Lab of Simon Fraser University, Mesh Performance Productions, and Primad Divine Productions.

8. Francisco Varela bases an approach to ethics on commonalities of the virtual self as “selfless” in that it is an emergent pattern that has coherence but no center. We are not “top-down” directed entities; instead, we live across constant shifts in our microenvironments. “This skillful approach to living is based on a pragmatics of transformation that demands nothing less than a moment-to-moment awareness of the virtual nature of our selves” (Varela 1999, 75).

9. The software used for this real-time modification is called leda, created by Mark Coniglio of Troika Ranch. It is a sophisticated tool for manipulation of real-time video imagery designed specifically for dance. See http://www.troikaon.com.

10. Appreciation goes to Erin Manning for making clear the power of anticipation by means of a movement improvisation. The force of anticipation was so powerful as to exert a “push” that could almost topple us from a standing position. The performative philosophical workshop, Dancing the Virtual, directed by Erin Manning and Brian Massumi (Montreal, 2006) provided a unique opportunity to embody philosophical thought around virtuality. For formulations of “feed-forward,” see Godard 1994 and Berthoz 1997.

11. There is considerable debate in the philosophical community over whether various ethical paradigms apply to human animal relations. See Lewinoy 1991 and Turner 2003 for two views on Levisonian ethics and animals.

12. A Life research from the 1970s to 1990s, the more I came to agree with Claus Emmke’s wry observation: “Artificial life does not have very many mothers; perhaps women may not have quite the same aspirations since their relation to the creation of real life is better grounded in personally embodied experience” (Emmke 1994, 50).

13. I acknowledge that the field is changing and spawning hybrid offspring with biotech and bio art. I look forward to seeing where it goes.
4.1 conjuring acts
4.2 performance animation
4.3 empathy, seduction, control
4.4 fear of capture
4.5 intercorporeality
4.6 performing alterity
4.7 affect, motion, ethics

5.1 data choreography
5.2 corporeal telepathy
5.3 affective computing
5.4 conjunctive tissue of visibility
5.5 a force field of passions
5.6 the abject: “quite close”
5.7 closing

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