The Visible Human Project: Informatic Bodies and Posthuman Medicine

Waldby, Catherine. New York and London: Routledge, 2000. 184 p., with illustrations, paperback. ISBN: 0415174066.

<1> Waldby tells the story of the Visible Human Project, a project unveiled in November 1994 by the National Library of Medicine. Authors of this project have successfully recorded real human bodies in three-dimensional, living color, capturing these bodies in digital images through the technology of MRI (Magnetic Resonance Imaging) and CT (Computed Tomography) scans, as well as cadaverous dissection and high-resolution digital color photography. The first of such virtual bodies belonged to Joseph Jernigan, of Waco, Texas, who was sentenced to death and executed by lethal injection in August 1993. His body was immediately frozen and scanned, and then subsequently dissected and incrementally photographed, each cross-section corresponding to the scanned MRI and CT images. (The cryosectioning produced 1,878 images in the case of Jernigan and 5,189 in the case of his female counterpart, several years later.) Jernigan's body, although it was altogether destroyed in the elaborate process of imaging, has been captured in recoverable data files, assembled digitally, and resurrected, as it were, as a three-dimensional virtual body whose surfaces, as well as depths, are now and forever open to the medical gaze.

<2> While Waldby does an impressive job laying out the history of visual medical technologies, the real impact of her text lies elsewhere. What fresh challenges do recent medical technologies raise for a consideration of human subjectivity? Do these technologies in some manner refigure the human, throwing open anew "the location of subjectivity and embodiment" (23), as Waldby puts it? Translating Jernigan's body into information renders it strangely atemporal, she argues, without worldly context, not only on display but able to be integrated into interactive virtual surgeries, and otherwise virtually reanimated: his heart can be made to beat again, blood course through his veins, his muscles flex, and his flesh offers life-like resistance to the surgeon's virtual scalpel. More than just an image, a map, or a re-presentation of Jernigan's corpse, we have what Waldby calls a "surrogate" for his actual body (74). We can "see" Jernigan in ways never before imaginable: "Users can move around the body using hypermedia links and 'flythroughs', which allow navigation through the body's lumens from a vantage point similar to that of a tiny spacecraft" (16).

<3> Waldby's research broaches the more vexing questions regarding the status -- and some would add "value" -- of life itself in an age that promises the faithful and exhaustive digitization of the human body, the mapping of the human genome, and the other brave new worlds implicated by stem-cell research, cloning technologies, life-support systems, organ donorship, and increased reliance on pharmaceuticals and prosthetic devices, to name but a few. The Visible Human Project is just one amongst many recent technological feats that serve to blur the line between the organic and the machinic, between the actual and the virtual, between genesis and what Waldby calls "technogenesis." Human life is more and more a "biotechnological

assemblage," and so the terms of these binaries are becoming less and less discrete. Indeed, even the once hard and fast divisions between life and death have become destabilized. What, for instance, is the moment of death? Is it brain death? And what "life" is preserved by "life-support" systems? If life itself can be translated into data or informatics, might it not be supported equally well by a non-organic infrastructure, preserved indefinitely *in silico*?

<4> The question of what a "life" or a "subject" really is, and the (real or virtual) space a subjective life occupies, remains in question throughout Waldby's text. If the distinction between nature and artifice is now reconceived as permeable or "interramified" (Waldby's term), where in this interface can we locate subjectivity, life, and the body? Like Waldby, I hesitate to locate subjectivity solely in some spiritual interior, and again like Waldby, I am critical of the Cartesian binary of matter and spirit; I do not believe this binary maps tidily onto nature and culture or onto biology and technology; moreover, nor do I consider the "spiritual" to be the uncomplicated and exclusive domain of subjectivity. Is "life," for instance, one term in a binary, and if so, what term does it oppose? Death? Technology? Culture? Artifice?

<5> Waldby is clear that the terms of these binaries are ultimately inseparable; they are interramified, and "distinctions collapse and flow into each other" (157). While I find her moments of doubt extremely productive (more on this below), Waldby is keen to redefine life as "the life of information" (160), to rethink the human in terms of its functionality, as "indistinguishable from bio-techno-logical capacities" (161), or as biotechnical assemblage. For her, the virtual world is thus a place of subjective projection and identification, suggesting a new kind of "interiority" reckoned as information or data -- a "surface interiority" that would yield a "new transcendence" as it lays to rest the old and prejudicial definition of the subject as deep, hidden, sacred essence.

<6> Waldby takes to task those who understand the "posthuman" through an overemphasis on the "post-". For this would imply some prior category of "human," some pure origin from which humanity has strayed in its adoption of technology. If there is a difference, it is in degree, not in kind: "techno-contamination is... conterminous with the human, its technogenic network of production" (20). And so while she agrees with theorists like N. Katherine Hayles, who see the human as ontologically inseparable from technology, she does not subscribe to a myth of pure origins: for her, genesis is always already technogenesis. More strongly stated, we are and have always been cyborgs, and to be human means to be technological from the earliest of human history. There has never been a purely organic past, never a Luddite utopia only to be subsequently "contaminated by technicity" (48). Thus, for Waldby, the posthuman is not, as it is for Hayles, a real moment in human history so much as a "critical moment" in our bio-cybernetic evolution, "a point of view or insight made available by the contingency of technics" (49).

<7> And yet, as I said, doubts crop up. Waldby repeatedly invokes the anxiety produced by invasive and ordering technologies; she is sensitive to our vulnerability to technical knowledge, since it

threatens to eviscerate the depths of the psyche, to transform those depths into mapped surfaces. She acknowledges that one's bodily interior is now liable to be de-privatized, and that we still understand this interior as "private, or sacred, space" (6). Indeed, in the fear of total absorption by the machine, "any fantasy of organic integrity is lost" (7). By acknowledging the interramification of technology and the lived body, bodily integrity is undermined, and the desire for wholeness is figured as "a kind of reaction formation to this instability" (113). Biotechnical bodies -- cyborgs -- are marked by a radical contingency the likes of which are disavowed through the dream of a stable, original, self-identical body, be that a purely organic body or, at the other extreme, AI's dream for an all-embracing "programmable matter" (114). Even the Visible Human Project deploys a similar fantasy of integrity or wholeness, seen in its "clichés of origin" and "Genesis iconography" (e.g., Jernigan is referred to as "Adam," and his female counterpart, "Eve").

<8> Dreams of bodily integrity are perhaps inseparable from that subjective integrity that we believe defines us a human. To be human is to be distinct, not just genetically (how distinct are we from chimpanzees, for instance?), but along other less quantifiable axes, such as value or worth. A human life is meant to *count* as something; its rhetorical value is often priceless. But if the body is inseparable from the technological, what horrors arise when we imagine our body entirely replaced by other, more reliable, hardware? Does "life" or human value exceed the sum of these parts? Is subjectivity itself -- our uniquely reflexive nature -- merely epiphenomenal?

<9> While these types of subjective anxieties haunt her text, Waldby is more at home discussing the socio-political stakes raised by the Visible Human Project and similar technologies. She has genuine concerns over the instrumentalization and commodification of the body, and fears that it will be translated into what Heidegger calls "standing reserve" (*Bestand*), as pure means standing at the disposal of technical networks of production. This "standing reserve" she calls "biovalue," defined as "a surplus value of vitality and instrumental knowledge" (19), appropriated by networks and able to be deployed toward myriad ends. She worries, too, that biovalue is produced through the hierarchization of bodies measured by their social and market value, from the dispensable body of the condemned (Jernigan), to those wealthy, Western bodies these technologies will enhance and preserve. In a Foucauldian vein, she brings to light the history of anatomical studies, the violence of anatomical sacrifice, and the production of biovalue as historically contingent upon penal and sovereign power. However, the implications of her social study are never really brought home to the individual subject. After all, although this social history has some perhaps incalculable influence on the subject, it alone cannot account for our subjective anxieties.

<10> While the posthuman is, for Waldby, a "critical moment," she is nevertheless ontologically committed to its techno-genetic networks; consequently, any representation of the human will be incomprehensible outside of those very networks that both support "life" and proffer the sole terms whereby it will be recognized. The

"critical moment" is without beginning or end, robbing us of a critical outside. The terms of the Visible Human Project, along with other similar recent technologies, are eerily self-referential. The images "are not simply re-presentations of pre-existing objects but rather...images or trace systems which are in-themselves technologies, able to effect transformations in the bodily tissues they seem only to represent in the space of the screen" (27). Nature and technology, organics and informatics, are mutually implicated, this much is clear for Waldby. But since the border between these two realms is permeable, there is no assurance that what exists on one side of the screen is not, in some incarnation, able to pass over to the other side. What sort of posthumous "life" does Jernigan enjoy? What is the "life" of artificial life? While Waldby acknowledges our anxiety and the phenomenon of a technological "uncanny," she is at a loss to explain them, and she seems frustrated by the desire to do them justice. At times she dismisses them, and at others, they take on a sublime grandeur that refuses to be questioned -- much like the final moment of death. Even if this moment is becoming more elastic, less precise, is postponed or otherwise extendable through "life"-support systems, there is nonetheless some sense that this is (still) an ultimate threshold, when "subjectivity drains away" (162) -- spoken here as if subjectivity were somehow added to some material infrastructure.

<11> These are moments of constitutive doubt, for Waldby. For, in these moments the body enjoys its own recalcitrant logic, refusing absorption into technical networks. "The living body is excessive, unpredictable, organised through unquantifiable forces of meaning and desire," she eventually admits, "as well as complex, nonfunctional kinds of organic drive" (144). I wonder if we might not nourish this doubt for a moment, and find here in this troubled place of the body not just a refusal of technicity but a subjectivity constituted by a *failure* to know and to control -- a subject no longer swayed by humanism's dream. Here life opens onto possibilities for other forms of excessive embodied relationships -- libidinal, hysterical, in joy, in illness and anxiety, unconfined to a particular space, unpredictable in their transformations. And life means precisely having such possibilities, having such possibilities to be. Waldby comes close to this figuration of subjectivity, but these moments of doubt remain undertheorized. Are they, then, akin to some subjective interior, some depth, which is at least potentially translatable into informational surface mappings? Or is this desire no more than a warmed-over humanist sentimentality, a nostalgia? I like the way Waldby complicates our cozy recourse to old-fashioned humanism by ascribing a similar desire to the virtual bodies her book resurrects: "Each time the VHP data bodies are summoned from the data banks they seem to me to carry this sense of latent force, the *desire* to cross back from the space of digital afterlife to which they have been committed..." (155, emphasis mine). These virtual bodies are, like their organic counterparts, similarly uncontainable, similarly transcendent and transgressive. But I would argue too similar; the analogy is too loose. Like the monster in Shelley's *Frankenstein*, these virtual bodies are caught between life and death. They are uncanny, ambivalent, and in moments of doubt Waldby admits they enjoy an "absent presence" and seem to represent an "identity lost but not erased" (57).

<12> For me, Waldby's *The Visible Human Project* succeeds in the very moment it fails, for she fails to dispel the doubts that haunt her text much in the way that the specter of "life" haunts the Visible Human Project itself. These doubts, these specters, refuse articulation, and in so doing, refuse to be co-opted by yet another technological network. This is what makes her book so thought-provoking. Happily, this book shows that some people in the sciences are beginning to question the larger ontological implications of their projects, as well as the implications these technologies have on human values, human life. This book is marketed as "science studies/cultural studies," leaving the question of what constitutes "life," "technology," or larger questions of "the sacred" to philosophers or poets.

<13> Waldby remains ensconced in a technological paradigm, where human beings are biotechnical assemblages, and where technology furnishes the only terms by which biology has any intelligibility, any value. "The Visible Human data," she says, "set up living bodies so that they become traversable and operable according to the spatial logics of computer vision" (109). At stake here is the originality of the flesh, the flesh, the human body as localized in time and space, as irreducible, unreproducible, the source and ground, the cause and referent of that body's multiple representations. For Waldby, it is not just the body itself, but the category "human" also relies on the technologies by which it is "invented": "the very category 'human' owes its *coherence* to technologies which configure bodily morphology according to the *medium-specific* qualities of the archive itself -- the book, the photographic archive, the computer archive and so forth" (161, emphasis mine).

<14> But what if the body enjoys a certain incoherence? While the book, the photograph, and the data archive all might be said to produce, rather than re-present, what they document, they are by no means as equivalent as Waldby here suggests. Unquestionably, these technologies re-present, produce, and allow for techno-human manipulation of their productions in very *different* ways, sustaining very *different* objects. If Waldby were to perform a close reading of Heidegger, whom she invokes, I think she would see that the language found in the book -- and in her book -- must fail as a *technè*, a skill or technical device, fail precisely in those moments where photographic and computer archives triumph. Herein lies the success of Waldby's project. The language of the book conveys something about human subjectivity and embodiment insofar as that language refuses to yield its subject to manipulation in the ways that computer and photographic technologies do. The language of the book serves as a metaphor for human life, and the metaphor itself as a failure of technicity. For Heidegger, language is not at our disposal; rather, we are spoken by *it*, produced by *it*. And so, the category "human" owes its coherence to the failure of language to exhaustively and faithfully capture human life, and that failure paradoxically affords the most faithful account, ensuring that the very terms of that life are repeatedly and variously called into question.

<div align="right">Stuart J. Murray</div>