

THE WORLD, THE FLESH AND THE DEVIL: VARIETIES OF POSTHUMANISM FROM J D BERNAL TO STS

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In the early 1990s, I actually thought I invented the word ‘posthumanism.’ Then I discovered that it was already current in critical theory. Then I discovered that it was the name of a movement imagining radical transformations of the human form. I’ll try to sort some of this out today. moving from theory to futurology and ending with politics.

(1) POSTHUMANISM IN STS

So, I can start with my own field, science and technology studies. I find it useful to call my own work—like that of Donna Haraway, Bruno Latour, et al—‘posthumanist’ to distinguish it from the ‘humanist’ mainstream social sciences and humanities. At issue here are questions of how we centre our analyses. Humanist stories are centred on the human. Something specific to us is pictured as the centre of the action, the wellspring of history, from which all else derives. The sociology of scientific knowledge, for example, aims to explain variations in scientific knowledge in terms of human goals, interests and social structures. Something human and social thus stands at the centre and explains something else, here knowledge of the natural world. My work in the history of science convinced me that this centring is misleading. My conclusion was that all the humanist variables you might care to name are themselves liable to transformation in scientific practice; we don’t call all the shots. I looked at the invention of an instrument called the bubble chamber in the 1950s by Donald Glaser, who later got the Nobel prize for his efforts, and it was clear that on the path to a functioning instrument Glaser’s goals and interests and the social structure of his group all changed significantly. He wanted to do small science in cosmic-ray physics and ended up doing big science at particle accelerators. And nothing social explained that change. It was the upshot of his struggles with the material world, finding out what different material set-ups would do, in what I called a dance between a human agent, Glaser, and various non-human agents, different configurations of apparatus. My analysis was thus not centred on any human variables. It was, so to speak, symmetrically decentred between the human and the nonhuman. It was posthuman in just this sense.

Philosophically, I think posthumanism is simply right. And I can just add a couple of points before moving on. First, I think humanism still occupies the mainstream of the disciplines because it is dualist. It makes a Cartesian split between the human and the nonhuman, and sets the former above the latter. It's about what's so great about us. And this sort of human exceptionalism is, as Latour has pointed out, the hallmark of modernity. So, to be posthuman is to be nonmodern, is to be confined to the margins of the university (and, actually, to be completely invisible in schools). Second, the sort of decentring one finds in the history of science happens emergently in time. Scientists do not know how the material world will perform; they have to find out. Neither do they know in advance how they will react to what will turn up. There are no pre-existing explanatory causes. Instead, what one finds is an emergent evolutionary process in which all the elements are unpredictably mangled over time. I'll come back to that.

(2) **CYBORGS**

Being in the material world changed Glaser—his goals and interests, the social structure in which he worked, his social status. But only in a relatively distanced fashion. He would set some bit of apparatus up, and then stand back with a movie camera in his hand to watch what it would do. And he got the Nobel Prize for making this division between himself and the world quasi-permanent, for making the world more dual, for constructing a free-standing machine that would work autonomously when he wasn't around, that other physicists could use as a tool. And, from another angle, it is clear that despite all the changes, Glaser himself was the same sort of entity at the end of this process as at the beginning, a humdrum modern physicist. Today we need to think about more intimate couplings of the human and the nonhuman, signalled by Donna Haraway's use of the word 'cyborg'—more direct incursions of the nonhuman into the human. One thinks here of transformations of human bodies—artificial limbs, prosthetics, for example. Clearly these transform us performatively. Oscar Pretorius, to pick a name at random, could not run at all without artificial lower legs. Or think of psycho-active drugs—Prozac or LSD. These act to transform our inner states or selves. The question such examples raises is: what acts? And the answer is: a human/nonhuman hybrid, a cyborg, Pretorius plus his artificial legs; Aldous Huxley plus his mescaline. And, of course, once we start thinking this way, it becomes clear that we are all cyborgs. What acts before you now is me plus some cornflakes, several cups of coffee, quite a few cigarettes, some extra quantity of adrenalin in my blood, all the bacteria in my body and the air I breathe—and echoes of last night's drinking with John and Regenia.

Clearly there is some relation between a recognition that we are all cyborgs and the posthumanist theory I just sketched out. Both undermine any dualism of people and things by emphasising instead how strongly we are coupled into the nonhuman world. And yet this gets complicated in interesting ways.

(3) **POSTHUMANISM AGAIN**

Posthumanism as a theoretical perspective interests a handful of academics. Cyborgs, under whatever name, interest an enormous number of people. All sorts of scientific and technological changes are making our bodies and minds appear more plastic and amenable to transformation every day. If we have always been cyborgs, still the speed and scope of cyborg transformations is accelerating. And, of course, there is an intellectual and social 'posthumanist' movement that depends on and multiplies that fascination, and that I want to think about in the rest of this talk. The idea of this sort of posthumanism is that we are already becoming significantly 'transhuman,' different sorts of people from what biological evolution made us, and that in the foreseeable future we will become 'posthuman,' meaning that we will have said goodbye to our evolutionary inheritance and the limitations this imposes on us. The odd and confusing thing is that this sense of posthuman doubles back into an intensified humanism. How does this go? We need some examples.

The first recorded use of the word 'cyborg' was in a 1960 paper by Nathan Kline and Manfred Clynes entitled 'Drugs, Space, and Cybernetics: Evolution to Cyborgs.' [Psychophysiological aspects of space flight (1961): 345] The authors were interested in the problem of human survival in outer space. The obvious approach is to take our usual environment with us into outer space, with the astronauts living in a pressurised capsule in an earth-like atmosphere. Very imaginatively, however, Clynes and Kline speculated on various engineering, chemical and biological transformations to our bodies that would dispense with all this clunky engineering by making humans able to do without air, survive the pressurelessness of outer space without exploding, inhabit a featureless environment without going mad, and so on. What fascinates me about this proposal is that it envisages incredibly drastic changes of the human form but in the name of business as usual, now in the harsh environment of outer space. All of the changes were explicitly intended to act in the background of consciousness, so that astronauts could ignore them and carry on regardless. And what would they carry on doing? 'Leaving men free to explore, to create, to think, and to

feel' (reprint, p 31). Clynes and Kline thus imagine the cyborg as preserving these special human mental qualities unchanged in a drastically changed environment.

So this is where things get complicated ontologically. On the one hand, Clynes and Kline imagine very radical transformations of bodies; at the same time, these transformations seek to preserve the facet of humanity that makes us exceptional, especially our ability to think. Cogito ergo sum: we are back to Cartesian dualism. This is what I meant by saying that cyborgs and theoretical posthumanism sit in a strange relationship. The very word 'cyborg' invites a posthumanist analysis of reciprocal transformations of people and things; but our dominant imaginings of cyborgs are transformations deliberately contrived to maintain our dualist cognitive essence. They remain on the mainline of modernity and the Enlightenment.

The preservation and even augmentation of our cognitive essence is, I think, the hallmark of the contemporary posthumanist movement, but I'll leave it to others to go into that, and instead I want to travel back in time and talk briefly about a little book published by J D Bernal in 1929 called *The World, The Flesh and the Devil: An Enquiry into the Future of the Three Enemies of the Rational Soul*. Bernal announces this as an exercise in scientific futurology, his best guess of what the future will look like on the basis of contemporary science, and it reads like a prescient blueprint for contemporary posthumanism, even adumbrating what we now call nanotechnology and biotechnology. Under the heading of 'the world' Bernal looks forward to advances in engineering, sharing with Clynes and Kline the prospect of outer space as the final frontier. Under 'the flesh' he anticipates changes in the human form. And under 'the devil' he discusses the regrettable features of humanity that might hold us back from realising this future. What interests me most is that, like Clynes and Kline, the drastic changes Bernal imagines again leave our cognitive essence untouched.

At the beginning of his essay, he simply states, without any argument, that 'the complex we are concerned with . . . is the human mind' (3). Talking about life-extension and the posthumanist fascination with immortality he remarks that man 'will then be forced to decide whether to abandon his body or his life. After all it is the brain that counts, and to have a brain suffused by fresh . . . blood is to be alive—to think' (10-11). Imagining we have left the planet, he remarks 'As the scene of life would be more the cold emptiness of space . . . the advantage of [beings] containing no organic material at all . . . would be increasingly felt' (19). We are left with brains in vats—'inside the cylinder, and supported very carefully to prevent shock, . . . immersed in a liquid of cerebro-spinal fluid, kept circulating over it at a uniform temperature' (12)—wired into sensors and motor organs and even one another.

In Bernal's vision, then, the upshot of cyborg transformations of the human form is to make Cartesian dualism true. The mind has finally been separated from the body, and the body has been discarded as an irrelevant source of hassles and limitations. And, as Katherine Hayles points out in *How We Became Posthuman*, this sort of privileging of the brain, mind, thought and cognition at the expense of our bodies remains a hallmark of posthumanist thought.

This where I wanted to get to. Posthumanism as a movement shares with posthumanism as a theoretical perspective an idea that bodies and minds are malleable and interconnected, but the posthumanist imaginary is one of transformations that leave the cognitive part of the human untouched and, ultimately at least, disconnect it from matter. In this sense, posthumanist futurology remains smack on the mainline of modern humanism and the Enlightenment privileging of reason.

(4) EXPERIMENTAL POSTHUMANISM

As Michael Hauskeller can tell us, at the moment public debate is entirely dominated by Bernal-style posthumanism and ethical arguments about whether we should stay the same or change, with the proponents of change simply echoing Bernal's rhetoric: it is our intellectual duty to move in a posthumanist direction; only the devil, benighted nonmodern cowardice and reaction, can get in the way. But we can make things more interesting. In 1930, the year after Bernal published *The World, the Flesh and the Devil*, Olaf Stapledon published a novel called *Last and First Men*, imagining the future of the human race in a series of numbered epochs extending into the far future. The Seventh Men, as he calls them, take up bioengineering, but interestingly they do not follow Bernal's blueprint and privilege the brain. Instead they give themselves wings and take to the skies. Even more interestingly, their aerial existence transforms their psyches. Instead of being obsessed with words, thought and knowledge, life in the middle air becomes an artform centred on the creation and performance of beautiful social dances in three dimensions. And what strikes me here is that this imagination of the future is both a cyborg dream and a truly posthumanist one, a nondualist one, in my theoretical sense. It recognises the coupling of mind and matter and that changes in one emergently elicit changes in the other, and finds this worth exploring. We could call Stapledon's dream an experimental posthumanism, in contrast with Bernal's teleological version.

Though it figures not at all in public discourse, I find this sort of experimental posthumanism very interesting, and it is easy enough to multiply examples. I have always liked science fiction, and thinking about this talk a lot of my past reading has re-arranged itself in my head. I have spent ages trying to find the citation to another English novel from the 20s or 30s in which the hero travels to Mars where (a) the environment turns out to be drastically instable, which induces (b) drastic changes in his body; he looks and performs differently in different places, and also induces (c) drastic changes in his inner being and moral fibre. Unfortunately I couldn't find it. But I did just reread Philip K Dick's 1960s novel, *Do Androids Dream of Electric Sheep?* which begins with a couple arguing about settings for their mood organs—technological devices which reset one's mood. In a sort of arms race, the wife threatens to set hers to 'maximum venom' and the husband counters with the same, until they realise they'll just end up trashing the place. At the other pole, another device called an empathy box facilitates spiritual communion with a man called Mercer. Dick, too, imagines cyborg futures for the human race which entirely escape the modernist imaginary. Closer to the present, J G Ballard was the poet of experimental posthumanism. In *The Drowned World*, global warming elicits altered states: visions and drum-beats of a throbbing black sun which drive people to set off on foot for the Equator.

And, of course, we don't have to stick to fiction. We can find seeds of an experimental posthumanism in the here and now. Wolfgang Schivelbusch documented beautifully the emergence of what he called panoramic seeing which accompanied the development of the railroads, a whole new way of grasping the environment that went along with the new technology. James Olds enabled rats to electrically stimulate what he called the pleasure centres of their brains—something that they evidently preferred to everything else, including food and sex. Note that this is a vision of the brain as performative; not the cognitive brain of teleological posthumanism. Imagine transplanting the technology from rats to us: there's a lot of oney to be made there. In Eastern traditions, meditation and yoga aim to quieten the mind, to put it in its place, eventually dissolving its grip on our being and the modern self along with it. Psychedelic drugs, sensory deprivation tanks . . .

Life as airborne art, pulsating black suns, new ways to see, unending pleasure, the loss of the self—I take these as markers of a future space that entirely escapes current modernist discourse, and that an experimental posthumanism might explore endlessly. We could do it, now more than ever. Why don't we?

(5) THE POLITICS OF POSTHUMANISM

I think we should take the possibility of experimental posthumanism seriously. Why? First because we might become something more interesting and fun than we are today—a species that I find vaguely shameful.

Second, switching back into a more philosophical mode, because it would contextualise and denaturalise current debates centred on teleological posthumanism. It would show that we don't have to conceive our future as organised around the cognitive brain if we don't want to. It would give us something new to argue about.

Third, because teleological posthumanism is wrong. To go back to the start, my work on the history of science persuaded me that we aren't in control. You can't always get what you want. Something will turn up if we embark on the path to Bernal's brains in vats, but not what we expect—that's the whole point about emergence. Whether we like it or know it or not, we are always on the path of experimental posthumanism. But it makes a difference if we recognise that. A self-aware experimentalism could go in all sorts of directions that would never occur to our humanist posthumanists. So it matters how we imagine our future; ontology makes a difference.

And fourth, there's another thing. Two weeks ago in Amsterdam, I heard a talk by a Dutch theoretical physicist and Nobel prize winner, Gerard 'tHooft. I admire his technical work in particle physics enormously, but his talk was about possibilities for colonising the solar system, and it struck me that he kept on repeating this word 'colonising' because I had just been walking around the city and thinking of all the colonial wealth that had condensed there, and what colonialism was like. Then I reread Bernal's 1929 essay and noticed that he too—in London, at the height of British colonial power—talked about 'colonising' space. Colonisation might be a bit of a dead metaphor these days, but it wasn't then. Some of the authentic flavour of colonialism still comes through in the posthumanist literature. Colonisers seize on some territory, exploit it for their own ends, and get rid of whatever gets in the way. We could see the posthumanist yearning to get rid of the body as the symptom of an inner colonisation of our being. In his essay, Bernal ponders on the idea of a bifurcation in the human race. The thinkers, the scientists, 'the aristocracy of scientific intelligence' (22) as he calls them, plunge into posthumanist modification by becoming brains in vats, and they escape from the unscientific and unmodified others to live in space. At the same time, they continue to care for those left behind. 'The world might, in fact, be transformed into a human zoo, a zoo so intelligently managed that its inhabitants are not aware that they are there

merely for the purposes of observation and experiment' (24). The colonised as animals cared for in a human zoo is, of course, the cleaned-up fantasy of colonialism. It is also part of the plot of Huxley's dystopia, *Brave New World*, published in 1932. A variant sustains the plot of *The Matrix*. We know what real colonies were like: *The Heart of Darkness—Apocalypse Now*—'I love the smell of napalm in the morning.' We should not be too quick to let colonial fantasies structure our imagining of a posthumanist future.