

Because I am an athlete – a climber, specifically – I troll the Internet regularly for advice on eating and training. Around early 2014, in the midst of these forages, I started noticing the word “biohacking” appearing on all sorts of articles: articles about green smoothies, about minimizing gluten intake, about the benefits of a paleo diet, about the benefits of a vegan diet, about putting grass-fed butter in your coffee. “Hack your health!” (Vennare); “Nutritional biohacking for peak experience!” (Strong); “Biohack yourself: transcend your limits!” (Strong); “Podcasts to take your biohacking to the next level!” (Nightingale).

In this essay, I’m concerned with mapping a tension between very different iterations of biohacking, which is the practice of manipulating biology through engaging biomolecular, medical, and technological innovations. There is, on the one hand, a form of biohacking that engages in corporeal manipulation in a manner that understands the body as an assemblage, as intimately interwoven with other (human and non-human) actants, and cognizes embodiment in terms of a becoming that is not fully predictable nor entirely controlled by a sovereign human agent. On the other hand, there is a form of biohacking that is fully invested in Western technoprogresivist fantasies of transcending the limitations of the human body, in overcoming (through medical, technological, and nutritional means) disease, frailty, weakness, and – ultimately – human finitude itself. Both of these iterations of biohacking have their roots in cyborg theory, but manifest as radically divergent understandings of cyborg embodiment. The former is deeply invested in a posthumanist ethics; the latter underwritten

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by a transhumanist mission. Here, I follow Cary Wolfe’s distinction between posthumanism and transhumanism. For Wolfe, as for me, posthumanism names both “the embodiment and embeddedness of the human being in not just its biological but also its technical world” as well as a “historical moment in which the decentering of the human by its imbrication in technical, medical, informatic, and economic networks is increasingly impossible to ignore” (xv). By contrast, transhumanism is an “extension of the fundamental anthropological dogma associated with humanism” insofar as “the human” is “achieved by escaping or repressing not just its animal origins in nature, the biological, and the evolutionary, but more

generally by transcending the bonds of materiality and embodiment altogether” (xiv, xv). This investment in the power of the human to transcend the body should be understood as an “intensification of humanism” (xv); it is not, in the least, informed by opposition to anthropocentrism or interested in troubling fantasies of human sovereignty (over the body, the “natural” world, or non-human others).

I revisit Donna Haraway’s “A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century” in order to emphasize her theorization of these conflicting understandings (and manifestations) of cyborg embodiment. She writes:

From one perspective, a cyborg world is about the final imposition of a grid of control on the planet, about the final abstraction embodied in a Star Wars apocalypse waged in the name of defence, about the final appropriation of women’s bodies in a masculinist orgy of war. From another perspective, a cyborg world might be about lived social and bodily realities in which people are not afraid of their joint kinship with animals and machines, not afraid of permanently partial identities and contradictory standpoints. (295)

Here, Haraway neatly parses the tensions that Wolfe is also keen to theorize: between transhumanism and posthumanism, between fantasies of immortality, bodily transcendence, and superhumanity and the affirmation of relationality, co-constitution, and collectivity with human and non-human others. Examining the way Haraway’s work on cyborgs has been read, received, and redeployed, I discuss the collective intellectual tendency to sidestep her theorization of the violence implicit in cyborg embodiment, and argue that to understand the political and ethical dimensions of contemporary posthuman forms of embodiment we must grapple with this violence, much of which is rooted in ongoing histories of colonization.

Beatriz Preciado’s recent *Testo-Junkie* is a text that theorizes posthuman embodiment in a manner that is attentive to the colonial roots of contemporary pharmacopower – a term that

Preciado coins to name the biomolecular control of sexual and gendered subjectivity. This attention to these colonial roots reveals the Janus-faced nature of cyborg theory: the simultaneously resistant and oppressive circuits through which posthumanity is routed. S/he explores the political terrain that produces certain subjects that are able to self-determine gender and avail themselves of the biomolecular prostheses on the market, while others experience forced determination, utilized as human test subjects for the profit of big Pharma. I ask after what it means to remind ourselves of the modern-colonial violence in which contemporary understandings of the posthuman are rooted. If we bear this in mind, how does that shift or reorient efforts to demedicalize gender transition, as well as efforts to democratize access to technologies of self-making more broadly? How do we do this without committing ourselves to the kind of troubling cyborg fantasies we see at work in the mainstreaming of biohacking?

Harkening back to those Internet-based sources I mentioned at the outset: it was strange to encounter the rhetoric of biohacking in such mainstream, heavily commoditized sites. I was familiar with the term, having been interested in cyborg theory, interspecies connections, the blurring of boundaries between nature and artifice, human and machine, just like any good genderqueer science-fiction-loving feminist. I was preoccupied with the subversive potential of posthumanist forms of embodied becoming – that is, forms of embodiment that resist anthropocentrism and individualist understandings of self-making, and instead understand the body as an assemblage produced by and through interactions with other agents, both human and non-human. I had encountered biohacking because I was interested in thinking about how understandings of gendered embodiment shift in milieu wherein the technologies of gender transition are at least somewhat accessible.

In other words, I understood biohacking as one method for altering biological composition in the gendered directions one desires, and considered taking hormones or altering muscularity

through the use of anabolic steroids as forms of biohacking with gendered consequences. Illegality, or acting through networks that aren't official or institutionalized, is central to the ethos of biohacking. As a form of hacking, it entails the illicit acquisition of material. This acquisition is democratizing because it bypasses systems of bureaucratic gatekeeping and institutional regulation and thus expands accessibility. Accessing testosterone or estrogen through networks beyond the medical industrial complex in order to avoid the red tape and financial cost of appointments with specialists to determine one's fitness for gender transition is an example of biohacking, and one I will return to later in this essay in my discussion of Preciado's *Testo-Junkie*.

Before, I'd been the only person in my family interested in the phenomenon of body modification through biohacking. Now, my mother was calling me up extolling the existential virtues of coconut oil. My brother was telling me about the importance of balancing alkalinity in the body (he's a climber, too). They were obsessed with avoiding xenoestrogens, talking about hitting the "reset button" on their bodies, carefully monitoring their sleep cycles with iPhone apps. All of a sudden, they were *into biohacking*, but they seemed to understand it differently: it was, for them, a means of enhancing health, cheating death, or (minimally) prolonging one's lease on life. Moreover, there was nothing illicit, illegal, or radically democratizing on the face of it. What is being hacked, bypassed, transcended – or at least what is imagined as hacked, bypassed, or transcended – is the finitude and fragility of the body itself.

The futural promises made in the literature on nutritional biohacking are grandiose, more extreme than any dieting article in *Cosmo*. It's the "Biggest Loser" gone cyberpunk. "Faster, Stronger, Smarter, Sexier, Better" reads a digital byline at the popular biohacking website Bulletproof Exec, which also uses this gem of an overwrought catchphrase: "Supercharge your body. Upgrade your brain. Be bulletproof." I can think of no better example of late capitalist superhero fantasies of immortality

and hyperperformance. The site rhetorically interrogates you, as you down-scroll: "Can you really lose 100 pounds without using exercise, upgrade your IQ by more than 12 points, and stay healthy by sleeping less than 5 hours?"

The primary target for this adventure in do-it-yourself superhumanity is found in niche demographics dominated by bourgeois men. There are write-ups on biohacking in *Men's Health* and *Fast Company*, and a string of ex-pro-athletes testifying to better living through corporatized biohacking. These websites remind me an awful lot of Viagra commercials, or ads for testosterone supplements (targeted exclusively at cis-men, of course). It's nothing at all like the queer biohacking I'm familiar with: the sexual prostheses, the biomolecular negotiations we go through as we create alternative ways of being gendered, the communities of emotional and financial support we form to aid each other through transition and the often insurmountable-seeming tasks of navigating our everyday lives. The ethos, with this form of biohacking, is collaborative, deindividuated, about troubling ontological boundaries and developing a collective ethics, a kind of being-with that doesn't prioritize the liberal, individualist self. It's grounded in a posthuman ethics premised on the idea that our bodies and beings are porous, shared, co-constituted by and through the entities involved in the situations we inhabit, or that inhabit us. Of posthuman ethics, Patricia MacCormack writes:

Bodies in inextricable proximity [that is, posthuman bodies] involve a threefold ethical consideration – the critique of the detrimental effect a claim to knowledge of another body perpetrates; address as creative expressivity opening the capacity for the other to express; and acknowledgement and celebration of the difficult new a-system of bio-relations as an ongoing, irresolvable (but ethical for being so), interactive, mediative project of desire. (3)

If bodies are co-constituted, ontologically interwoven, not inviolable or neatly individuated, then there seems to be an ethical injunction to, minimally, dignify the notion that we are

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beings-in-process, continually affected and mutually transformed through contact and intimacy with the other entities in our milieu. This ethics begins with admitting, as Butler writes in *Undoing Gender*, that “we are undone by each other,” and that the fact of this undoneness necessitates thinking the subject, the “I,” as something other than sovereign, and consequently relinquishing the fantasy of molding inviolate, indestructible, idealized bodies (19).

Mainstream nutritional biohacking, by contrast, is governed by a marked disdain for corporeal connectivity and the limitations placed on living bodies by their milieu. It is shaped by an investment in the perfectibility of the body unto the point of deathlessness, and underwritten by the idea that economically privileged individuals can become the sovereign authors of their own superhumanity. It is cyborg theory gone venture capitalist; cyborg theory transformed into multi-day self-help conferences and a spate of commodities with outrageous price tags and even more outrageous claims. For example, Bulletproof sells a product called Brain Octane Oil that promises to increase brainpower and reduce brain fog “for maximum cognitive function!” (\$45.95, subscriptions available); another called “Unfair Advantage” that claims to deliver “a brand new, activated form of a cellular nutrient called pyrroloquinoline quinine” that “supercharges mitochondria” in a manner that promises to have a “profound effect on your mental and physical energy” (\$59.95). There are numerous other supplements, technological devices, coffees, teas, and other food products for sale, each of them issued replete with similarly superhuman promissory notes. My personal favorite is what is colloquially called “the Bulletproof Vibe,” which sounds like a sex toy, but sadly is just a vibrating plate mounted on a 30 Hz motor. You stand on it and it shakes you. This supposedly stretches you, works your core, improves brain function and bone density, detoxifies, and improves your immune system (\$1,495). You could also probably just do some jumping jacks.

The price-tags on these products speak to the very class-specific nature of the niche market

they’re aimed at: a tired, time-strapped elite desperately seeking a new prime of life with enough expendable income to purchase a vibrating plate and balance on it while guzzling Brain Octane Oil. There is a tension between the strain of biohacking that works as a form of democratized embodied becoming, and the strain of biohacking illustrated by Bulletproof Exec that is a merger of hyper-individualized self-help discourses and the privatized commoditization of technologies of self-making, rhetorically garbed in the promises of folks who seem like the snake-oil salesmen of late liberalism.

To some extent, Haraway warned us about this troubling commoditization of biohacking. Her initial articulation of cyborg theory was one of a general ontology, not a rarefied ontology of queer, genderqueer resistance. She was explicit about this, writing early on in the manifesto, “the cyborg is our ontology; it gives us our politics” (292). By “our,” she meant those of us operating in milieu predominately shaped by Western science and politics, living in a present molded by multiple destructive traditions – “the tradition of racist, male-dominant capitalism; the tradition of progress; the tradition of the appropriation of nature as resource for the productions of culture; the tradition of reproduction of the self from the reflections of the other” (ibid.). Haraway was very careful to make clear the unavoidability of complicity of all Euro and Westo-centric subjects – no matter how subversive or radical we fancied ourselves – in these destructive, interwoven traditions.

I didn’t remember this point about general ontology until I was rereading the manifesto while beginning work on this article. I had preferred an exceptionalist reading of cyborg ontology, one that framed it as an alternative, resistant mode of being-in-the-world, beyond liberal individualism, beyond the vagaries of capitalist exploitation, beyond gender, never realizing that this fantasy of beyond-ness was a way of directly sidestepping that initial point of Haraway’s regarding unavoidable complicity in structures of domination, expropriation, and exploitation. When I first encountered the work, I found the following phrases more

promising, more exciting, and they became the rabbit holes I burrowed in for a good handful of years.

The cyborg is a creature in a post-gender world. (292)

The cyborg is resolutely committed to partiality, irony, intimacy, and perversity. (Ibid.)

The cyborg is “oppositional, utopian, and completely without innocence.” (Ibid.)

Cyborgs are “monstrous and illegitimate; in our present political circumstances, we could hardly hope for more potent myths for resistance and recoupling.” (293)

I took those conceptual elements – post-gender, perverse, oppositional and utopian, monstrous and illegitimate – and they gradually came to weave the fabric of my understanding of the posthuman as an entity that affirms relationality as primary as it troubles the boundaries of nature/culture, self/other, male/female, and human/non-human. This kind of selective reading was, in part, a form of wish-fulfillment, as I was trying – as an intersex person with some serious scars, physical and otherwise, left from a series of bad dates with the medical industry – to develop an account of queer embodiment that played up collective resistance, that was interested in demedicalizing gender while retaining and democratizing access to technologies of gendered becoming.

I had read Haraway’s work reparatively, as Eve Sedgwick has implored us to, but I’m a little bit skeptical of my interpretation. I worry that reparative reading can turn into a self-serving, solipsistic project wherein textual elements that don’t serve our own epistemic, ontological, or ethical projects are abandoned, left by the wayside. Sedgwick has, famously, set reparative reading against paranoid reading, which she understands to be an interpretive project that consistently seeks the “unveiling of hidden violence” (140) in the text and endeavors to make clear the “hidden traces of oppression and persecution in a text” (ibid.). She describes reparative reading as a queer impulse, born of the fear that the

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broader culture is unwilling or unable to nurture and provide resources for disenfranchised subjects to keep on living, that responds to this lack of nurturance by attempting to “assemble and confer plenitude on an object that will then have resources to offer to an inchoate self” (149). Paying attention to reparative reading strategies, Sedgwick suggests, allows us to learn about “the many ways selves and communities succeed in extracting sustenance from the objects of a culture – even a culture whose avowed desire has often been not to sustain them” (149–50). This is precisely the strategy I utilized in my initial encounters with Haraway’s work, shaking the text down for whatever in it could be utilized to construct a sense of a possible future wherein gender non-conformance, perversity, and resistance to racism, capitalism, anthropocentrism, and speciesism were embraced.

But I’m worried I got carried away with the resistant potential of cyborg theory and, given the lineage of the deployment of Haraway’s conceptual vocabulary in queer and feminist theory, I wasn’t the only one. Haraway’s position as one of the integral figures in the formation of feminist new materialisms, and the centrality of her concepts – naturecultures, diffractive perception, and situated knowledges, among others – to that field has contributed richly to contemporary understandings of posthuman subjectivity, ontological entanglement and embeddedness, and the deprioritization of anthropocentrism in the formation of feminist political agendas and critiques. Her work has been enormously influential in trans studies; the editors of *The Transgender Studies Reader*, vol. 1, include “A Cyborg Manifesto” and write that

while she does not specifically address transgender issues [...] she addresses several issues of central importance to transgender studies, such as the way that “gender” is, in part, a story we tell ourselves to naturalize a particular social organization of biological reproduction, family roles, and state power. (103)

The most well-known redeployment of Haraway’s work in trans studies is perhaps Sandy

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Stone's "The Empire Strikes Back," wherein she positions the "post-transsexual" – that is, transsexual persons who are vocal about their embodied histories and refuse the politico-social imperative to pass-as-cis as a means of resisting the erasure of trans experience – as a form of cyborg embodiment. She writes that

the disruptions of the old patterns of desire that the multiple dissonances of the transsexual body imply produce not an irreducible alterity but a myriad of alterities, whose unanticipated juxtapositions hold what Haraway has called the promises of monsters – physicalities of constantly shifting figure and ground that exceed the frame of any possible representation. (232)

The posttranssexual cyborg, for Stone, is the harbinger of a promise to scramble, desirably, the codes of gender binarism and thus open up myriad possibilities for queering desire, embodiment, sexuality, and community. Feminist theorist Rita Felski has argued that the cyborg is implicitly transgendered (*sic*), and that Haraway "seeks to recuperate political agency and the redemptive promise of the future" through coding the transgender subject as a "liberating icon" representing "new and unimagined possibilities in hybrid gender identities and complex fusions of previously distinct realities" (568). A promising monster, indeed. In a slightly divergent trajectory, Jasbir Puar has taken the final sentence of "A Cyborg Manifesto" as the title of her 2012 article "I'd Rather be a Cyborg than a Goddess: Becoming-Intersectional in Assemblage Theory" and positioned Haraway's work as a central component within a feminist genealogy that enables Puar to understand intersectionality as a form of assemblage that moves beyond too-simple conceptions of identity and subjectivity – a move that positions the cyborg as germinal for contemporary women and queer of color scholarship.

We couple up with Haraway's work in order to develop increasingly complex accounts of naturecultures as a means toward building coalitions, alliances, and affinities – with human and non-human actants – capable of

resisting destructive traditions, capable of envisioning and enacting life-worlds not entirely constrained by the informatics of domination. It is understandable that, motivated by these desires, some of us (myself, most certainly) have cherry-picked Haraway's most politically sexy assertions; they resonate with a kind of hopefulness, a belief in utopia, in the productivity of radical futural visions, and are informed by a faith in prefigurative politics: the idea that a new world can be built in the shell of the old. Her scholarship is revivifying, even in its skepticism.

It becomes imperative, given this tendency toward a reparative reading of Haraway's work, a style of reading emphasizing the production of pleasurable or joyful affect in the encounter between text and reader, to focus on what of her analysis is left out or minimized on account of this interpretive legacy. One of the conveniently downplayed elements of Haraway's work is her commentary on the violence of cyborg inheritance, on its rootedness in neocolonial technoprogressivism. I have found that returning to the text and finding these admonitions is troubling for readers – like me – who have spent years embracing and emphasizing the more hopeful aspects of her scholarship. I'd like to return, for a moment, to the Haraway citation at the beginning of this essay, in order to think through this phenomenon of selective writing. She asserts:

from one perspective, a cyborg world is about the final imposition of a grid of control on the planet, about the final abstraction embodied in a Star Wars apocalypse waged in the name of defence, about the final appropriation of women's bodies in a masculinist orgy of war. (295)

Haraway reiterates this point in her introduction to *The Haraway Reader*, attesting "many of the entities that command my attention [...] were birthed through the apparatuses of war" (3). She goes on to critique the legacy of "A Cyborg Manifesto," claiming that "too many people [...] have read [it] as the ramblings of a blissed-out, technobunny, fembot" (*ibid.*). While I hadn't quite construed Haraway as a

blissed-out fembot, I had definitely lost touch with the aspects of cyborg theory that emphasized destructive manifestations of cyborg embodiment that are intensely complicit with cultures of dominance. I had begun to habitually overlook the implications of the fact that, as Haraway writes, “the main trouble with cyborgs [...] is that they are the illegitimate offspring of militarism and patriarchal capitalism” (293). She goes on to argue, palliatively, that cyborgs are able to be “exceedingly unfaithful to their origins” (ibid.) – but origins are origins, nonetheless. You can take the cyborg out of militarism and patriarchal capitalism, but it may prove significantly more difficult to take the militarism and patriarchal capitalism out of the cyborg.¹ And we know quite a bit about the fundamental colonial and neo-colonial violence – in the form of expropriation, exploitation, and epistemological imperialism – that undergirds contemporary militarism and patriarchal capitalism. The question for me has since become this: *to what extent are contemporary cyborg subjectivities implicated in the coloniality of being?*

By coloniality of being I refer to work by Nelson Maldonado-Torres wherein he describes the Eurocentric taxonomy at work in modern-colonial understandings of being. In this colonial taxonomy of being, Western-style scientific rationality is posited as integral to human being, and colonized subjects are constructed as lacking this form of rationality, and thus construed as “what lies below Being” (122). Maldonado-Torres refers to this rendering of beings less-than-being as the construction of “sub-ontological difference” (ibid.). This difference is produced by a coloniality that empowers certain subjects to be future-oriented, to develop an existential comportment that can invest in self-realization, flourishing, attainment of goals, the realization of some kind of ontological authenticity or fullness – a YOLO ontology of maximizing the potential of the present moment which, not coincidentally, seems an awful lot like the hyper-capitalist biohacking I opened this paper describing. This orientation to being contrasts sharply with what Maldonado-Torres, citing Fanon, refers to as the

existential reality of the *damné* (a term Fanon uses to refer to colonized subjects that translates to “damned” or “wretched,” as in “the wretched of the earth”). Of this existential reality, Maldonado-Torres writes that the “hellish existence [of the *damné*] carries with it both the racial and the gendered aspects of the naturalization of the non-ethics of war. *Indeed, the coloniality of being primarily refers to the normalization of the extraordinary events that take place in war*” (255; emphasis in original). For Maldonado-Torres, the coloniality of being refers to existences shaped by the routinization of violence and expropriation. One of the dominating characteristics of existence-in-wartime is nihilism, the futility of action, the desiccation of the future. Thus, he sketches two very different orientations to being, produced by two very distinct structural locations in a world shaped by the coloniality of power. To think the coloniality of being is, to a significant extent, to think about conditions wherein subjects are forced to navigate life in terrains shaped by the non-ethics of war. There is a way in which the valorization of the cyborg works only for those beings with the ability to exercise some degree of autonomy in their utilization of technologies of becoming. For others, features of cyborg ontology are experienced not as *posthumanizing* but as *dehumanizing*.

One can think, for instance, of the histories of forced sterilization that have affected indigenous women, poor women, women of color, and disabled women in the United States and its territories. Andrea Smith, in *Conquest: Sexual Violence and American Indian Genocide*, details the history of sterilization abuse and lab-rat treatment by medico-scientific practitioners – particularly those who worked for Indian Health Services – that has shaped the lives of American Indian women, ranging from coercive hysterectomy to the systematic failure to notify them of the side-effects of Depo-Provera and Norplant. Then there are the Rio Piedras trials of the pill, well documented by Iris Lopez in *Matters of Choice: Puerto Rican Women’s Struggle for Reproductive Freedom*, wherein poor Puerto Rican women were utilized as test subjects for the garnering of FDA

approval: because they would prove the effectiveness of the pill in areas wherein population control was posited as desirable, and because they could be instrumentally utilized to demonstrate the success of the method of daily oral contraceptive ingestion to critics who believed it would be too complicated for these women to self-administer. These instances are significant chapters in the interwoven history of contraceptive technology being utilized in the service of racist eugenics. Much of our contemporary understanding of the biomolecular operations of hormone-based pharmaceuticals stems from research of this sort, meaning that gendered self-determination through biomolecular procedures is intimately tied to forms of knowledge production built on and through neo-colonial violence.

If we're going to embrace the queer potentiality of cyborg ontology we must be simultaneously attentive to these necropolitical instances of cyborg embodiment. These examples allow us to think Haraway and Maldonado-Torres together: if cyborg ontology has become generalized in what we refer to, variously, as late capitalism, late liberalism, or Western hyper-modernity, then the origins of cyborg ontology lie deep in the coloniality of being.

Beatriz Preciado's recent *Testo-Junkie* makes clearer the terrain that has shaped contemporary technologies of gendered becoming. Johanna Fateman, in a review of the volume in *Bookforum*, describes it as an "arresting hybrid work: a philosophical treatise and a literary homage embedded in a sexually explicit drug diary addressed to a ghost" (n. pag.). The volume is structured around Preciado's ritualized practice of administering testosterone, and h/er exhaustive accounts of its effects on h/er body are interwoven with significant research on the transformations in gendered and sexual subjectivity wrought by the development of pharmaceutical extraction and mass production of hormones. The act of self-administering testosterone elicits a book-length meditation on an epochal shift in the logic of gendered being. H/er central argument, like Haraway's, has to do with a shift in general

ontology. Preciado explores gender as a posthuman phenomenon, arguing that

gender in the twenty-first century functions as an abstract mechanism for technical subjectification; it is spliced, cut, moved, cited, imitated, swallowed, injected, bought, sold, modified, mortgaged, transferred, downloaded, enforced, translated, falsified, fabricated, swapped, dosed, administered, extracted, contracted, concealed, negated, renounced, betrayed [...] it transmutes. (129)

One of the most compelling moments in the work comes near the beginning, with h/er account of the ritual of testosterone (T) administration. A couple of days after the dose, s/he writes:

An extraordinary lucidity settles in, gradually, accompanied by an explosion of the desire to fuck, walk, go out everywhere in the city. This is the climax in which the spiritual force of the testosterone mixing with my blood takes to the fore. Absolutely all the unpleasant sensations disappear. Unlike speed, the movement going on inside has nothing to do with agitation, noise. It's simply the feeling of being in perfect harmony with the rhythm of the city. Unlike with coke there is no distortion in the perception of self, no logorrhea or any feeling of superiority. Nothing but the feeling of strength reflecting the increased capacity of my muscles, my brain. My body is present to itself. (21)

S/he wraps up this affective account of h/er experience on T with a question and a declaration:

What kind of feminist am I today: a feminist hooked on testosterone, or a transgender body hooked on feminism? I have no other alternative but to revise my classics, to subject those theories to the shock that was provoked in me by the practice of taking testosterone. (21–22)

What does it mean to be a feminist hooked on testosterone, one who craves its transformative effects? What does that mean in light of our long history of rejecting biological essentialisms

and downplaying the dominant technoscientific narrative that has rendered them the factic determinants of sex difference? What lived knowledge comes from the material transformations called forth by the biomolecular intimacy of blood and T? How do we grapple with these questions, how do we make sense of this transformed terrain of what it is to be and have a gender, with how the mere fact of being gendered places one directly in contact with the transnational circuits that shape research on and the production and consumption of biomolecular agents of corporeal transformation? S/he writes that

we are being confronted with a new kind of hot, psychotropic, punk capitalism. Such recent transformations are imposing an ensemble of new microprosthetic mechanisms of control of subjectivity by means of biomolecular and multimedia technical protocols. (33)

Insofar as these “microprosthetic mechanisms of control of subjectivity” affect sex and gender – through, for instance, hormone injection, contraceptive technologies, anti-erectile dysfunction pharmaceuticals, or the solicitation of sexual affect by Internet porn – they operate as part of what s/he calls a “pharmacopornographic” regime. The term pharmacopornographic refers, according to Preciado, to the “processes of biomolecular (pharmaco) and semiotic-technical (pornographic) government of sexual subjectivity” (33–34). Preciado’s emphasis is not on the liberatory potential of posthuman subjectivities but on the proliferation of mechanisms of control enabled by the generalization of cyborg ontology. In the pharmacopornographic era, technoscience becomes established as a hegemonic cultural discourse and practice because it works as a “material-discursive apparatus of bodily production,” transforming “psyche, libido, consciousness, femininity and masculinity, heterosexuality and homosexuality, intersexuality and transsexuality” from concepts to tangible realities that manifest in “commercial chemical substances and molecules, biotype bodies, and fungible technological goods managed by

multinationals” (34). Preciado, further clarifying the dizzying nature of this transformed landscape of gendered embodiment, proffers that

the success of contemporary technoscientific industry consists in transforming our depression into Prozac, our masculinity into testosterone, our erection into Viagra, our fertility/sterility into the Pill, our AIDS into tritherapy, without knowing which comes first: our depression or Prozac, Viagra or an erection, testosterone or masculinity, the Pill or maternity, tritherapy or AIDS. (34–35)

The pharmacopornographic era is marked by the literal conversion of concept to product, a commoditization of multivalent, opaque, perhaps even ineffable phenomena. Gender becomes literally encapsulated, as does arousal, sadness, content. The effects of this commoditization are diverse: at the same time as gender floats ever further away from the ostensible constraints of birth sex, access to technologies of gendered becoming are increasingly regulated. Only certain subjects are able to actualize technologies of transition in fully legal, monitored ways: those of us who are moneyed, insured, urban-dwelling, and have access to trans-supportive persons, agencies, and institutions. We are being forced to grapple with gender not as some spiritualized essence, a strictly *social* construction, or an internally felt sense of self to be either closeted or disclosed, but as a product of “*sexdesign*,” a curated or imposed (usually, a bit of both) amalgam of circulating, mobile commoditized production that becomes *dissolved into* the body, inseparable from it, productive of it – not simply *used* by the body, which would presuppose a firm division between corporeality and the products at work in the fabrication of gender (35).

Which prompts the question: how did we get to this moment? Historiographically, Preciado submits that pharmacopornography has “lines of force rooted in the scientific and colonial society of the nineteenth century,” although “their economic vectors become visible only at the end of WWII” (33–34). S/he documents,

drawing heavily on the archaeology of sex hormones written by Nelly Oudshoorn, how hormones came to be theorized in the early 1900s, in a context of increasing transnational information and product exchange whose flows were determined by colonial vectors of exploitative trade in resources (human and otherwise), “according to an early form of information theory” (158). London-based physician Ernest Starling and his brother-in-law, William Bayliss, coined the term “hormone” in 1905 and conceptualized it as a kind of chemical messenger, independent of the nervous system that functioned as a carrier pigeon in the bloodstream, flitting between organs, delivering bits of information that work to elicit corporeal transformation and influencing pre-cognitive affect. Their research, while centered on human subjects, was significantly indebted to slightly earlier work performed by Charles-Edouard Brown-Séquard, a citizen of the French colony of Mauritius and founder of “organotherapy.” This mode of therapy involved intense interspecies connectivity (not unlike contemporary hormone therapies such as Premarin, a conjugated estrogen made from the urine of mares) insofar as extracts from the testicles of guinea pigs were posited as the key to “eternal youthfulness and vigor for men” and “potions containing extracts of guinea pigs ovaries were used to treat various forms of uterine disease, as well as cases of hysteria” (155). Proto-hormone therapies based in animal research were also key in the careers of Starling and Bayliss; their discovery of hormones was based on research involving the vivisection of dogs – a practice ill-received by anti-vivisection activists, but one which was found to be fully legal in the United Kingdom on account of Starling and Bayliss having cleared the proper licensing mechanisms that enabled them to perform such procedures. Bayliss even sued the National Anti-Vivisection League for libel (and won).

Preciado and Oudshoorn both argue – rightly, I think – that the discovery of hormones heralded a massive epistemological transformation in how embodiment is understood, as well as a massive ontological transformation

regarding both what bodies *can do* as well as what *can be done with* bodies. The ensemble of practices that led to the isolation, extraction, and production of hormones established “the first regular trafficking networks of biological materials among gynecologists, laboratory researchers, pharmaceutical industries, prisons, and slaughterhouses” (Preciado 163). What this means, for Preciado, is that the act of taking testosterone implicates h/er in a series of posthuman becomings situated in an often-violent web of exchange. S/he writes:

Each time I give myself a dose of testosterone, I agree to this pact. I kill the blue whale; I cut the throat of the bull at the slaughterhouse; I take the testicles of the prisoner condemned to death. I become the blue whale, the bull, the prisoner. I draft a contract whereby my desire is fed by – and retroactively feeds – global channels that transform living cells into capital. (Ibid.)

The history of hormone research is a rich example of what Mel Chen has called *trans-substantiation*, a term they use to index exchanges across the bounds of the human/non-human that “extend beyond intimate coexistence” in that they involve “not only substantive exchange, but exchange of substance” (129). To ingest hormones is, in one form or another, to be implicated in processes of trans-substantiation, engaged in exchange of substance with non-human animals. This is, of course, an uneven exchange, as the human and non-human animals utilized in the research and production of hormones are positioned much lower within what Chen has called the “animacy hierarchy,” aligned more closely to the necropolitical, with more intensely circumscribed agency, much less able to exercise a degree of autonomy in terms of their becoming (2).² It is important to heed Chen’s articulation of the function of racialization within animacy hierarchies, which draws on the very long Eurocentric legacy of entwining non-white racialization with bestialization, manifest most vividly in those “pseudo-Darwinian evolutionary discourses tied to colonialist strategy and

pedagogy that superimposed phylogenetic maps onto synchronic human racial typologies, yielding simplistic promulgating equations of ‘primitive’ peoples with prehuman stages of evolution” (102). The construction of colonized and neo-colonized subjects as sub-ontological always carries with animality, is always implicated in hierarchies of animacy or liveness that work to justify the instrumentalization of the bodies of said subjects through placing their capacity for rational, agentic action under skepticism. Inquiring after how these hierarchies of animacy shape the protocols of medico-scientific research and pharmaceutical production is necessary if we are to have a full picture of the colonial roots of contemporary pharmacopornography.

Examining the colonial roots of the pharmacopornographic era is a way of historicizing the contemporary disjunct between transhumanism and posthumanism. It vividly calls our attention to the racialized and gendered geopolitical bifurcations that produce a small handful of entitled, enfranchised subjects who engage biological modification to overcome human finitude and frailty, to easily mold and mutate corporeality in the direction of their idealized visions of the self-surpassing human, while others find themselves systematically prevented from accessing the technological, medical, and scientific procedures that would enable them to lead more livable lives, whether those come in the form of gender-confirming medical treatment, antiretroviral treatment, or forms of birth control with minimal deleterious side-effects. As we develop and refine accounts of posthumanity that attune us to the intimate imbrications of biology with multiplicitous human and non-human actants, and develop anti-anthropocentric ethics that are companionate with this reconsideration of ontology, it behooves us to remain focused on minoritized subjects who become utilized as research material and labor power for medico-scientific and technological innovations while simultaneously robbed of the means to engage these innovations with a relative degree of agency.



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disclosure statement

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notes

1 Dillon’s work on the centrality of cyborg embodiment to contemporary Western militarism is an excellent rejoinder to valorizations of cyborg ontology that ignore its embeddedness in and indebtedness to military technologies.

2 For an excellent discussion of how this consignment to the necropolitical works for non-human animals, particularly those forced to reside in factory farms, see Stanescu’s “Beyond Biopolitics.”

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