Elena Knox

Gynoid Survival Kit

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Safeguarding the sex robots

Robot sex workers, and cyborgian sex workers, will enter situations over which they will have no recognized or native control. In the course of their duties, they will be searched and screened, stripped and exposed. Possibilities of ambush and intervention are likely and real. Who will consider the occupational health and safety of a humanoid sex-work machine?

The frontiers of robosexuality present untold opportunities to diversify sex, gender, and sexuality. They are vitally important in shaping future subjectivities. Nevertheless, the first cohorts of full-body android robot sex workers will be female-presenting, with conventional visual appeal, and costly. They will be designed, tested, and consumed primarily by affluent men in 'developed' countries. Following rules of the entrenched patriarchal and socio-industrial complex, the initial robosex avant-garde will embody the fetishist representation of the gynoid (female-appearing humanoid) that is standard in both science-fiction and consumer capitalism: concomitant living computer, demure housemaid, revulsive corpse, and enigmatic erotic object.

Like living hostesses, robot hostesses are meant to make people feel pleasant, comfortable, and 'at home' – partly through possessing no real threshold of dis/comfort themselves. The machine hostess is even more proficient than the human hostess in meeting this criterion. The erotic gynoid will be *indiscriminate* in service-provision in ways that a human sex worker cannot be. Though arguably less skilled and responsive,

it will possess a work ethic that potentially 'improves' on a human's. It will call into question the boundaries of care, intercourse, and responsibility. It will be remarkable for its dissociation of discomfort from damage.

Working from direct, applied research with existing gynoid robots, my artwork series *The Gynoid's Guide to Continuous Service* takes an empathic, speculative leap into a nascent personhood and its practical hazards, imagining what 'life' is like for the sexually servicing gynoid, and emboldening her to 'love' herself.[1]

Within *The Gynoid's Guide to Continuous Service*, I have begun to create a Gynoid Survival Kit. This kit comprises prototyped jewellery and accessories that may be covertly worn by a robot sex worker to ensure both its 'personal' safety and sustained functional operation. In the following pages, I will annotate photographs of a selection of these pieces – body-integrated weapons, alerts, and surreptitious battery chargers – with short conceptual digressions drawing from anthropological and ethical texts.

1 Regarding my occasional anthropomorphic use of pronouns in relation to a machine (an 'it'): the deliberate use of 'she' or 'her' occurs when discussing the machine as carrying out a gendered role, or when discussing social perception of a machine in a gendered role, to highlight the workings of this perception. It can also point to the likely slippage of future boundaries between organic and inorganic bodies and body parts, as more and more technology is integrated into the human form.

Unfortunately, the use, in the literature and in common parlance, of 'android' (lit. 'male droid') to refer to all humanlike robots and of 'gynoid' to mean a feminized *subset* of androids is too pervasive and undisputed to be avoided.

Incapacity Gas

poison gas cannister worn as decorative pendant or disguised among exoskeletal parts

What can we learn from the predicament of the future gynoid sex worker? It is worthwhile to briefly consider the reported predicament of Samantha, a robo-sex doll presented as an artwork in the 2017 edition of Ars Electronica in Linz, Austria. Ars Electronica is an annual festival for leading-edge art, technology and mechanical development. Since 1979 it has attracted high-profile international producers to its exhibition program with its associated prize. Within this framework, Barcelona-based engineer Sergei Santos set up Samantha, a 'sex robot' that his company, Synthea Amatus, has been developing, publicizing, and selling.[2] Before the five-day festival was over, the media was reporting that Samantha had been groped by festival-goers until it was broken and "heavily soiled". People roughly mistreated Samantha's breasts and limbs, breaking its fingers and causing other damage. Santos is quoted as saying that the public "treated the doll like barbarians". He had to remove the exhibit from its station and ship it back to Barcelona in a box, to be repaired and cleaned (Moye 2017).

Ars Electronica's (2017) notes for the festival exhibit 'Samantha' stated that the robot

> seems to enjoy sex as much as the humans and responds differently according to how she is treated. … She likes to be touched … she wants to be touched and kissed on her

2 Currently, it is claimed that Samantha is the only robot that can synchronize 'her' orgasms with those of her partners.

> fully functioning lips, the breasts and vagina to change her mode from family, to get to a point where she wants to interact on a sexual level, until she even has an orgasm.

Samantha was arranged on one side of a sofa with vacant cushions beside her. There were no signs or instructions dictating how people should treat Samantha. The rules of engagement were unclear and, although destroying an exhibit or contributing to its destruction is not commonly tolerated, the public was not morally obliged (nor, evidently, inclined) to treat the object with gentleness; perhaps the vigorous treatment Samantha received is instructive both for engineers and for cultural observers, and the people whose collective rough handling broke the gynoid could be viewed as having been inquisitive rather than malicious.

However, if we are to imagine a time when relatively intelligent machines, and especially machine hybrids, are granted (or usurp) levels of personhood according to the law and the social order, situations such as Samantha's are cause for, at the very least, the subjective concern of the victim. In this type of situation, and supposing the functioning of these 'persons' is machine-based, biological weapons of self-defence (that is, weapons for protection against a human perpetrator) are an obvious choice. The tiny cannister of *Incapacity Gas* could be worn externally as jewellery or inside the machine body as an ersatz component, and the gas or other poisonous biological substance it contains could be released in the event of attack by humans, or of their simply overstepping prearranged boundaries or manifesting over-enthusiasm. If organic elements in the robot assemblage were to be affected by the release of the substance, it is conceivable that the robot might still retain a critical amount of functioning hardware and software by which it may call for help, in order to get itself back to base and be repaired, as Samantha was. Although Samantha's body parts were damaged, the software reportedly was not; according to Santos, the robot continued to say, "Hi, I'm fine" (Moye 2017).

Survival

The frontiers of robotics and cybersexuality are vitally important in troubling categories such as 'human' and 'natural' (see e.g. Munster 2006: 64–6). In "The pornography of everyday life" (1999: 70), Jane Caputi reproduces and analyzes a 1985 print magazine advertisement for the automobile industry that

> depicts a woman's body fused to a motorcycle; her skin appears to be polished black metal, her arms become handlebars, her rump the seat.

She describes this sort of depiction as females being "killed into machinery". Caputi believes machines have no soul. Even the notional addition of machinery to bodies, or fusion of machinery with bodies, dilutes the soul or the *being* of the pre-existing being. She says, "in all such depictions, the attack is on what we culturally understand as the

soul". In her essay, becoming machinery is a punishment, an incarceration, a relegation to the status of object, and the "end result of objectification is death".

If it is a fact that most humans fear death, what kind of anxieties or imperatives must arise when a humanoid machine's mechanical parts degrade, fail, or break? Do machines not deserve to fear such death, or has death, for them, in some way already occurred? Machines do not have the status of 'individualism' that humans self-assign. Perhaps they embody "what postmodern critics speak of as *depthlessness*, or a flattening out of affect in an age dominated by mechanical reproductions, visual simulations, and apocalyptic technologies" (Caputi 1999: 69). However, even if one lacks a depth that might be called a soul (though I would argue that a capacity to analyze is a prime factor in such 'depth'), is it still warranted to want to protect your machinic self, or must you go unprepared into a potentially dangerous situation? We know from experience that this situation holds latent dangers; we know what it looks like.

While modern and future gynoids' biomechanical slippage along the object–subject continuum is really quite prosaic and need not provoke as much unease as it often does, a sexually servicing gynoid with no rights *is* possibly an example of women being "killed into machinery". Not in the sense, as Caputi reads it two decades ago, that objects or object-components of hybrid assemblages necessarily have no soul — but in the sense of a nomological determinism that fixes a functional trope, reproduces a situation of unequal power/rights, and precludes a liberated future. If Samantha looks like a porn star, then she will probably be 'ridden' according to the genre; if this treatment of sex worker robots becomes commonplace, women, especially those in erotic industries, may well be seen and used in increasingly violent ways.

Reproduction and control

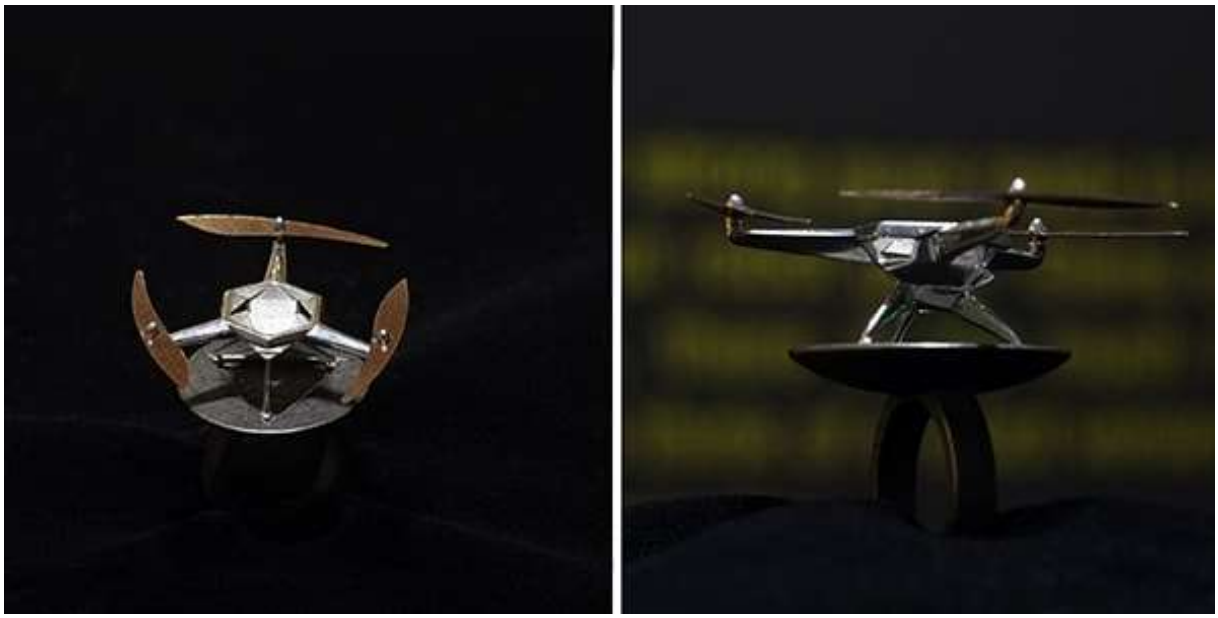
Taking human reproduction out of the shared, collaborative domain into a mode of controlled individualism is a longstanding patriarchal fantasy (see e.g. Castañeda & Suchman 2013; Kember 1998; Theweleit 1987 [1977]),[3] even as it resurfaces over and again in the horror and thriller genres as an 'unnatural', punishable act. Technical-industrial production of synthetic humanoids is factorial and predictable (so long as the threshold is not crossed into horror). Parturition is achieved *sans* intimate embodied collaboration, via a process of rationalization between (still delimited) options and fabrication methods that will predictably result in certain attributes being present in the 'offspring' of the creator. In one construal of the creation of androids, and even of everyday digital avatars, the drive to produce an heir is "enfolded back into the self, so that the generosity of mentoring becomes indistinguishable from the narcissism of self-fixation" (Hayles 1999: 171). A gratifying, ego-inflected object is engendered. Alternatively, Lucy Suchman

3 Consider also the absence of discussion of sexual reproduction in Marx's otherwise comprehensive theories of production.

(2007: 214) pronounces “the creationist urge” to be consistent with a masculine desire to disappear and be replaced by a transcendent version of the male engendering self.

While both the above conceptions of the procreative drive are somewhat universalistic, their fetishization is arguably suited to the dominant demographic among “imagineers” (Robertson 2010) working in computing and robotics (Ridgeway 2011: 187). If, following Suchman and other social anthropologists, we understand science as culture and scientists as cultural agents, then humanoid robotic corporealization is largely based in the androcentric cultural imaginary of the father-scientist, a “legacy of masculinist birthing, which is almost always better — less messy and more controlled, and … more challenging — than female birthing” (Castañeda & Suchman 2013: 17). In terms of models of the human, this imaginary has tended to uncritically reproduce dogmatist tropes framed as breakthrough innovations. Gynoid and android culture is a space of disparate and often conservative desires, a scary space for many, and it is overwhelmingly about control.

My Gynoid Survival Kit assumes that the robots *will* come under attack. This attack may result from overzealousness (an occupational hazard), miscalibration, mechanical failure, or maybe the acting-out of malice or misogyny. Biological gases, tinctures and suchlike occupy a precarious ethical territory, but who will need them more than a physically servicing subclass of person/machine?



Drone Ring

mini-drone worn as a decorative ring

Situation: a prostitute android needs to call for help, and, for example, wireless internet connection is not available or has been deliberately blocked. Robot may be critically incapacitated.

Possible response: surreptitiously release drone/s from worn jewellery, body jewellery or body part. Maybe they are small enough to fly through building vents, or hover undetected until there is a means of egress.

Componentry and conformity

Release of a drone ring is, for a robot, somewhat like a release of the mind. Physically separated, the drone can sense and process information while the robot's embedded computational components might also be sensing and processing information. A double-sensing combined within one personhood may be doubly efficient or doubly strong. But my drone, until it can perhaps be amalgamated with some organic or indivisible aspect of its (non-individualized) host, is merely a tool.

In *The Hostess: Hospitality, Femininity, and the Expropriation of Identity*, Tracy McNulty (2007: xliii) details an hierarchical relationship described by Saint Paul, who "figures woman's rightful relation to man as that of a 'body' to a 'head'". McNulty points out that "the prosthetic structure of this hierarchy also allows for the possibility that once detached from its 'head,' the 'body' might assume its own agency, or even switch its alliance to other 'heads'".

Components of androids, robots and cybernetic organisms are developed in a decentralized manner, in separate labs, in various cultural contexts, behind the trademarked doors of elite institutions (Castañeda & Suchman 2013: 5; Zaier 2012). Considered separately, each element of the construction, or the projected construction, of these new identities is fascinating and consuming: the expensive, hyper-real skin, the mechatronic body parts, the complex genome, the 'brain', 'mind' or artificial intelligence, the interactive reflexes, the prospective water resistance, and the fledgling, emergent sociality. Classically, each element should be the best it can be, the closest it can be brought to the 'ideal'. Gynoids are especially potent for this method of modular construction; paralleling how cinema has historically embraced (some say comprised) the "familiar aesthetic genre of a woman's subjection to the analytic mode of dissection, fragmentation and restitution in submissive entirety" (Vasseleu 2002: 90), the discursive construct of the gynoid gains power and traction even as 'she' remains 'in pieces'. And while she remains in pieces, a contained threat, enticement is foregrounded and the anxieties raised by her ability to make us want more of her are to some extent allayed (De Fren 2008: 42, 46–7).

Android building is in many important respects a collective dream — if not presently an inclusive one — and a specialized collectivism underwrites its future. It is not fantastical to say that all of the aforementioned specialist components and technical disciplines will pull together in the quasi-near future, to create an even-more-state-of-the-art, embryonically intelligent anthropomorph composed entirely of mutated and fabricated parts. To those of us not involved in the build, this cybernetic debut may feel sudden, didactic, miraculous even. If such a creature is figured female, arriving fully-formed (Castañeda & Suchman 2013: 5–6) with the appearance of a 20-year-old and the demeanour of a hostess (Springer 2012), then the sex robot may 'suddenly' require workplace protocols and protections.

Telepresence

The concept of mind–body split is extremely pronounced both in early witching via doll-poppet (spirit possession using synthetic replicas of humans), and in modern-day physically-augmented remote telepresent communication via robot. Here in the purely uncanny, another mind controls one's body, perhaps even one's embodied body, or one's dead body, or one's body that has never been alive. If the android prosthesis can be thought of as a body, then it can be body-snatched, by either an authorized or an unauthorized snatcher. To stray a little into the realm of the absolutely speculative: it is an extreme act of hypothetical hospitality, this team effort, this surrogation — the idea of giving over one's body to another mind; it sets out a radical scene of conjecture about hostessing itself.

The more that humanlike 'intelligence' is written into these machinic tools, the more complex the discussion will be about who defines the thresholds of control. When an android is like a remote-controlled car or technical tool, non-autonomous and mindless (*robotník* meaning 'drudge'), its possession by a controlling master is commonplace. But because the machine is humanoid, it is unavoidably semiotically infused with the sublimated desire to make life, albeit 'life' that can be controlled — or hijacked. If we are considering reproducing personality-marked bodies and controlling them from elsewhere (see Nishio et al. 2012) — of course we already control digital avatars in this way, but they will not intersect with lab-grown organics and AI in the ways that androids will — then we might see in this dismissal of the cultural unacceptability of spirit possession a kind of epistemic break in terms of our cultural narratives and taboos. 'Possession' is as unacceptable to cognitive psychology as it is to religious zealotry. As antithetical as the idea of remotely possessed bodies may be to generally accepted continental theories of situated cognition and the embodied mind,[4] it offers a helpful glimpse as to where our narratological boundaries currently lie.

Cathryn Vasseleu (2002: 84) writes that cinematic/theatrical "animation is closely aligned with the concept of a 'creative spiritual force'". Human (and divine) creative force has traditionally been aligned with patriarchal authority and the epistemic scaffolding of knowledge. Exploring the fictional figure of Hadaly, the man-made robot in Auguste Villiers de l'Isle-Adam's 1886 symbolist sci-fi *The Future Eve (L'Eve future)*, Vasseleu observes that this influential figuration of a gynoid, "identical to the young [model] woman but without the obstacle of a governing consciousness" (90),

> is the legacy of an aesthetic genre whose methodology has had an uncontrollable impact on the idea of human autonomy generally — not just one that has affected women. As a historical figure, Hadaly has become naturalised in animats [in which] the mutation of information serves as the engine of formal novelty among notional creatures devoid of minds or genitality. Instead of a separate intellect, intelligence is part and parcel of an evolving genetic algorithm. So too is reproduction conceived of as an act of selective transmission of morphology and mate-preferences. (91)

Vasseleu's articulation of Hadaly's disembodiment is telling. Hadaly is a naturalized animat groomed for possession — and information about the possessor (in this case, the character 'Thomas Edison') is relayed through her, back to him, in a narcissistic loop. In other words, the surrogate Hadaly is not 'possessed' or animated by her original, Alicia Clary, but by her origin, Edison. This is a danger that is perhaps not touted by better known formulations of the uncanny: that manipulations occur according to socially standard hierarchies, even within dynamics labelled 'spiritual' and eerie. A sex robot is currently "devoid of mind or genitality", but, in contrast to Hadaly, it is becoming

4 See, for example: Gilles Deleuze (1995 [1968]); John Dewey (1980 [1934], 2008 [1925]); Martin Heidegger (2001 [1927]); Maurice Merleau-Ponty (2002 [1945]).

corporealized as well as "notional". It is worth noting that enmeshment in corporeality has historically been attributed to colonized bodies and those of the lower classes (Grosz 2005: 3). The base condition of being a body that performs service work and hard labor, without responsibility for rational oversight of the circumstances of said labor, is "perceived as functional and therefore fundamentally degraded" (Schomberg 2011: 159–160) in order to maintain discrepancy in status between the colonizer and the colonized — the server and the served. This perception is intensified as machine intelligences take on monitoring and surveillance tasks in lieu of humans. The conceptions and evolutions expressed by Vasseleu are becoming material and re-enmeshed, and there is dangerous slippage, not between the categories of body and mind, but between intention and action, between the aesthetic presentation of an agentic 'self' and the entity who stands to benefit from its actions: between the puppet and puppet master.

Use of the word 'uncontrollable' in Vasseleu's description of Hadaly signals a concept of culture as an enacted loop that is not available for redirection or regenerative political intervention. Its deterministic dynamic is unstoppable. Jean Baudrillard (1991 [1983]) would have it, apocalyptically, that we are all 'possessed' by our self-manufactured environs, fused and one with 'telematic' media to the extent that "our own body and the whole surrounding universe become a control screen" (127). Each person is at the controls of a private hypothetical machine (128), a new kind of body that is wielded compulsively and yet culpable for its own pornographic saturation and superficial, incessant solicitation (130–31). There are no choices left in Baudrillard's 'sacrificial logic' — it is as if he is spontaneously empathizing with a dis/embodiment experienced by hostesses for generations — and the course seems headed, as Marshall McLuhan also foresees, toward implosion. Baudrillard articulates the nihilism he has grasped thus:

> As soon as this scene is no longer haunted by its actors and their fantasies, as soon as behavior is crystallized on certain screens and operational terminals, what's left appears only as a large useless body, deserted and condemned. The real itself appears as a large useless body. (129)

The body is left, twitching, reiterating empty gestures in a crystallized loop. This body is 'nature'.

The deserted, disconnected or incapacitated body of the sex robot — that body which is a painstakingly created replica of 'nature as woman' — requires extension and support by telematics. The drone ring is a stopgap measure, and also limited by its physicality, but may be a crucial locator of the afflicted or imperilled body of the robot.

War Fan

fan accessory, that evokes historical glamour yet conceals knife or sharpened metal

In feudal Japan and also in Japanese mythology, folding war fans were beautiful and deadly accessories that could be smuggled into places where weapons were forbidden. Used by samurai, warriors (especially female ninjas), and those who wanted to be armed in a discreet manner, these harmless-looking surprise weapons were crafted in different shapes and sizes, some incorporating sharp steel, some blunt heavy iron.

Included in the Gynoid Survival Kit, this handmade yet traditional object is both a sartorial suggestion and a reference to the unchanging story of the gynoid. The particular mix of synthetic biology, hardware, enchantment and cultural entrenchment that is the futuristic gynoid reconstitutes the age-old motif of Death and the Maiden. Humanity's improbable, deathly quest for closure, which causes us to repeat our actions and decisions in observable cyclical phenomena and even, according to Judith Butler (1988; 1990; 1997), defines our subjectivity, is forestalled by the very repetition of the gynoid trope. We cannot have closure if we are stuck. A rut is not a road. A story is a product of its time. Butler's conception of the concurrent fictionality and persistence of gender points to the endurance of its codes: a powerful story outliving a technological paradigm.

Originary technicity

In keeping with Bernard Stiegler's (1998 [1994]) insistence on the absolute irreducibility of the technical, technologies with which we co-evolve are seen as complicit (not impotent, not fully responsible) in producing meaning, both semiotic and phenomenological, in social life. Time is marked through the tools we make, and the tools themselves help determine the flavour of the times. They have agency. (Is this soul?) They evince what is, and what is not, at specific historical moments. Their reasons for being — such as the case of a war fan being produced to circumvent settings of restriction, surveillance, and coercion — contribute to the human condition, but also preclude other realities.

For cultural theorists Sarah Kember and Joanna Zylinska, in *Life After New Media: Mediation as a Vital Process* (2012: 17–18), originary technicity is a less oppositional, more ethical hospitable condition.

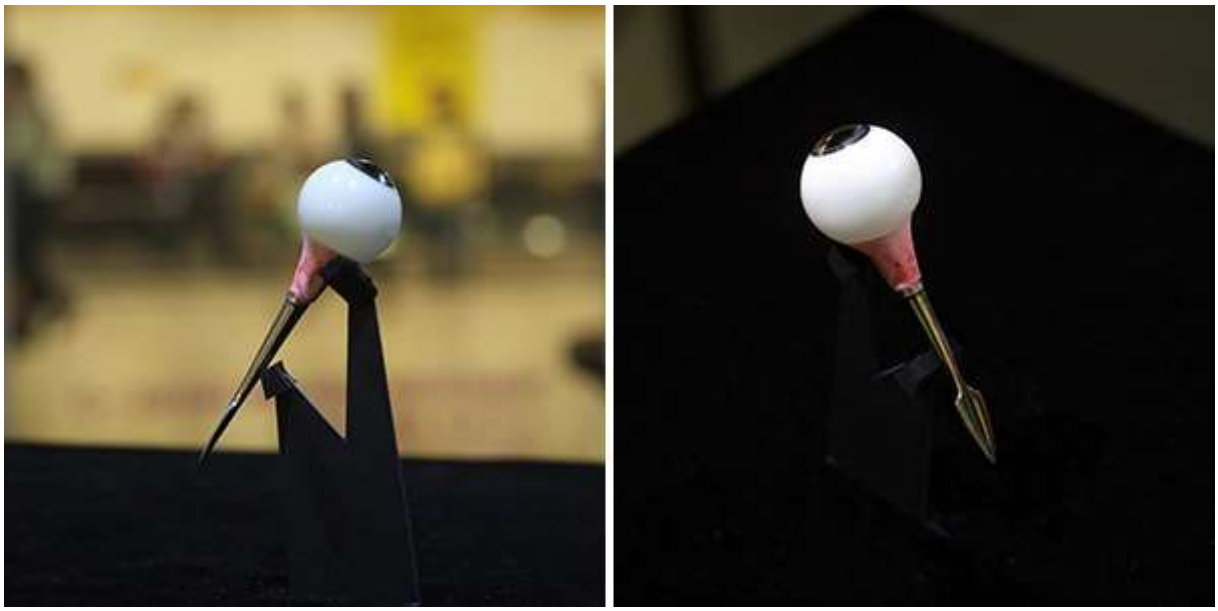
> The idea of the originary self-sufficient, total man living in the state of nature is … nothing more than a myth … Originary technicity can thus be understood as a condition of openness to what is not *part of* the human, of having to depend on alterity … to fully constitute and actualise one's being.

Akin to a turn toward vital materialism (Bennett 2010) as a form of being-in-the-world always already "productively engaged with an alterity" (Kember & Zylinska 2012: 17), an ethics of technicity extends performativity and responsivity to machines and to all matter, and might portend a breaking down of hierarchies among cohabitants. But if, as claimed by Stiegler (1998 [1994]), stories, also, are technical prostheses by which *the world is co-constructed* rather than by which *we construct the world*, then our story-myths are problematically afforded even more agency and less ambiguity than perhaps they should have. Notwithstanding stories' susceptibility to (gradual) performative modification, it is from their proto-constructive entwinement with human 'advancement' — their active discursive performativity — that they get their political intransigence and sluggish entrenchment. It is difficult to see how Stiegler's line of thinking — including narrative in the model of originary technicity — will help us break further with established myth. The theory actually makes it easier to see how the reiteration (r)evolves.

Despite the perception of women being relatively fixed, technology and the human–machine relation are usually perceived as being in fast flux, and subversion of a dominant model cannot be achieved from an affect of static revulsion. However, if one takes cultural memory to be constituted fundamentally by and through the evolution of the technical, as in Stiegler's concept (1998 [1994], thereafter reworked by Derrida) of originary technicity, subversion occurs not in the representation or recontextualization of the prosthesis (tool), but in identifying the telling glitches in its incessant re-mediation. As the Star Trek series' space-colonizing Borg have it in their matter-of-fact battle-cry, simple resistance is futile; what is called for is rapid and partial refiguration (Haraway

1992; Suchman 2007) of a moving target, as "being defaults to, or plays with, the conditions that technics make possible" (Tinnell 2012: np).

Systems of capitalist production create bodies that are, in Augusto Boal's (1985) terminology, deformed by work. They are always produced anew and, arguably, freakishly by what they do, and by the tools with which they do it. The seemingly innocuous hostess' fan expands and contributes its meaning as a talisman of security and a weapon of war; its metal blade mimics and is mimicked by the metal body of the robot who may need to deploy it. Repeating Kember and Zylinska as quoted above, "originary technicity can thus be understood as a condition of openness to what is not *part of* the human": for a robot, the techne can be both an ontology, and subsidiary tools worn inside or *as part of* the body/self. The next section details one such object.



Sharp Eye

removable eyeball with concealed dagger blade

Even if, as in current android construction practices, each eye is or has a camera, there can be cameras embedded elsewhere in the body. So an eye may be removed, if necessary, and vision still function. A spike or needle can be embedded in the root of the eyeball and still pass a scan as being a mechanical connection component.

Sharp metal is dangerous to humans and will continue to be. It causes damage which provokes a nerve reaction, perceived as pain, and it lets out vital fluids! It's rarely ethical to stab someone, but it can be considered ethically acceptable if done under sufficient duress and in self-defence. Can we extend such ethical frameworks to robots who work for our physical pleasure?

The robot wife as chattel class — "women acting like Stepford Wives who cheerfully and mindlessly engage in sexual and domestic servitude" (De Fren 2008: 195) — is overtly figured by roboticists and investors when publicizing their androids in the global media. If 'other' members of society find this figuration too repugnant to warrant support by tax monies, then, as David Levy suggests in *Love and Sex with Robots* (2007), research and development could instead be funded by the already deeply inegalitarian multi-billion-dollar sex industry. But rather obviously, designing and deploying robots uncritically in a stereotypical sex hostess' role and image does not guarantee ethical treatment for the robots, their 'gender', or the workers they displace.

Roboethics

Ideas about gender, embedded in documents by engineers in Europe, Japan, Korea and the US that seek to define 'roboethics',[5] are incomplete, biased, and/or culturally imprudent. In the following, I will briefly gloss three documents, or sets of documents, from committees convened to draft a preliminary directive for the emerging field of roboethics. Ethical assessments made by transcontinental engineering cooperatives require greater input from (post)humanities disciplines, including recent scholarship addressing the issue of sex robots precisely (see Devlin 2018; Richardson 2020 (forthcoming)), and also three decades of writing about the gendered synthetic/cyborg/avatar body and the cybernetic interface.

EURON An atelier, funded by the European Robotics Research Network (EURON) to systematically assess ethical issues for human designers of robots, produced and circulated a 42-page *Roboethics Roadmap* in 2006–7.[6] The *Roadmap* claims that humanoids "answer to an old dream of humanity, and certainly do not spring only from rational, engineering or utilitarian motivations, but also from psycho-anthropological ones … [such as] the demand to carefully replicate nature in all its forms" (Veruggio 2007: 28).

The atelier refers at its publication's outset to 10 General Ethical Principles of the United Nations, sublisting the United Nations Convention on the Elimination of all Forms of Discrimination against Women (18 December 1979). The *Roadmap* lists, in passing and amongst many others, values of non-discrimination, non-stigmatization and diversity in "gender, ethnicity, minorities" (10). Gender is not mentioned again and the document proceeds to discriminate absolutely, either by omission or along the lines of the few examples provided below (for more examples, see Knox 2015: 99–104). Issues relating to social power structures are totally elided, even when identifying potential 'problems' springing from human–humanoid interaction and cohabitation. The term 'discrimination'

5 More recent ethical policy documents include the Report of COMEST on Robotics Ethics (World Commission on the Ethics of Scientific Knowledge and Behavior (COMEST) 2017) and Ethical Issues for Robotics and Autonomous Systems (UK Robotics and Autonomous Systems Network (UK-RAS) 2019). These will be discussed in forthcoming analytical annotations to the second set of accessories in Gynoid Survival Kit, which is an ongoing art project. In short, the latter document relies heavily on source material that relates solely to artificial intelligence, and scarcely references bodies or acknowledges that ethical issues might be embedded bodily; the former document contains some useful material on "gendering care work" and critiques the fact physical care is usually absent from the rhetoric of techno-advancement. The new work also glosses the 2019 UNESCO report "I'd Blush if I Could", produced in collaboration with the German Government, about the gendering of digital assistants tending toward what UNESCO's Director of Gender Equality calls "hardwired subservience" (UNESCO 2019). The report contains a policy paper with 15 actionable recommendations. Its focus is on gender in AI.

6 Sources cited in this scientific document include, incongruously, Isaac Asimov and Aldous Huxley. I audited its entire reference list by sex. Seventy men are cited, and six women, four of whom have co-written with men. (The other two women are prominent scholars Breazeal and Turkle.) This statistic is skewed in favour of females because I have merely done a headcount, and several of the male writers have more than one text cited. The document's reference list is more than 92 per cent male.

clearly needs a solidly expressed, published definition in the document and in the broader roboethical purview, as its constituent forces, histories and consequences are often missing from view.

The EURON document states that "sexual robots could decrease the sexual exploitation of women and children" (38) but it does not offer a description of how this might come about, despite the authors' certainty that the robots in question will be made to look and 'behave' like the women and children.

> Given the high cost and the delicacy of the humanoids, they will probably be employed in tasks and in environments where the human shape would really be needed, that is, in all these situations where the human–robot interaction is primary, compared to any other mission — human–robot interactions in health care, children/disabled people/elderly assistance, baby sitting, office clerks, museum guides, entertainers, sexual robots, and so on. Or, they will be employed as testimonials for commercial products. (28)

As should be obvious to this atelier, these role sets happen to be among those to which most societies 'naturally' assign gender and ethnicity. They are, with the atelier's recommended qualities in a human/oid appended: cleaners (fast, accurate, never tired, never bored), babysitters (patient, talkative), personal assistants (always available), handymen (able to solve many technical problems), and entertainers (attractive, marketing tools). The document states that "last but not least, robots will be used as sexual partners in many fields, from therapy to prostitution" (37). It goes on to talk about robots' growing acceptance in the art world.

From its argument, as summarized above, there follows in the *Roadmap* an (underplayed) logical leap: it is more than implied that robotic replication of 'service' people will emancipate these same people from their current drudgery and stigmatization. There is no consideration that the replication might either further disenfranchise these groups by threatening their livelihoods, or, more insidiously, materially inscribe an aesthetic that would 'forever' semiotically link them to service roles (see Alac 2009; see Chasin on domestic service workers in Suchman 2007: 220).

Cynically, one might respond that, yes, this decrease in exploitation might eventuate, were the sex robots to *replace* the legions of exploited children and women, rather than coexist with their originals, which is the more likely scenario. For vulnerable groups, the de-humanizing aspect of the robots' being aesthetically associated with a stereotyped societal group is a prime example of being killed into machinery. Levy, also, bases a large part of his argument on the economics of inflatable and modular sex dolls, while ignoring the fact that the vast majority of these are female-appearing (2007: 247). As Suchman (2007: 221) observes, "[a]lthough the 'we' who will benefit from smart technologies may be cast as a universal subject, the very particular locations of those who speak and those who are (at least implicitly) spoken of inevitably entail marks of

class and gender and attendant identifications". The 'we' in Levy's small-f futurism is the conspiratorial, cashed-up user of said robo-prostitutes. The example Levy gives of this universal subject? A sailor.

To address such concerns is beyond the professed scope of the document; still, its progressive gesturing is hollow. It envisages the attitudes of humans toward robots, optimistically, as mutable: this might in fact comprise a positive outlook toward the prospective rights of sex robots to protect and defend themselves. However, the attitudes of humans toward exploited humans are seen as immutable. In a prime example of what González (1999 [1995]: 271) calls "white collar epistemology", the atelier finds that, rather than change societal attitudes toward exploitation, it is more desirable to switch the objects of those attitudes. Consequently, machines that serve 'us' are "refantasized from problematic human workers" (Suchman 2007: 225) while further obscuring the ongoing situations of these same human workers.

The quick-fix approach described above also assumes an ongoing division between human and robot. With so many high-profile labs and innovation centres involved in producing this document, it is not a rigorous enough approach to make the excuse, as they do, that the vision is necessarily truncated and only meant to represent the time span of a decade. As biorobotic borders shift and blur (Allison 2006; Pickering 2010: 9, 384), the embedding of discriminatory practices in this glib, deterministic 'ethics' may result in dire consequences for many: robot, human, and robohuman.

ETHICBOTS Another European project, Ethicbots,[7] ran 2005–8 and was a much more comprehensive attempt to survey the "emerging technoethics of human interaction with communication, bionic, and robotic systems" (*Ethicbots* 2006a: D1-3). It was similarly subtitled 'Towards a roadmap for techno-ethical research'. A consortium from Italy, Germany, Switzerland, France and the UK was coordinated by the Physical Science and Computer Systems Engineering Departments of the University Federico II at Naples. With the European Charter of Fundamental Rights as its ethical framework, this consortium examined existing ethical regulations — an aim was "presenting the status quo" (*Ethicbots* 2007: D4-33) — with a view to its "proposal of standards and recommendations for EU techno-ethical regulations" concerning the integration of artificial entities into human bodies and societies. Its findings on humanoids corroborate my stated impressions of EURON's *Roadmap*, but do not recommend anything more detailed than 'care' and a vaguely articulated vigilance. The authors also, and perhaps instrumentally, grossly underestimate the future presence of humanoids in societies, despite the problems that, they acknowledge, are augured by 'humanoids'.

7 Ethicbots stands for Emerging Technoethics of Human Interaction with Communication, Bionic and Robotic Systems. The URL at which it was published originally is now defunct. To read the original text, please contact this article's author.

> With regard to research on humanoids it is questionable whether there will emerge any useful applications. It is self-evident that humanoid robots are mostly functional if they substitute humans. … But as the main application area of Human–Robot Interaction is the toy (and may be soon the sex) industry, while therapy and care is very small and specialized … we should rethink the amount of funding in the field of Human–Robot Interaction given the limitedness of public resources and the missing applicability of humanoids in useful societal domains. (*Ethicbots* 2008: D5-59–60)

Ethicbots did examine the issue of gendering through case studies in socio-ethics (including Levy 2007) "relying on hermeneutics, anthropology, critical theory, gender and cultural studies as well as participatory technology design methodologies" (*Ethicbots* 2008: D5-16). It concluded that, in contemporary practices in human–robot interaction, "human behaviour is commonly standardized by no more than five personality traits and six basic emotions … Equality issues, *especially* with regard to gender and diversity are ignored by this approach" (*Ethicbots* 2007: D4-62). There is no mention of sexism *per se*, but one, important, mention of 'women' with regard to sexism.

> Social roboticists want to exploit the assumed human tendency of anthropomorphising machines and interacting with them in a social way by shaping them either woman-like, like an infant or like a pet. … On the one side, it is problematic from an ethical standpoint to give robots the shape of women, infants or pets to attract user [*sic*]. This kind of technology design perpetuates long-known and problematic stereotypes. On the other side, this model ignores female consumers who might be repelled by woman-like shaped robots for care, education, etc. (*Ethicbots* 2008: D5-56–7)

> [W]e must be careful with legitimating human work to be replaced by machines by pointing out … the inhumane nature of a certain kind of work. In this case, a 'robotic divide' between rich and poor countries would not only mean that in some countries certain tasks are taken over by robots but that — according to this way of argumenting [*sic*] — workers in other countries are expected to do inhumane work. (*Ethicbots* 2007: D4-27)

> Tele-presence may come along with xenophobia if this technology is used for staying away from people. Thus, also here in respect of a possible 'robotic divide' between rich and poor countries, but also between the rich and the poor within one society, there must be asking *[sic]* if this does not result in establishing societal developments which are lamented elsewhere. (*Ethicbots* 2007: D4-32)

As in EURON's *Roadmap*, the eventual focus of the report is on regulating, rather than on educating.

> The example of 'virtual child pornography' in online offers such as 'Second Life' shows that similar regulations must be expected also for humanoid robots if they, being media products, are not anyway included into the appropriate laws. In general, we must assume that humanoid robots, as far as they represent specific individuals, are not allowed to violate the personal rights of those depicted, and that as far as no example can be found

> they are allowed to be produced and used only within the frame of valid laws. (*Ethicbots* 2007: D4-32)
>
> The EU should carefully monitor research and development on humanoids in ethically problematic areas (such as sex robotics, care robotics). … The disregard of EU quality measures and the further reification of stereotypes and reductionist schemata via technology should be avoided. (*Ethicbots* 2008: D5-64)

Regulating the (re)production of already extremely regulated social groups is, or should be, a very delicate consideration requiring attention to, among others, economic, sexual and cultural differences (cf. Kitano 2006; Nakada 2012). Ethicbots recommended that addressing the challenges of humanoids needs further discussion, wider community-building, and better dissemination strategies than could be achieved by its project.

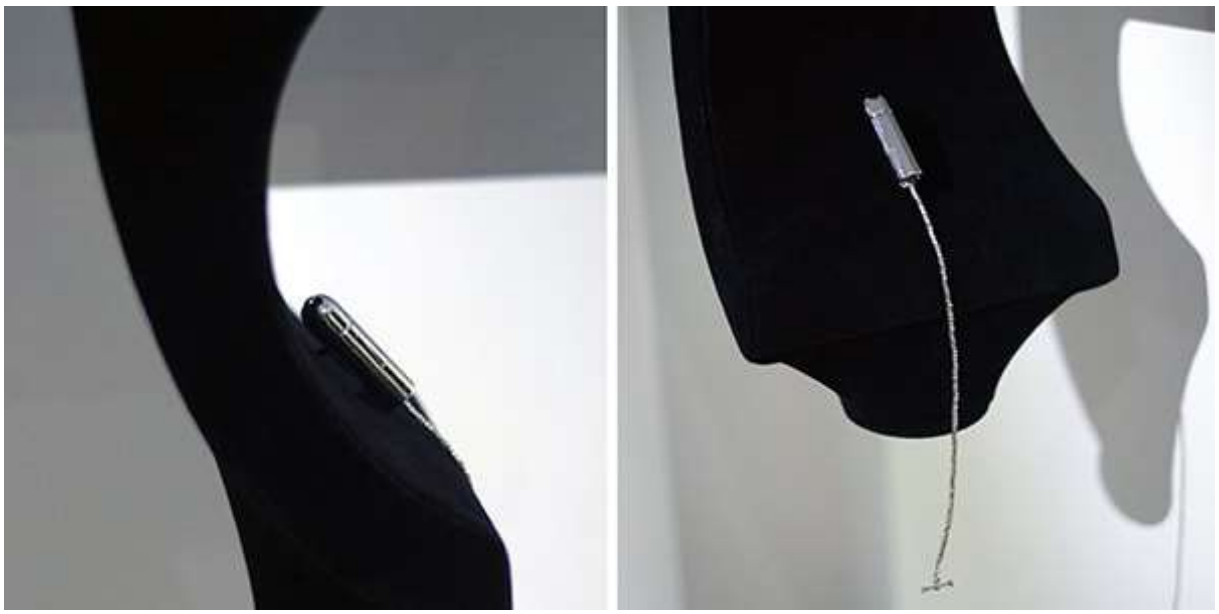
SOUTH KOREAN ROBOETHICS The Government of South Korea, one of the world's most hi-tech nations, announced in 2007 that a five-member task force composed of robotics experts, futurists and a sci-fi author had begun work on a 'robot ethics charter'. The progress of this charter is difficult to track, possibly because its simplistically outlined tasks ('the charter will be based on Isaac Asimov's three laws …' etc.) proved difficult in the doing.

The rationale for the charter was expressed similarly to that for the EURON manifesto. The South Korean Ministry of Commerce, Industry and Energy told the global media (AFP) that "[a]s the South Korean population ages, various service robots will come into use, eventually becoming key companions to human beings" (*New Scientist* 2007, unpaged), while the Ministry of Information and Communication predicted that every South Korean household would have a robot by sometime between 2015 and 2020 (BBC 2007) — a target five or ten years earlier than that of the Japanese government. *National Geographic* ran the title "Robot code of ethics to prevent android abuse, protect humans" (Lovgren 2007), citing EURON's Gianmarco Veruggio as a leading authority on roboethics' "sensitive areas". *New Scientist* (2007) reported:

> The Korea Institute of Science and Technology, in Seoul, is also working on robot caregivers that can perform simple chores and monitor the health of elderly people. The project is due for completion in 2013. The same institute developed EveR-2 Muse, a robotic 'woman' that can speak and reproduce various facial expressions.

As a cautionary case in point, both magazines directly quoted robotics researcher Hye-Young Park of the Korean Ministry's code of ethics team: "'Imagine if some people treat androids as if the machines were their wives'" (Lovgren 2007; *New Scientist* 2007). Without reading too much into this remark (from a government-instated 'ethical expert'), its various double-edges include: the semantic opposition of 'people' to 'wives'; ambiguity as to the object of the concern (is it for the 'person' or the machinic 'wife'?); the unsubstantiated — formative? — expectation that the household worker-droid will

be feminine-gendered; and the undercurrent of titillation invoked by the human–robot domestic arrangement. In speaking to a major global media outlet, it is here considered acceptable to verbalize all these assumptions.



Discreet Charge; Top-up Charge

spare batteries that can be covertly worn in place of earbuds and tampons

There is a misconception in popular wisdom that robots, by being immortal, are somehow impervious to the passing of time. On the contrary, time can be used as a weapon against robots. Even in a cyborg body, components will need different types of power and it is unlikely that the common battery will be superseded any time soon. Battery cycles can be swift, especially if complex physical tasks are performed. Mobility requires disconnection from the grid. It is likely that a client may know at least the approximate length of a robot's battery life, and use this knowledge for good or ill. If a working gynoid faces a critical battery-depletion situation, it may need surreptitious charge. These accessories can be carried and worn in ways that do not telegraph their function as top-up batteries, especially to intoxicated clients.

In some feminist theory there is recuperation available to stereotyped women — to all women — in the 'transgressive' figure of the cyborg. Haraway's *Simians, Cyborgs, and Women* (1991), containing, among other essays, her 1985 "manifesto for cyborgs", productively introduced this reading of a "regenerative politics for inappropriate/d others" (Haraway 1992: 295). In an endeavour to view the more recent 'evolution' of gynoids in light of such readings of dissolution, double-coding and fluidity across frontiers, I have been compelled to question whether the unfortunate embodiment of the mediated hostess in the commercially obtainable fembot is redemptive in any such way.

So-called 'sex robots', while not technically containing what might be considered the organic componentry of a cyborg, are surrogates that function via human input or entwinement. They are also, like silicone implants, plastic joints and transplanted organs, apparatus that intervene in medical discourse: they could be used as contraceptives; they could be used by people requiring aesthetic copies of humans that 'freeze the moment' and reframe biological aging, replicating or 'versioning' a desired human, or even oneself to deploy as a sexual proxy. This facility will make for a profoundly different aesthetics of techno-sociality in years to come. Hayles' (1999 [1993]) much-quoted, clear-cut claim, twenty years ago, that ten per cent of the US population were cyborgs by virtue of pacemakers and the like could not be made today; in fact, claims are constantly made that 'we' are all cyborgs now (see e.g. Case 2010). The productively liminal ontological status of the metaphoric figure of the cyborg is receding, and in its place materializes a formal facticity that, once marketed on a vast scale within global capitalist infrastructure, may prove doubly difficult to dissolve or amend.

I am concerned here with the early stages of android cultivation — a pivotal period, happening now, that anticipates one in which the humanoid machine will come to be distributed throughout society, naturalized and factual to the extent that its very existence "serves as the foundation of knowledge and secure assent" (Suchman 2007: 214; see also Robertson 2010: 10). In other words, we get used to things existing, feel as if they have always been there, and (culturally, due to contingent practices of technicity and historiography) tend to forget how or even that they were modelled (see Harman 2009: 28–46, 183). Castañeda and Suchman cite Ankeny and Leonelli as contending that "the actual relationships between model organisms and [the larger groups they are meant to represent] are very ill-articulated in the early stages of model organism work" (2013: 7).

Modalities of (dis)articulation are obsessively physicalized in android science, but rarely verbalized in any reflexive or interrogative sense – as, admittedly, the tasks at hand in prototyping the human predominantly concern attempts to simplify what is complex and audition what is guesstimated. Reliance on tropic 'common knowledge' is strategically aligned with efficiency and economic viability, as 'common knowledge' shortcuts the need for realignment of values in either the production or consumption of an image or

entity (cf. Haring, Mougenot & Watanabe 2012). Anyone who has attempted to draw a friendly-looking alien knows that it is simply easier to present it intelligibly in at least vaguely humanoid form — the relationship seems obvious between comfortable futurity, the humanoid and the historical human; thus a historically contingent humanoid-ness becomes apprehended as 'naturally occurring' phenomena in all individuals perceived as agentic: it is a simple 'matter of fact' that 'new' creatures are humanoid. It is this flavour of the foregone conclusion that is so dangerous politically and ideologically to certain identities whose development is circumvented and who miss out on self-definition and growth.

Hayles (1999: 158) has written that machines do not 'grow' as such, or as we know growing to be. But at the intersection of biology and engineering (e.g. bacterial batteries), the meaning of the term 'growing' is being expanded. Robotics proceeds apace and will intersect with other kinds of projects to create new modes of reproductive collaboration; thus 'growing' will be constantly redefined. And what is considered extraordinary or mutant now will later be normalized.

Building into the sexbot the memes of glossy hair, smooth skin, demure demeanour and the verbal ability to reassure her companion will not render her reproductive in the evolutionary sense (either as a mate for a human, hybrid or, rather more speculatively and anthropomorphically, another android). However, there has been consistent reiteration of these conventionalized attributes in figuring and programming the faux-genetic gynoid (González 1999 [1995]: 264). Considering the matter from another angle: due to the inextricability of our zeitgeistian knowledge from its co-present culture … maybe we *do* need these outmoded aesthetic story-codes for androids to reproduce — if the gynoid looks and behaves like the quintessential geek's fantasy girl, does she not thus implicitly encourage him to make more of her? Does she not thus sneakily guarantee her progeny? (Cue the horror reel.) Suchman (2007: 269) prefigures this spooky scenario thus:

> '[T]he technical' in regimes of research and development are centred, whereas 'the social' is separated out and relegated to the margins. It is the privileged machine in this context that creates its marginalized human others.

In other words, roboticists generally take for granted their everyday social behaviour, and do not analyze it when assigning form and function to humanoids; rather, they instinctively, pragmatically and "uncritically reproduce and reinforce dominant stereotypes" (Robertson 2011: 288; cf. Siegel, Breazeal & Norton 2009). These stereotypes could be seen as materially self-fulfilling, reproductive even. Subconscious popular recognition of their narrowness could also be the basis of a longstanding public phobia: that cloned robots will proliferate and take over the world (Bar-Cohen, Hanson & Marom 2009: 165). This is a literal reading of Suchman's metaphor of marginalizing humans.

The over-storified gynoid is using human failings to create more of herself; she will prevail. This cautionary tale, however, provides humans yet another reason to suppress the freedom of the gynoid and, by association, the hostess.

Stereotype–clone–fear–stereotype is a cycle by which the construction of the gynoid *can* be understood. My artworks render this cycle of anxiety, reproduction and disregard in various ways. Battery anxiety is a major driver of behaviour in today's world, and the prostitution robot will not be immune to it. The finite battery is a weak point: the energy-source of the machine. To continue to operate, contribute, prevail, it will need power, backup, and supply. Thus weaponized, it may have a chance of protecting a type of selfhood that is not supported in the context of its working arrangements.

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