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POSITION PIECE

SmartMom Rebooted: A Cyberfeminist Art Collective Reflects on its Earliest Work of Internet Art

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subRosa, a cyberfeminist art and theory collective was organized as a reading group researching issues of feminism, science, embodiment, and technology. As part of a residency at Carnegie Mellon University's "STUDIO for Creative Inquiry" subRosa members Faith Wilding and Hyla Willis collaborated to produce *SmartMom* our first interactive Web-based project about the rapidly developing new biotechnological/medical/reproductive field known as Assisted Reproductive Technologies (ART) and the increasing medical, technological, and state control of women's bodies, sexuality, pregnancy, and birth. This illustrated essay describes the project's origins, theory, research, and visual components, as well as its pedagogical and critical content, which examines the ways in which reproduction is being technologically managed increasingly linked to "smart" space and military technologies.

Just before the turn of the twenty first century – sometime around 1997 – a subRosa member went to buy a toaster at Kmart¹ and couldn't find one that was not "Smart." With some alarm, she noticed that all the other household appliances were likewise "smart," as were the toys in the toy department. Could this be a civilian trickle-down effect of the Internet or networked technologies of the First Gulf War?² (**Figure 1**).

Alongside articles about cyberfeminism and post-humanism, the cyberfeminist reading group from which the art collective subRosa hatched, had been investigating the new technologies of conception, pregnancy and childbirth known as Assisted Reproductive Technologies or ART, for example: fertility-enhancing drugs, intracytoplasmic sperm injection [ICSI], artificial insemination, *in vitro* fertilization [IVF], and surrogate gestation³. Most of us were students or faculty at Carnegie Mellon University, a campus specializing in science and robotics that helped develop the laser-guidance systems for "Smart Bombs" while simultaneously emerging as a recruiting ground for genetically superior egg donors.⁴ This research inspired sR members Faith Wilding and Hyla Willis to create the *SmartMom* project as a satirical but critical, feminist response to the new reproductive technologies.

SmartMom (1999) is a *détournement* of the Defense Advanced Research Project Agency's (DARPA) Smart T-Shirt technology, as well as being inspired by the proposed engineering of a cyborg body adapted for space travel, as described in Manfred Clynes and Nathan Cline's article *Cyborgs and Space*.⁵ We hoped that our experimental NetArt project would later be expanded to include a performative sculptural installation making use of the actual high-tech fabric being developed at Georgia Tech, along with video monitors and audience participation. We were

¹ Kmart is a US-based chain of large, mostly-suburban, discount department stores.

² 'Smart Toaster,' collage by subRosa, 2016.

³ Assisted Reproductive Technology – or ART – describes technologies used to achieve pregnancy such as fertility-enhancing drugs, intracytoplasmic sperm injection [ICSI], artificial insemination, *in vitro* fertilization [IVF], and surrogate gestation.

⁴ Carnegie Mellon University's Software Engineering Institute developed some of the computer science algorithms used in the laser guided munitions, a.k.a. "Smart Bombs." Its School Newspaper *The Tartan* regularly ran ads soliciting young women to be egg donors. See *Domain Errors!: Cyberfeminist Practices* for further discussion of subRosa's early history.

⁵ "Cyborgs and Space" Manfred Clynes and Nathan Cline. *The Cyborg Handbook* Ed. Chris Hables Gray, Routledge, NY and London, 1995. p 29 & ff.



Figure 1: Are “smart” appliances a civilian trickle-down effect of the high-tech Gulf Wars?

intrigued that the actual Smart T-Shirt material involved a matrix of piezoelectric sensors that might easily be used for experimental music making, among other forms of interactivity.

SmartMom proposes a civilian adaptation of the Smart T-Shirt as a means of surveilling and controlling the behavior of pregnant women and assuring a successful pregnancy. Originally engineered for remote battle-field wound-sensing, and to facilitate telepresent surgery for soldiers or space travelers, DARPA's Smart T-Shirt lent itself perfectly to subRosa's ironically imagined "repurposing," as a way to literally harness productive and reproductive female labor.

In a 2008 essay *Common Knowledge and Political Love (iv)*, we discussed the socio-political context in which we created *SmartMom* and several later art projects, noting that "under capitalism, femininity and gender roles became a 'labor' function, and women became a 'labor class.' On one hand, women's bodies and labor are revered and exploited as a "natural" resource, a bio-commons or commonwealth fundamental to maintaining and continuing life, while women are also equated with "the lands," "mother-earth," or "the homelands." On the other hand, women's sexual and reproductive labor – motherhood, pregnancy, childbirth, housework, care-work – is devalued economically and degraded socially." Women's bodies become flesh labs and Pharma-commons mined for eggs, embryonic tissues, and stem cells, and employed as gestational wombs in ART. Under such conditions, resistant feminist discourses of the "body" emerge as an explicitly biopolitical practice.⁶

The *SmartMom* web site was an early experiment in tongue-in-cheek, discursive, Internet-based artwork that helped expand cyberfeminist discourse about the ways in which new biomedical and prosthetic technologies originally developed for military purposes, are soon converted to civilian use, and vice versa. We wished to critique the insidious militarization of public health-care and private reproductive life, and situate it within the flawed social tendency of a new Eugenics. *SmartMom*

⁶ We are indebted to numerous theorists in developing our thinking and praxis. On these points notably *Caliban and the Witch* by Silvia Federici and *Multitude: War and Democracy in the Age of Empire* by Michael Hardt and Antonio Negri.



Figure 2: We wished to critique the insidious militarization of public health-care and private reproductive life.

proposes a “solution” to the “problem” of women’s notorious resistance to being controlled⁷ (Figure 2):

The SmartMom Mission: we’re the company that cares for your complete pregnancy needs. We are dedicated to adapting women’s reproductive bodies for robotic medical regulation and surveillance through cyborg technologies, SmartMom products, and remote reproductive management methods.

The Problem: [. . .] In particular, the problem has been that pregnant and birthing women moving freely among the general population are hard to control and surveil at all times. While doctors try to regulate the lives, activities, and diets of their patients, women tend to be resistant to this form of control and many of them habitually disobey doctor’s orders and lie about what they have been up to.

⁷ ‘Mother Vape,’ collage by subRosa, 2016.

. . . Increasingly, those who hire surrogate mothers are seeking the legal right to monitor and prescribe their lifestyles, diets, and activities. But how is this to be done without physically confining the woman, or having her followed at all times? Indeed, with declining birth and fertility rates, it is in the interest of all citizens to assist in the surveillance and protection of all pregnancies!

The Solution: [. . .] Henceforth reproducing women will be able to live, and give birth in, technological, machinic, or other environments such as space capsules, extraterrestrial environments, remote battlefields, dangerous urban areas, underserved rural backwoods, nuclear submarines, and the like, without endangering their offspring, and without altering the biological heredity of their embryonic organic platform which has been carefully genetically engineered to fit these environments. Coupled with ART, which can also be delivered telepresently by smart technologies, the new remote pregnancy and birth monitoring and manipulation systems represent a major breakthrough in Smart reproduction. . . .⁸

Our dystopian imaginings included “The Cyborg Soldier Reproduction Program: Making better soldiers for a safer tomorrow™,” a “Surrogate Mother Protection Program: Protecting Mom so she can protect you™,” and the “Civilian Pregnancy Observation Program: Watching our Future Grow™,” each accompanied by schematic drawings and collages that combined “advancements” which at that time were conflated more in our U.S.-based artistic imaginings than in real-world technologies.

Fifteen-plus years and a second Gulf War later, ART in the United States is more than ever a market-driven, speculative flesh technology accessible to those who can afford it, limited primarily by what the market will bear. While many of the basic ART techniques – frequently pioneered on livestock – remain similar, the human bodies that perform each “component” of the reproductive process have become completely

⁸ Excerpts from subRosa's *SmartMom* web site, retrieved 16 June 2016 from <http://smartmom.cyberfeminism.net/>.

globalized, with commissioning parents selecting eggs, sperm, IVF, gestation, nursing, and child rearing sources from multiple continents in the production of each child. This “global reproductive assembly line” is perfectly in sync with out-sourced capitalist production and marketing of many consumer goods and technologies. ART has become both more available and more regulated in Europe (via nationalized health care) while in the U.S., market forces have made Octomom (“cheaper by the dozen” multiple births) a reality, while the labor market for gestational surrogates has shifted from domestic military wives to married mothers in India. Fair-skinned college students or factory workers in the Czech Republic are now a far cheaper source for eggs than fair-skinned Ivy League undergraduates in the U.S. Since ART is not part of a national insurance plan, and American women are still routinely denied maternity leaves and equal pay, cost savings are a driving factor of fertility tourism and outsourcing. And the U.S. is not alone: For example, immediately following the terrible 2015 earthquake in Nepal, babies – born to Nepalese surrogates, but destined to be raised by the gay male couples who commissioned their births – were airlifted to their adoptive homes in Israel, leaving the birth mothers behind.

In the 1970s amateur feminist health activists and medical professionals in the US, organized feminist clinics and crisis centers, fought for reproductive rights, choices, and self-determination. The Feminist Health Movement (FHM) revived some traditions of lay health care and “people’s medicine” while becoming integral to “second wave” women’s liberation movements. FHM exploded into public culture, the media and politics, with campaigns for the liberation of female desire and sexuality, bodily autonomy, abolition of gender discrimination, equal opportunity in the labor market, freedom and protection of sexual orientation, and demands for women-centered health care, child-care, and reproductive rights. One effect of these demands was an increase in scientific research and medical experimentation with the new bio-technologies of fertility.

In the past 40+ years, feminists internationally have taken varying positions on advanced bio-genetic and reproductive technologies, and their effects on women’s reproductive health and maternal body sovereignty. While many 70s feminists in the

US celebrated the “natural” creative female body, many more welcomed (apparent) advances in scientific and bio-medical technologies such as the contraceptive and abortion pills, ultrasound monitoring of pregnancy, medicalized childbirth, surrogate motherhood, and the development of ART. Other feminist groups launched strong critiques of the new reproductive technologies, questioning the potential dangers of experimental procedures that necessitate women taking massive doses of hormones, protesting the constant monitoring and invasion of women's bodies, and critiquing the eugenic tendencies and instrumentalization (literally) of reproduction introduced by ART, lab-controlled conception, and the separation of sex from reproduction. Since the 1973 birth of Louise Brown – the first IVF baby in Britain – medical and political debates about these technologies have raised ethical, legal, and health concerns about the long-term effects on the bodies and psyches of women and their offspring. Meanwhile, research in medical, genetic, and pharmacological interventions, harvesting and storage of multiple donor eggs, and the genetic “editing” of stem cells and fertilized embryos marches on. It is normal in the U.S. to create an excess of IVF embryos for later therapeutic use, stem cell sources, or speculative experimentation. Wealthy women can access specialized health insurance – some larger companies now encourage female executives to time their pregnancies around their careers by covering the cost of egg and embryo storage – but not maternity leave – while working-class and poor women in most states now have extremely restricted access to birth control, abortion, child care, and maternity leave.

The SmartMom Sensate Pregnancy Dress: [. . .] adapted from military battlefield medicine provides constant monitoring of body systems and data such as heartbeat, blood pressure, fluid levels, nervous functioning, the mother's fantasy life, sexual and eating urges, and the like. . . creating a surveillance system that allows obstetricians to be far more closely informed about h/er patients than in civilian life.

Smart Pregnancy Regulation and Control Systems: Women's intransigence and resistance to control—especially when under the irrational

influence of powerful pregnancy hormones cannot be overestimated. For this reason the Smart Pregnancy dress surveillance system is augmented by an active regulating and control system, which allows the remote doctor to intervene tele-presently in the biological functions of the mother if s/he deems it necessary.

As activist feminist artists, subRosa is committed to continue to research and comment on new developments in feminist health and reproductive technologies, as well as to find ways to represent them critically, accurately, and artistically. Over the years we've experienced both a certain satisfaction when a project has stood the test of time, as well as deep concern and frustration when some of our predictions have become all too real--as we feel is the case with SmartMom and its continuing relevance both to contemporary feminist discourse, and the deplorable on-going neo-liberal and fundamentalist battles about reproductive choice and women's bodies in the US. We despair that hard-won policies of reproductive "choice" for women, gay and transgender people are still embattled nationally, and that reproduction still demands great sacrifices and struggle in the lives and dreams of so many.

subRosa

Competing Interests

subRosa was encouraged by Elena Marchevska to submit an article about our work for this edition of *Studies in the Maternal*. In 2009 subRosa invited Marcevska (nee Jovanova) to present work as part of our special programming at the Performance Studies International conference. In 2005, as a graduate student of Wilding, Marcevska was a one-time collaborator in a single subRosa performance. She is not a member of the collective.

Author Information

subRosa is a cyberfeminist cell of cultural workers researching and producing texts, performances, and situational art-works, about women's lives, labor, and health, in the international circuit of knowledge and power. Hyla Willis and Faith Wilding are the current members of subRosa. Our projects and texts are available for free on www.cyberfeminism.net

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