
Bio-Techno-Media: New Reproductive Technology and Maternity

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1. Beginning of the Question: The “Google Baby” Phenomenon

In many countries, commercial surrogacy is illegal.¹ In the U.S., commercial surrogacy is legal in most states, yet it is left as a luxury for a very few people for the price between 50,000 dollars to 120,000 dollars. In such conditions, many first world women depend on the global surrogacy market.² India, where commercial surrogacy was legal, was given the bad name of transnational hub of reproductive tourism. The high level of biomedical technology and the low treatment cost made India as a “country where transnational surrogacy industry is most prospering.” There is an estimate of about 3,000 fertility clinics in India, 1,400 registered hospitals, and was reported that there were about 30,000 babies born in the year 2015.³ India passed a regulatory bill on surrogacy in 2016 in order to shake off the stigma of being the “baby factory.” According to the new bill, all commercial surrogacy is banned except for Indian couples who are married for 5 years or more. However, commercial surrogacy ban is not completely being enforced up until the present days, in the year 2018.⁴

Commercial surrogacy issue is very complicated. In her writing, “India’s Commercial Surrogacy, Is It a 9-Month Labor?”⁵ Amrita Pande recognizes this work as “reproductive labor,” and argues that such enthusiastic view point allows the possibility of conversion of ideas on commercial

1. “For example, Australia, China, Denmark, France, Germany, Italy, Mexico, Spain, Swiss, Taiwan, Turkey, and few states in the U.S. ban commercial surrogacy.” Heo, R., & Cho, S. (2015). 인도의 상업적 대리모 연구 [Study on India's Commercial Surrogacy]. *Korean Women's Studies*, 31(1), 37.

However, recently, Taiwan is considering legalizing commercial surrogacy as a solution of low birth rate. ‘인구절벽 위기’ 대만, 출산 장려 팔 걷어... 대리모 합법화도 추진 [‘Demographic Cliff Crisis’ Taiwan, all hands on deck for encouraging childbirth...promoting commercial surrogacy]. (2017, April 13). *Yonhap News*.

2. Vida Panitch(2013), “Surrogate Tourism and Reproductive Rights”, in: *Hypatia* vol. 28, no. 2

3. [Surrogacy Industry Prospering even with Baby Factory Stigma](2015, October 31). YTN News.

4. “Commercial surrogacy: The jury is still out on its banning”, *The Economic Times*, Apr. 04. 2018. <https://economictimes.indiatimes.com/news/politics-and-nation/commercial-surrogacy-the-jury-is-still-out-on-its-banning/articleshow/63608455.cms>

5. Amrita Pande (2010), “Commercial Surrogacy in India: Manufacturing a Perfect ‘Mother-Worker’”, *Signs: Journal of Women in Culture and Society*, Vol. 35, No. 4.

surrogacy, through concepts of condition of labor, and the subjectivity of the performer. She asserts Indian women “resist” their reality, making deals with various subjects, through this arduous “labor” that earns them an average of 10-year-worth of income in that area. Their existences alone are the subjects of rupturing the pattern of the organization of blood relative. However, in the interviews of surrogate mothers that Pande quotes, the surrogate mothers “emphasize that the baby’s genes are of the clients, but the blood is theirs.” The following questions arise from this: Are they the “mother” of the embryo, as they gave their blood? Can they be “mothers”? “Are surrogate mothers selling their labor, or are they selling their bodies? Are the parents (clients) purchasing a service, or are they purchasing a baby?”⁶ Again, who is the “mother” here? Is it the owner of the genes, or the body that gave blood? Or the part that pays for the cost, or the part that participates in the reproductive labor?

Today, new reproductive technology intervenes in all direction. All of this targets the fertile body and the pregnant body, and the fetus in that body, and all the fetuses that may be in that body. The fields that lead to experimental and progressive development to this technology is the area of high-tech biotechnology of fertility clinic where capital and business are combined together. An enormous market is created around all the medical and biotechnological treatment that intervenes in harvesting sperm and egg, fertilization, hormone treatment, producing and preserving of embryos, and conception and maintaining pregnancy. Furthermore, the most important part of fertility “treatment” is in the conceivable womb, a womb that is able to maintain pregnancy, and in the surrogate mother.⁷

2. Concepts of the Politics of Posthuman Body: Bio-techno-media

In fact, the market for fertility treatment seems to be a “niche market” that was born from biotechnology. The market does not target everyone. 85 to 90 percent of the population is irrelevant to the fertility treatment market (Spar, 2006). The strong desire to have “my own child” in the trend of irreversible drop in birth rate—how should we understand the reason to this strong desire that energizes the fertility market, maintains the size of its market, take the risk of the time and energy, and sometimes its moral risks? This new reproductive technology that seems like it is not for “everyone” is not the problem of a specific group. It is not a limited diagnosis to say that as the development of new reproductive technology produces new desires continuously, it eventually will

6. Debora L. Spar (2006), *The Baby Business: How Money, Science, and Politics Drive the Commerce of Conception*, Harvard Business Review Press.

7. The types of surrogate mothers can be categorized variously according to the medical and social standards. Surrogate mothers are called commercial surrogacy, noncommercial surrogacy, or gift surrogate according to the purpose of surrogacy. And those who give birth to babies biologically related to the surrogate mothers are called, partial surrogate or genetic surrogacy, and those who only lend their wombs as full surrogate or gestational surrogacy. Lee, Eunju (2008), *기술화된 계약 임신 경험을 통해 본 대리모의 행위성 구성에 관한 연구* [Study on Behavioral Construct of Surrogate Mothers Through the Experience of Technical Contracted Pregnancy] (master’s thesis). Ewha Womans University. 12.

influence everyone.⁸ Rather it is because the discourse involved in new reproductive technology, narrative, metaphor, and the embodiments, and the subjects created as such and the super-subjects have made its place in our world as substances. Therefore, we must examine carefully how the new reproductive technology operates, and what is happening in the world that it dominates, and what factors are intersected and involved. For this, I would like to introduce the concept of “bio-techno-media.”

“Bio-techno-media” is a concept suggested to capture the multi-layeredness of the politics of Posthuman body. That is the body as substance mediated with symbol (in one extreme end the myth of “mother” and maternal ideology, in the other the warning of exploitation of sexual labor “selling one’s body”), biopolitics and bio-economics of global north and global south (in one end the conservative “idea of respect for life” and on the other end the acute bio-capital and product), high-tech biotechnology and genetic engineering, and further, enormous bio-engineering, and the bio-laborers of global south who participate in the human experiments. For all this to be considered, I would like to suggest this concept.

3. Bio: Bio-power, Bio-politics, Bio-capital

Pregnancy and childbirth happen in the “female body.” They are things that female body is responsible and unique to that body. Simone de Beauvoir analyzed that unavoidable biological condition that is pregnancy and childbirth made woman a being tied to the “body.”⁹ If you can control this biological condition autonomously and arbitrarily, then it can make women be free from the limitation of the body, and the biological “circumstance.” In that sense, the advancement of birth controlling technology like contraceptive and abortion meant that in the history of mankind, women for the first time were able to control their own bodies.¹⁰ However, different from the optimism of some feminists in the 60s, the arguments whether the advancement of reproductive technology itself could contribute to women’s liberation, or whether as those critics say it would simply strengthen the patriarchal order, or if it could become a neutral instrument, have not ended (Wajcman, 1991). Also, far from this incomplete debate, the reproductive technology has continuously developed.

On the other hand, the net that crosses this issue, where “women’s body becomes a

8. “There are “many single women who freeze their eggs” in Korea. It is reported that the number (4 times as big in 2years) of those who cryopreserve their sperm or eggs to prepare for late marriage or late childbirth. Around 128 clients requested to have their eggs preserved for ten years with the cost of 3 million Won at the Fertility Center of Cha Medical Center just last year. Frozen eggs are thawed when a woman wants pregnancy and “sperm is injected with a fine needle for fertilization, and when this fertilized egg is implanted in the womb, the woman becomes pregnant” [세상 속으로] “나중에 아이 낳기 힘들까봐” 미혼여성 난자 냉동시술 늘어 [[Into the World] Increase in Egg Freezing Amongst Single Women, “It Might be Difficult to Bare Children Later On”]. (2016, April 10). *JoongAng Daily*. Retrieved from <http://news.joins.com/article/print/19862757>

9. Simone de Beauvoir(2009), *The Second Sex*, Alfred A. Knopf

10. Judy Wajcman(1991), *Feminism Confronts Technology*, Polity Press.

battleground,” is connected to a more global level of problem. Foucault describes the changes in the Western political power after 19th century as transforming from “power that makes you die and allowing to live (sovereignty)” to “power that make you live and allowing to die (bio-pouvoir).”¹¹ Power technology of bio-pouvoir is not something that is not disciplinary. “Unlike discipline, which is addressed to bodies, the new nondisciplinary power is applied not to man-as body but to the living man, to man-as-living being; ultimately, if you like, to man-as-species.”(Foucault, 2003: 242) Bio-politics and bio-pouvoir that Foucault asserts is “a set of processes such as the ratio of births to deaths, the rate of reproduction, the fertility of a population, and so on” (Foucault, 2003: 243). “Biopolitics deals with the population, with the population as political problem, as a problem that is at once scientific and political, as a biological problem ad as power’s problem” (Foucault, 2003: 245).

Bio-politics changes as it combines with neo-liberal economy. After the 80s neo-liberalism and bio-engineering industry shares a desire to overcome ecological and economical limits of growth related to the end of industrial production. At the height of the praise of high-technology in the 1990s, bio-engineering promised the conquest of hunger/pollution/loss of variety of lifeforms/waste, but ecological and bio-political problems related to industry capitalism walked the line of aggravation.¹² In the early 21st Century, Asian economy commenced innovation in the bio-engineering sector. The reorganization of global research space intervened by Korea, Singapore, China, Taiwan, and India, made the geography of bio-engineering industry a lot more complicated. However, the flow of neo-liberal bio-capital definitely requires daily labor “within the living body,” in other words, “donor (or seller)” of body tissue, surrogate mother, and a researcher participating in drug tests, tissue extraction, pregnancy, and blood collection. (Cooper, 2008) Such activities can be seen as something comparable to different forms of high-risk low pay labor that characterizes the post-Fordist service economy, yet they are forms of labor that carries their own unique aspects (Cooper, 2008). Can we deal such activities simply in the frame of “bioethics”? Or can we deal it only in one area of “service labor”?

4. Bio-Techno: Body Intervened by New Reproductive

“New Reproductive Technology” is the biotechnology involved in the process of pregnancy and childbirth. Reproductive technology can be divided into 4 major categories: contraceptive, fertility treatment, prenatal care, and childbirth. As technological intervention of reproductive territory that was considered as something natural has become normalized, the possibility for healthy pregnancy and safe childbirth has expanded gradually. New reproductive technology intervened and observed

11. Michel Foucault (2003), *“Society Must Be Defended”*: Lectures at the Collège de France 1975-1976, Picador, p.240-241

12. Melinda Cooper (2008), *Life as Surplus: Biotechnology and Capitalism in the Neoliberal Era*, University of Washington Press

the whole process into production of sperm and egg, fertilization, conception, nourishment, childbirth, etc. and by doing so rationalized the process of reproduction. The segmentation of each process not only allowed us to check the growth process, but also allowed the termination of pregnancy of defected fetuses, and allowed infertile women who had no choice before to start on a fertility program” (Wajcman, 1991). Such new reproductive technologies include, “the administration of ovulation-inducing drugs, artificial insemination, laparoscopy, invitro fertilization, cryopreservation of embryos, ultra-sound scans.”¹³ The segmentation of the process of pregnancy and childbirth by new reproductive technology objectifies women’s “pregnant body” and “it also supports the naturalization of the scientific management of fertilization, implantation, and pregnancy more broadly” (Balsamo, 1996: 81). Now the whole process of pregnancy becomes the subject of “monitoring” and technological “management,” and the objective of this monitoring and management is directed towards fetus, the “life” that is in the woman’s body.

New reproductive technology produces a new subject called “fetus.” The fetus that enters into the realm of observation from the moment of fertilization,¹⁴ gradually becomes visible as a subject of character. The experts of new reproductive technology emphasize, “the prying eye of the ultrasonogram rendered the once opaque womb transparent, stripping the veil of mystery from the dark inner sanctum, and letting the light of scientific observation fall on the shy and secretive fetus.”¹⁵ The image of fetus created in such a way becomes a “public object” that reveals the origin of life.¹⁶ The development of visualization technology such as ultrasound machines, and through the generalization of professional “reading” and “interpretation” of such images, “the fetus functions as a kind of metonym, seed crystal, or icon for configurations of person, family, nation, origin, choice, life, and future”(Haraway, 1997: 175). “The sonogram is literally a pedagogy for learning to see who exists in the world” (Haraway, 1997: 177). Moreover, the ultrasound imaging is no longer a blob that cannot be read. It reveals an image of personality, a subjectified individual.

Furthermore, the fetus surpasses its status as a life that can be checked, and becomes a “super-subject” that can weaken or remove the individuality of the pregnant woman (Bordo, 2003). On the other hand, “[q]uickening, or the mother’s testimony to the movement of the unseen child-to-be in her womb, has here neither the experiential nor the epistemological authority it did, and does, under different historical modes of embodiment” (Haraway, 1997: 177). In this context, the health of the fetus is prioritized over the mother’s body, and the mother’s body that threatens it is “considered a sin.” The daily use of ultrasound allows the doctor and the mother gradually think of the fetus as an individual. Moreover, in contrast to the fetus that is accepted as an individual, the subjectivity of

13. Anne Balsamo (1996), *Technologies of the Gendered Body: Reading Cyborg Women*, Duke University Press, p.92.

14. “[T]he entity growing in her, off of her, through her (referred to variously as a pre-embryo, embryo, fetus, baby, or child), has some sort of ascendant right (to produce pain, to be nourished properly, to be born) that the maternal body is beholden to.” Balsamo, 1996: 80.

15. Susan Bordo (2003), *Unbearable Weight: Feminism, Western Culture, and the Body*, University of California Press, p.85.

16. Donna J. Haraway (1997), *Modest_Witness@Second_Millennium.FemaleMan_Meets_OncoMouse™: Feminism and Technoscience*, Routledge, p.174.

the mother's body is minimized and marginalized, and at times it becomes the opportunity for guilt and remorse. Susan Bordo takes notice of the fact that at this very point, gradual empathy towards the fetus happens simultaneously with the tendency of not respecting the autonomy of the pregnant woman. And with the super-subject of the fetus taking over the subjectivity of the pregnant body, the womb of the pregnant woman is marked as the "fleshy incubator" (Bordo, 2003: 84).

"Right of fetus," the discourse that creates the super-subject status of the fetus, the images that make life itself to be a subject of sharable experience, and the "womb as an incubator,"¹⁷ which is correlative of the independent subjectivity must accept the intervention and management of new reproductive technology. Commercial surrogate is in the context of new reproductive technology that defines the mother's body as "fleshy incubator." The embryo or the fetus is an independent individual, and it needs a temporary place of nurture, the mother's body. For the survival of this "super-subject" surrogate mother provides "blood." Here the mother's body is reduced into a temporary place where two different individuals are "parasitic" and "coexist." Then, what is the "body" here? Is the body a "subject" of possession and occupation?

On the other hand, the success rate of reproductive assistant technology is still very low.¹⁸ As the fetus establishes as super-subject, a conservative discourse on abortion is made, and the monitoring and management of the pregnant woman for the health of the fetus are justified. However, in contrast to this identical situation, there are embryos and fetuses that are excessively created, neglected, and thrown out. How are embryos that failed to be conceived and the fetuses that couldn't be maintained treated? Are they life? Should they be treated as life?¹⁹ In this context, the discussion and the practice of "embryo adoption" by the conservative antiabortionists in the U.S. have brought the effect of creating cryopreserved embryos as a new life (Spar, 2006). Through programs to send for "adoption" of cryopreserved embryos created by in vitro fertilization treatment but those that are not conceived for many reasons, a cheaper market for cryopreserved embryos has been created compared to in vitro treatment or child adoption. Moreover, babies that are conceived from this "adoption" program are actually waking up from the cryopreserved state and are being born. Then is this embryo, as the program manager says, were "babies waiting to be born"?

17. The title *The Drama of Life Before Birth* given to series of fetal photographs in the 1965 *Life* Magazine that Haraway mentions, suggests many things. Fetus becomes the Sacrament (the body of Christ) of technology, as the signifier of life. Likewise, it is justified that fetus to live in another body, and that body can be constructed as an incubator that maintains life. Haraway, 1997: 178.

18. There aren't any statistics for the success rates of surrogate births. However, one participant in Lee Eunju's (2008) experiment failed in all three trials of conception." Hochschild's report also shows that surrogate birth trials are hard to succeed. Arlie Russell Hochschild (2013), *Outsourced Self*, Picador. However, in a 2001 data from the U.S. Center for Disease Control shows that the success rate of pregnancy with one assisted reproductive technology and the birth rate of normal child remained around 30%. Spar, 2006.

19. "It is estimated that there are about 200,000 embryos left after being used for In Vitro treatment globally, and among them about 100,000 are preserved in Korea, making it the greatest reserves for the remainder of frozen embryos." Chung, Moon Young, 2009: 305.

5. Bio-Techno-Media: “Womb” and Maternal Myth

New reproductive technology ruptures the idea of the traditional meaning of parents. Reproductive technology like in vitro treatment, in other words “embryo manufacturing” and full surrogate birth disturbs the link between genetic parents and biological parents. Whose sperm and egg meet to be conceived in what body? And by whom is this planned and what process does it go through to be completed? Who pays for it, and what body endures this process? Now childbirth is no longer enough to confirm the biological mother. If woman who are pregnant and give birth are accepted as the baby’s “mother” as a fact before the intervention of new reproductive technology, the appearance of commercial full surrogates makes this connection impossible. Then, are surrogate women beings that create conflict in maternity and the maternal right because of this fact? In spite of all disturbances and conflicts, surrogate mothers cannot be a true conflict to the predominant maternity and the maternal right. The reason is there were never “rightful” and “natural” maternity and maternal right from the beginning. Also, the position that these surrogate mothers were put into is any different from the culturally constructed, denatured nature’s “ideal mother’s” position.

Who is the “mother”? who can become a “mother”? Friedrich Kittler states that it was in 1800s when ideal “mother” made its appearance in Germany. This “mother” is the nurturing mother.²⁰ The alphabet educational books that poured out around the year 1800, first teaches the mothers how to teach their children. The “teaching of alphabets” that the mothers had to learn is not the letters but phonetics. To teach accurate and standardized pronunciation, the mothers had to learn about their mouths first. Phoenetic teaching methods produces an ideal “mother’s mouth.” This ideal “mother’s mouth” produces archetypal voice. “That voice for the first time in history teaches to pronounce “as the language requires”” (Kittler, 2003). Here Kittler points out that mothers teach their children pronunciation but they do not have a language to express themselves, and thus they become the medium to reproduce ideal sound and to teach like an automatic machine. Traditional and empirical language acquisition method is “denaturalized” through alphabetized phonetics education, and this denaturalized, namely a well-trained ideal “mother’s mouth,” is the medium that allows to reach the true “nature’s” language. Cultured nations of Europe in the year 1800 commands mothers to teach their children that way.²¹ “It is not simply to have humans be pregnant of humans, but that there should be more **mother-like mothers.**” “This is the historically new “women’s mission”” (Kittler, 2003).

As mentioned by Kittler, in the 19th Century education that teaches mothers on maternity started to make its appearance in Europe. For example, a German pedagogist Friedrich Fröbel argued

20. Around the year 1800, “many books advising mothers to teach their children alphabets after they nurture them physically and mentally, suddenly started to pour out” Friedrich A. Kittler (2003), *Aufschreibesysteme 1800-1900*, Wilhelm Fink Verlag.

21. Kittler quotes Von Türk (Von Türk, 1806). “the responsibility of a nation is to educate its daughters to become great mothers in the future, and to do the best to entrust the mission to educate and to nurture its future men and women for the first time, to more capable people.”

that they should teach maternity to mothers. According to Christina von Braun, along with this pedagogical command “mothers cannot be mothers **on their own** and should be **made** mothers by force.” Likewise, “nature created by logos and the gradually created heteronomous “maternity” replaces nature that is not written in words.”²² Mothers cannot discover their “nature” without the support of an educator. “Mother’s love” given by nature must be educated. And the “nature of maternity” that needs to be educated, as pointed out by von Braun, is the mother’s “selflessness and self-obliteration.” In maternity, pure “normality,” and “nature” must function and not the mother’s ego, and to do so mothers must become beings without ego. In contrast, mothers who argue for ego, will, and activeness means “anti- maternity.” To become an “ideal mother,” woman must become an empty opportunity. “Ideal maternity” carries the peculiar commanding system where nature and culture, and nature and culture overlap. And today, the dominant ideal of “mother,” the general discursive system on the nature of maternity seems to originate from this duplicity of modern, enlightened, European “mother” making.

6. Ending with a Question

If all the discussions related to reproduction labor of “mother,” that is reproduced and modified by new reproductive technology were done mainly on bioethical issue, discourse and active interpretation on women’s agency, controversy on commercialization of reproductive technology, and feminist’s evaluation and criticism on biotechnology, now the discussion on this problem must be expanded and turned over. To expand this viewpoint, if we understand the specific body (its space) where biotechnology (bio-techno) is applied, as “media (medium/agency)” then we would be able to question the complexities of this situation in not only the inner and outer boundary and the dichotomy of body-symbol, life- materiality, organism-machine from outside of biological essentialism, but also the conflict of activeness and passiveness in the disturbed state. The factors that must be added for the turnover of this expanded viewpoint are: formation of ideal “mother” and the myth of “mother’s work,” biopolitics of global north and global south, internal and external disturbance of the body, the question on the boundaries of life and materiality, and the ghost of dichotomy of culture and nature, or technology and nature that is already dismantled. Likewise, we need “to construct the analytical languages – to design the speculums – for representing and intervening in our spliced, cyborg worlds” (Haraway, 2007: 406) For this I suggest the concept “bio-techno-media” as the analytical language, the microscopic examination.

22. Christina von Braun (1985), *Nichtich*, Neue Kritik.