15. Transplanting the Uterus
A Reproductive Justice Perspective

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1. Introduction

On April 2015, a headline on *The Guardian* (a UK based popular English Daily) read "Baby born from grandmother's donated womb" (Guardian 2015). The article reported the birth of yet another baby boy from the pioneering procedure of uterus transplantation (UT) at Gothenburg in Sweden. The transplanted uterus as stated came from the grandmother of the child born. A very similar headline from India appeared in 2017, which read 'Mom donates womb to daughter in India's first uterus transplant'. Later in 2017, it was reported that the first child born through uterus transplant in the US was conceived using a uterus donated by a registered nurse. It seemed like this new technological advancement had just opened up yet another avenue of gendered responsibility – the moral duty to enable another woman get pregnant by donating a functioning uterus. It provided not just a reproductive alternative for women (including transwomen) to reverse their infertility but also raised questions about the ethics of access, the moral obligations to embrace a risky surgical procedure and the rights to do the same. Although UT is a transplant procedure, the reason for performing and undergoing a UT procedure is reproductive. Hence, I find it extremely crucial to approach the ethics of performing UT through a reproductive justice lens.

UT is a novel experimental procedure designed to provide a clinical remedy for absolute uterine factor infertility that affects 1 in 500 women of reproductive age (Johannesson et al. 2014). This can be caused by hysterectomy for a malignant uterine tumor, benign diseases such as leiomyoma and adenomyosis, postpartum hemorrhage, or a congenital defect such as Mayer-Rokitansky-Keuster Hauser (MRKH) syndrome (Kisu et al. 2018). The process requires transplantation of the uterus from donor to recipient to reinstate the latter's childbearing capacity. The first successful UT procedure was carried out by the same transplant team in Sweden and the first successful childbirth through UT occurred in Sweden during early 2017. Trials in various other countries are now underway (Petrini/Morresi 2017).

Although UT can be performed from both deceased and live donors, all successful UT in Sweden, USA and India have, to date with the exception of Brazil and Ohio (Cleveland, USA), came from live rather than deceased donors (Brännström et al. 2015; Pritchard 2016; Banerjee 2017; Lang 2019). Thus, it can be expected that live uterine

transplants would be the dominant form and would give rise to yet another routinized form of clinical labor. If clinically introduced, both deceased and living UT is likely to garner popularity, given the current global demand for surrogacy. This is likely to give rise to new forms of biointimacies that are uniquely regenerative and raise ethical and legal dilemmas, which cannot be neatly resolved by reference to existing protocols on other forms of bodily donation such as kidney or liver. Although scholars have started identifying the possible ethical challenges and risks underlying the use of UT in respective countries (Arora/Blake 2014; Hammond-Browning 2016), it remains to be seen how UT will be made available as a fertility option around the world.

The rates of clinical trial successes has established UT as a 'hope technology' (see Franklin 1997) like most other reproductive and transplant technologies. With each successful trial, the surgical procedure is continuously evolving and has led to the pioneering of a range of efficient surgery techniques from open to robotic to laparoscopic (Sánchez-Margallo et al. 2019). With the recent success in a robotic assisted uterine procurement and follow-up, doctors have brought down the time of the procedure by almost half, claiming to have devised a technique that completes surgery for donors in 7:50 hours and that of the recipient in 6:50 hours as opposed to the previous duration of 11:50 hours as recorded by the Swedish team (Wei et al. 2017). A team at Baylor in the US has further brought down the surgery time to five hours for the donor and recipients each. There has been a quick uptake for UT research in countries around the world. So far, twelve countries have already performed successful transplants, 42 women worldwide have received transplanted wombs, over 20 babies have been born until early 2019 in Sweden, USA, Serbia, India, Brazil and Germany (Hammond-Browning 2019; Williams 2018; Scott/Wilkinson 2018; Fabian 2019; Lan 2019) and more trials are on its way. Thus, it only seems reasonable to expect a swift clinical uptake of this procedure in the coming years (see table 1).

With various lines of trials lined up and an overwhelming number of women enquiring about the trial, the ethicists and transplant teams are already contemplating about the ways in which UT could be made available in particular countries. However, unlike other organ transplantation procedures, UT selectively targets women's bodies to achieve biological reproduction. This makes it a gendered procedure. Ethical discussion around UT thus needs to overtly account for the gendered aim and nature of this transplant procedure. Therefore, approaching the medical and social implication of the procedure from the social, political and economic positioning of the women involved in it as donors and recipients is likely to provide a gender sensitive frame for understanding UT. This chapter thus opens up a discussion on the ethics of UT using a reproductive justice approach to offer an ethical analysis from the vantage point of women's (re)productive roles in society.

Year of First Trial	Country and Research team	First successful live birth	Donor and recipient details	Source
2013	Sweden, University of Gothenburg	2014	Live donor (family friend). recipient number five in the original Swedish trial	Radio Sweden 2014
2015	China, Xijing Hospital in Xian,	2019	Live donor mother of the recipient, recipient was a 22-year-old without a uterus or vagina	Pinghui 2015
2016	USA, Cleveland Clinic	2019	Deceased donor, recipient was in mid-30s with uterine factor infertility[1]	Scottie and Saeed 2019
2016	USA, Baylor University Medical Centre at Dallas	2017	Live donor 36-years-old registered nurse, recipient with absolute uterine factor infertility	Sifferlin 2017
2016	Germany, University hospital of Tübingen	2019	Live donors, two recipients both born with labia but without a vagina and uterus	Schmidt 2019
2017	India, Galaxy hospital Pune	2018	Live donor who was the mother of the recipient, recipient was 28-year-old with non-functional uterus after abortion and a miscarriage	Thompson 2018
2016	Czech Republic, Prague Motol hospital	2019	Deceased donor, recipient was 27-year-old	Willoughby 2019
2016	Brazil, University of Sao Paulo	2017	Deceased donor, 45-year-old mother of three who died from a rare type of stroke; recipient was a 32-year-old woman born without a uterus	Weintraub 2018
2017	Serbia, University Children's Hospital in Belgrade with Swedish Team	2020 (IVF procedure and the birth took place in Sant'Orsola Hospital in Bologna, Italy)	Live donor the identical twin of the recipient, recipient was a 38-year-old Serbian woman, was born without a uterus due to a congenital malformation	Uterus Unique 2018
2018	Lebanon, Bellevue Medical Centre in Mansourieh			Hovsepian 2018

Table 1: A Timeline of the Ongoing Uterus Transplant Trial Successes around the World

1 https://edition.cnn.com/2019/07/09/us/first-us-baby-transplanted-uterus-of-dead-donor-trnd/index.html (accessed June 29, 2020)

The concept of reproductive justice was developed by the SisterSong organisation in the US. This approach combines concepts of reproductive rights, social justice and human rights to argue that reproductive justice can only be achieved when women have suitable life conditions in place to make their reproductive health decisions (ACRJ 2006). Hence, it upholds that reproductive polices need to focus on the societal needs and group sentiments to understand the rationale behind women's reproductive decision-makings. The underlying assumptions defining the ethics of UT from a reproductive justice standpoint is likely to account for the larger societal factors that impacts women's understanding and engagement with this reproductive option of UT. While this concept overlaps with the concept of ethics of justice, keeping reproductive justice at the center of the discussion on ethics of UT helps specifically account for the tensions shaping women's reproductive roles in society and their relationships with technological interventions.

Therefore, this chapter aims to discuss how a feminized need for fertility, responsibility to donate and the decision to undergo UT deserves a separate ethical and legal framework. Methodologically this chapter is offering an ethical analysis using a normative critique of the UT debate from a feminist standpoint. The analysis is carried out at the backdrop of the ongoing ethical and legal debates from around the world on UT and by narrowing down on issues that specifically requires a gender sensitive explanation. The ethical assumptions steering the discussions in the chapter is enhanced by a reproductive justice approach. In the following section, I will start by outlining the recent debates and ethical issues flagged out by different scholars. This will be followed by a discussion on the key ethical dilemmas that deserves further exploration.

2. Ongoing Ethical-Legal Debates on UT

UT is both an organ transplant procedure as well as a fertility option. Hence, debates on UT are divided on the lines of *transplant ethics* and *reproductive ethics*.

2.1 Transplant Ethics of UT

2.1.1 Allocation

From the perspective of transplant ethics, there has been concerns regarding the grounds for allocation of uterus, preferences between deceased and living UT and the risks associated with the transplant procedure. The donor registry coordinators in the UK have estimated the availability of only five cadaveric uteri per year (Jonston 2015). Although the introduction of presumed consent might improve the number, it is unlikely to meet the demand for 15.000 women with uterine factor infertility in the UK and 50.000 in the USA, who suffer from urine-factor-infertility (UFI) annually (Zaami et al. 2019). Moreover, unlike other organ transplantation procedure, the principle of the sickest or best prognosis or the longest in the waiting list cannot apply for UT because every woman eligible for UT will have the same chances of success (Persad et al. 2009; Bruno/Arora 2018). A process of fair allocation of uteruses therefore becomes a concern for UT. In addition to medical criteria for donor-recipient matching, some have argued for a ranking system for organ allocation prioritizing those who have difficulties in finding an appropriate donor or are towards the end of their reproductive

years (Bayefsky/Berkman 2016). Similarly, low priority has been proposed for those who have gestated and have given birth (Bruno/Arora 2018). Proposals for ranking criteria for uterus recipients based on age, motivation, child-rearing capacity, a minimum financial stability, criminal record check and amount of infertility treatment required has also been in circulation (ibid.). Additional proposed criteria for ranking include a comprehensive evaluation by social worker or psychologist about one's ability to rear a child (ibid.). However, proving recipient's childrearing capacity through comprehensive assessment is seen by others as regressive, who have suggested keeping the requirements limited to adoption screening criteria (Bayefsky/Berkman 2018). Again the criteria concerning the number of children of the recipient has been deemed as unfair since women may desire for additional children as strongly as those without children (Wall/Testa 2018).

Since at present, childbirth after uterus transplantation take place through in-vitro-fertilisation (IVF), it is argued that one's ability to procure embryos be considered as a criteria for inclusion in the donor registry (Bruno/Arora 2018). This clause has been rejected by others since procuring embryo just for being listed would imply women having to undergo IVF without knowing if they will be listed high enough to actually receive an uterus or whether the procured embryo has the actual potential of creating a successful pregnancy conception (Bayefsky/Berkman 2018). Moreover, in future if UT surgeons are able to connect the new uteruses to the fallopian tubes, some recipients might not require the embryos at all (ibid.).

Testa et al. (2018) however argue that for the purpose of uterus allocation, listing and prioritization needs to be dealt separately. The principle of utility and justice for organ allocation as per the Organ Procurement and Transplantation Network (2017) would not hold true for uterus because the utility of a donated uterus can only be defined by the birth of a child and hence all women in need of UT will have the same likelihood of a childbirth. If all potential recipients have the same level of infertility, then waiting time would become the proposed determining factor for organ allocation based on the principle of justice (Testa et al. 2018). However, the ground of defining the waiting time still remains to be decided.

2.1.2 Preference of Deceased versus Living UT

Uterus allocation through deceased donation has been considered to be insufficient because a substantial number of potential deceased uterus donors might have already undergone hysterectomy (Shapiro/Ward 2018). Since deceased donors cannot provide sufficient number of uterus for donation, living donation is likely to be the norm. Although the principle of autonomy has been placed as the ground for respecting living uterus donation, concerns are being raised about UT becoming a coercive practice because till date, donors in UT trials have been mothers or grandmothers of the recipient (Brannenstorm et al. 2014; Shapiro/Ward 2018). Given the harm associated with living donation, along with the possibility of regret and potential threats to donor autonomy and consent; deceased donation has been proposed by some as the preferred model for uterine transplants (Williams 2016). There has been debates on the time of uterus retrieval with ethicists arguing for uterus removal be done after the procurement of other vital organ due to its no-vital role. However, others have suggested its retrieval before cross-clamp and hence before the procurement of other vital organs in order to ensure substantial improvement of uterus quality (Testa et al. 2018). Yet

there remains a small risk in terms of viability of other organs. Moreover, if the loss of organs can be avoided with the help of an experienced team and an optimized protocol, supplementary tests would need to be performed on the deceased donor to determine if she qualifies as a uterus donor and seek consent. This may delay the removal and transplantation of vital organs (Mertes/van Assche 2018). Others hope that progress in regenerative medicine and 3D printing could meet the shortage of organs and foreclose the need for living uterine donations (Corin et al. 2018; see also chapter 17 in this book).

Further, other experts have have pointed out the benefits of living donor hysterectomy over deceased donation as the former can provide comprehensive medical history, offer the recipient to be physically and emotionally ready and can be timed in a way to minimize the time between donor hysterectomy and implantation (Wall/Testa 2018). In case of deceased donation, concerns have also been raised about the consent to donate uterus. Blanket consent for posthumous donation in the UK under the National Health Service (NHS) that was given several years ago when certain tissues and organs were not a part of the registry is often treated the same way as blanket consent today (Williams 2018). Therefore, questions have been raised whether it's justified to retrieve tissues without knowing if potential donors are aware of uterus donation as an option and are willing to donate to an experimental procedure (Williams 2018). While some have argued for the surrogate consent to be inappropriate unless one has expressed the desire to donate while being alive (Bruno/Arora 2018), others have argued that the surrogate consent is not just mere reporting but is rather a substituted judgement using knowledge about the donor's personality and interest (Williams 2018).

2.1.3 Risks

Like all other transplant procedures, concerns have been raised about the risk of an experimental transplant procedure that has long operative time and is non-vital (Bruno/Arora 2018). However, the risks of donor hysterectomies are well known and recent robotic and laparoscopic procedures have only brought down the risks by implementing a safer technique using utero-ovarian veins as the sole outflow of the graft (Testa et al. 2018). Moreover, the uterus is seen to have exhausted its function and hence the risks to donors are limited to the transplantation process itself and not beyond (Wall/Testa 2018).

Again while ethicists have highlighted the potential psychological risks for living uterus donors, others have argued that the potential psychological benefits of being able to help cannot be ignored (ibid.). Yet the health risks of undergoing a hysterectomy and narcosis by the donors cannot be underestimated. The risks and harms of living UT are similar to that of a total abdominal hysterectomy. Although the risks are expected to lower with advances in clinical trials, so far living donors have experienced complications requiring surgical, endoscopic or radiological intervention under anesthetic and have experienced infections, urinary hypotonia, leg and buttock pain, and depression (Donovan et al. 2019). Further, it is pointed out that health risks to the recipients and the future child is often neglected in order to respect the informed consent of the former to undergo the procedure and undertake those risks (Robertson 2016). The recipients need to undergo three invasive surgeries – transplantation, caesarean section and removal of uterus that carry sufficient risk. Further, MRKH is usually accompanied by renal problem that can contribute to pregnancy complications.

Moreover, studies have shown that young women who have been on the same immunosuppressant as that of UT, experience prematurity, hypertension and preeclampsia (Armenti 2008; Shapiro/Ward 2018).

Moreover, the donor surgery is argued to be more exhaustive than routine hysterectomies, as it takes 10 times the duration and is associated with a higher rate of ureteral injury (Shapiro/Ward 2018). The impact of immunosuppression, even if for a temporary period of few years cannot be considered as trivial to the health of a woman (ibid.). This makes childbirth risky when the goal should be safe childbirth (Mertes/Assche 2018).

3. Reproductive Ethics of UT

From the perspective of reproductive ethics, several key concerns have been raised regarding the implications for clinical introduction of UT as a reproductive option for those in need. There have been four main concerns regarding: *the value and meaning of gestational ties*, the *existing guidelines on parental rights, foreclosing of other reproductive alternatives, and transgender reproductive rights.*

3.1 Value and Meaning of Gestational Ties

While UT offers women with the chance of having their own pregnancies (Catsanos/Rogers/Lotz 2013), ethicists are concerned about the questions regarding *the value and meaning of gestational ties*. It has been pointed out that UT raise questions about the social embeddedness of value attached to gestation and its comparison to the value attached to genetic and social parenthood (Williams et al. 2018). Shapiro and Ward are of the view that "It is difficult to conceive how the experience of gestation, especially without parturition, can be sufficiently important to justify the risk to all parties involved in UTx [UT]" (2018: 36). Concerns have been raised about overt valorization of gestation in attempts to justify the significance of UT as it risks portraying life without gestation to be bad, even when gestation is desired (McTernan 2018). Since UT involves both a transplant and assisted reproductive technology (ART) procedure (at this moment), it imposes higher costs and risks on the donor and recipient and questions the permissible amount of risks for both donor and recipient on the pretext of enhancing quality of life (Williams et al. 2018). While some women with UFI may still opt for surrogacy and adoption, argument has been made that the desires of women who choose to use UT to attain motherhood through pregnancy cannot be denied (Testa/Johannesson 2017).

3.2 The Existing Guidelines on Parental Rights

Concerns raised by ethicists on parental rights matches the *existing guidelines on parental rights* during surrogacy and gamete donation. Once donated, the uterus is considered as the "property" of the recipient and thus the transplant team is asked to ensure that the donor and /or their family members understand that they will have no parental right over the future child born using the donated uterus (Bruno/Arora 2018). Further, it is proposed that until the child reaches 18, all contact between the child and

the deceased donor's family or living donor should be done through the parents out of respect for the parents' right to choose a birth story (ibid.).

Ethicist have also argued at length about the funding of UT by a public health care system or its coverage under insurance without which it is likely to further widen the inequality of access to reproductive options. Concerns have been raised over funding of a non-life saving procedure by insurance or public funds. Blake (2018) says UT in a private health care system like the US cannot be covered unless health care in general becomes more widely equitable. Since many groups in the country have historically suffered inequality in access to infertility services and childbirth, UT cannot be prioritized. Sandman (2018) looks at the Swedish health care system that is publicly funded to argue that whether UT could be seen as a treatment for absolute uterine infertility (AUIF) should depend upon the relative severity of AUIF as compared to other health care needs and on the effectiveness and cost of UT in comparison to other reproductive alternatives like adoption and surrogacy. Others like Wilkinson and Williams (2015) argue that the case for not funding UT through a public health system like that of the NHS in the UK is rather weak. They are of the opinion that infertility can be viewed as a disorder due to the clear biological causes and effects. So the absence of sufficiently good alternative that could replace UT makes it a case for being funded. However, in order to be funded, UT needs to be established as a safe and cost-effective option and if surrogacy laws get reformed, the rationale for funding UT could get weak (ibid.).

3.3 Foreclosing of Other Reproductive Alternatives

Offering UT as a reproductive alternative is also seen as creating *potential harm* to the position of adoptable children (Lotz 2018). Thus an unintended consequence of offering UT would be to keep people from considering adoption as an option (Shapiro/Ward 2018). Moreover, it is argued that the introduction of UT frames the right to bear a child as not just liberty but claim and hence reinforces a life without birthing a child as a lesser life (Mertes/van Assche 2018). Since UT is often presented as an ethically less problematic alternative to surrogacy, Guntram and Williams (2018) studied the 2016 Swedish government white papers, which considered amending Sweden's existing policy on surrogacy to permit altruistic surrogacy. They showed how the arguments held against surrogacy can also be used against UT. They argued that nations banning surrogacy on moral grounds need to maintain consistency and ban UT as well. But then again, ethicists have argued against offering a simplistic ethical mapping of UT by suggesting a ban. Instead, restrictive measures through regulation by ensuring delay in access to treatment and strict counselling sessions has been recommended as ethical alternatives (McTernan 2018).

3.4 Transgender Reproductive Rights

A debate on UT is incomplete without addressing the possibilities that it creates for *transgender and potentially male reproductive rights and justice*. UT could be a path for transgender pregnancy and in future developed for male pregnancy (Alghrani 2018). However, ethicists remain concerned about the social feasibility of making UT available to transwomen in practice. Given the heteronormative reproductive practices that dominate social mindsets, it is apprehended that while a prospective donor might be

willing to donate uterus to a woman with congenital defect, they might not be willing to do the same for a transwoman. Thus, a strategy of organ allocation that includes even transwoman is yet to be established and their disadvantaged position needs to be taken into consideration during framing policies (Spillman/Sade 2018). Moreover, policies directing towards cis-women for uterus allocation by placing clauses like bring your own egg and others might keep transwomen from attaining their goal of becoming a "woman in full" (Spillman/Sade 2018: 33).

4. Ethical Discussions around UT through a Reproductive Justice Lens

Based on the above discussed transplant and reproductive ethical concerns raised by ethicist regarding the introduction and acceptance of UT as a transplant and fertility alternative in near future, three issues emerge that requires further discussion. The first ethical issue revolves around the designation of UT as a 'non-vital' transplant procedure that simply improves the quality of life and the impact of this categorization on uterus retrieval procedures. The second issue concerns the strategy of uterus allocation and listing and the gendered position of the donor in the process. The third issue revolves around the questions as to whether UT needs to be regulated as another transplant procedure like the other Vascularized Composite Allograft organs (VCAs) or needs to be recognized as an ART. In the following section, I will take up each of these three ethical issues one by one and demonstrate the benefits of approaching the ethics of UT through a reproductive justice approach.

4.1 UT as Improving Quality of Life, Non-Vital Organ

The first ethical issue revolves around the designation of UT as a 'non-vital' transplant procedure that is not life-saving but simply improves the quality of life (Caplan et al. 2007). UT however, is also seen as strengthening reproductive desires to achieve fertility through a risky procedure that could have been avoided in its absence. But once a reproductive technology is clinically introduced and the risks are deemed ethically acceptable by experts, its life changing potentials are tough to deny. While ethicists have discussed the importance of enhancement of quality of life for women who need UT and their moral right for the same, UT still continues to be categorized as non-vital due to its non-life saving role. Bruno and Arora (2018) argued that all lifesaving organs should be removed from the body first before the removal of the uterus. However, others are of the opinion that UT's potential for improving quality of life could be more than other lifesaving transplants like heart or kidney.

Although, UT requires women to undergo a round of risky surgical procedures that includes oocyte extraction, organ transplantation, embryo transfer and hysterectomy, the procedure is demonstrated as 'safe' through the recent successful childbirths. The procedure is also likely to advance further in future to minimize risks and errors. Thus, there remains little rationale behind denying women their rights to access UT once its clinically available. In order to decide on the circumstances under which UT needs to be made available and whether uterus as an organ requires more credit than just being categorized as non-vital, one needs to understand the changing meaning of the uterus made possible through its novel transplantation. The previously 'dormant', 'vacant'

uterus or the ones that would become wasteful through hysterectomy now holds a vital future.

Kalindi Vora (2015) outlines that vital organs can be understood as an essential part of one's body and life and can be freed only after being constructed as 'extra' or not needed in its current site by the biomedical discourse. Uteruses like other 'vital' organs (e.g. kidneys) are suddenly seen as surplus once medical technologies are able to utilize and transfer its vitality to another human's body that lacks the same. In the context of organ and tissue donation, it is argued that a fantasy for a regenerative body brings out bioeconomic value from the bodies of others and creates a demand for new sites of surplus (Waldby/Mitchell 2006). Fertility is known to be an innate desire even if socially constructed and validated but is still a powerful desire. Thus, by offering the hope to regenerate the fertile capacities of the recipient, the novel technique of UT creates new sites of surplus, which when extracted and accumulated can prove to be vital for its recipients. The novel transplant technology and social desires of gestating and birthing a child becomes sites of (re)production of the vital capacity of the uteruses. Biology and biological substances are made to matter through the imagination of biotech practitioners and social analysts (Helmreich 2008). Technological possibilities and social desires thus create the avenue of birthing through UT and its mere possibility is likely to turn its desirability as a quintessence for its recipients. A first glimpse of that is already seen in the turnout of women who have registered their interests in the various UT clinical trials all over the world.

In the context of IVF, we know that people do not feel they have tried enough until they have exhausted all their options because even failures can grant the satisfaction of trying (Franklin 2010). UT has thus turned uteruses into a biocapital for the uterine transplant industry by making the procedure available as a reproductive option. Biocapital is discussed by Franklin and Lock (2003) as a form of extraction that involves isolating and mobilizing the primary reproductive agency of specific body parts. Therefore, once the vitality of uterus becomes an extractable commodity, the process of transplantation turns it into a biocapital for the transplant and fertility industry converting it into a vital asset for those who lack it. The vitality of the uterus thus becomes an indispensable reproductive asset for the recipient for whom UT becomes the ultimate means of gestating and birthing a child through their bodies. Although ethicists are of the opinion that undergoing such a risky procedure just for the experience of gestation might not be ethically justifiable when childbirth through the same is tentative, it is the hope for a successful gestation and the social construction of attaining motherhood by experiencing gestation and birthing that makes yet another 'hope technology' like UT highly desirable.

Now that UT is a possible birthing option, the inability to access the same unless one consciously chooses to dismiss this option, is likely to lead to gendered suffering for those women 'in need' (including transwomen). Hence, even if non-life saving, UT is likely to become a vital procedure for many due to what it makes possible. Also unlike other non-life saving transplants like face and hand grafts, UT is temporary and do not hold the same risks of undergoing life-long immunosuppression. While, other non-vital transplants pose similar ethical and moral challenges, unlike face transplant or hand transplant, UT is temporary and involves transfer of reproductive capacity and not a permanent transfer of a physical image or a visible body part, which has its own ethical complexity to cope with. The visible output of the transfer of reproductive

capacity through UT is the birth of a child and concerns have been raised about the relational dynamics between the child born out of a transplanted uterus with their known donors. Yet studies on surrogacy have shown such relationships not necessarily causing complexities but often expanding the definition of kinship and giving rise to new roles. Thus, even if it is non-life saving, UT is likely to become indispensable for cis-gendered women[2], who are now aware of its availability as an option as well as transwomen for whom UT, once it becomes compatible for trans-reproduction can be the sole way of attaining biological motherhood. Under such circumstances, by taking on a reproductive justice perspective, one needs to break beyond the vital and non-vital or lifesaving and life enhancing dichotomy and not rank the uterus below other life-saving organs. The procedure requires recognition on its own right and for the gendered dimension attached with it.

Thus, although procurement of vital organ are often prioritized, the ethical importance of a potential good life offered by UT cannot be dismissed (Vong 2018). It has even been argued that if a transplant donor qualifies all listing criteria and has the possibility of retrieval of either heart or uterus, uterus should be retrieved as it will offer a higher quality of life (ibid). UT recipient is likely to give birth to another life whose average span will be higher than the heart transplant recipient and UT is going to improve the quality of life of two persons. On certain occasions, when vital transplants are not likely to improve quality of life significantly while UT can potentially improve quality of life of the recipient, it is argued that there is a need to move away from the typical procurement priority (ibid.). However, although it is argued that UT can at times offer a better quality of life than other lifesaving organ transplants like heart, I would like to argue that life-saving transplants still ought to deserve priority until technological progress can end the need for such prioritization. According biological reproduction a morally higher place over life-saving procedures could essentialize reproduction and offer oppressive frames for women. Having said that, I would also like to argue that procedures for procurement of uterus from deceased whole-body organ donor should be conducted in a way to ensure safe retrieval of uterus. The right of women and transwomen to access a transplantable uterus, if they are clinically suitable to undergo the procedure, should not be constrained should they have the means to do so (financial/insurance, donor available) due to its significance in their lives. Hence, it will be important to prioritize the advances in transplant medicine that would allow for its safe retrieval after the removal of other solid organs. If the same is not possible, techniques for uterus retrieval consuming minimum time prior the retrieval of other vital organs can be considered by transplant scientists as long as that does not risk safe retrieval of other organs. If the same is not possible at all, living UT is likely to become the preferred mode of uterus retrieval even if there is clinical evidence in future about the same success rate and risks of using both types of donation options. Therefore, it might be important to take into account the urgency and vital role of uterus in the lives of its recipients and work towards devising a way for its efficient retrieval.

Making UT a solution might overshadow the sufferings of unsuccessful recipients of UT for whom UT is inaccessible or those who remain involuntary childless for causes other than uterine infertility (Mertes/van Assche 2018). Thus people who cannot afford or access UT would be put on a loop of suffering. Yet once clinically made available, it

2 Cisgender is a term for people whose gender identity matches the sex that they were assigned at birth.

is tough to prevent people from desiring for UT and hence care needs to be taken about their efficient and fair access without passing on the burden to the potential donors.

4.2 Uterus Allocation and Gendering the Gift of the Donor

The second ethical issue concerns the strategy of uterus allocation and listing. Organ registries for UT cannot be maintained in the same way as that of other organs like kidney or liver (see chapter 9 in this book). It is tough to prioritize recipients in the listings since every recipient with birthing potential will have the same utility of the UT unlike other transplants where such prioritizations are done on the basis of its utility for the donor (Williams 2018). This requires a major amendment of organ allotment laws across countries. Moreover, as clear from various reports and articles, live uterus donation is likely to be a norm and given the shortage of live organ donors in various parts of the world the question remains as to whether and how demand for uteruses can be met. While several countries have or are moving towards deemed consent (see chapter 2 in this book), even if deceased UT becomes an option, deemed consent as discussed above, is unlikely to meet the high demand of uteruses required for UT around the world. Hence, there is a need to rethink the ethics of allocation of live uterus donation and its sourcing from known or unknown 'altruistic' donors.

Gifts are never 'free'; they inevitably come with strings, making the recipient beholden in crucial ways (Mauss 1925; see also chapter 10 and 14 in this book). "Pure altruism does not exist, except perhaps toward one's children, and bio-evolutionists have pointed out that parental sacrifice hides a form of (genetic) self-interest" (Scheper-Hughes 2007: 508). While studies have confirmed time and again that the joy of giving becomes a form of reciprocation for donors, and transplant teams are expected to carefully ensure effective procedures of informed consent (Gill/Lowes 2008), one needs to take into consideration the gendered dimension of uterus donation. Understanding the gendered dimension is important as it allows the use of reproductive justice as a moral frame to approach women's participation as UT donors. Researchers studying organ donation have long found that social desirability influences donor's decision-making (Russell/Jacob 1993). Few studies that are available from the US and Japan states that the majority of the public is in favour of UT as a reproductive option (Nakazawa et al. 2019; Hariton et al. 2018). Such attitudes could selectively target bodies of women with dormant and yet fertile uteruses, expecting them to 'help' those in need. The gendered availability of uteruses makes it important to deliberate upon the circumstances under which women (and transmen) donate their uteruses. Uteruses are going to come from women and in future even from transmen during their hysterectomy procedures once the transplant medicine is able to accommodate the same. Since uteruses cannot come from the men or women who might have not completed their own reproductive journeys, those women who have completed their reproductive years and transmen might feel socially obliged to consider donation as their responsibility. The pressure of being socially responsible might influence these potential donor's decision-makings and hence needs to be approached from a reproductive justice point of view.

Unlike other live donations like kidney or liver, uterus is not lifesaving but reproductive. Certain studies show that kidney recipients have not directly asked their family members to donate to avoid feeling beholden (Gill/Lowes 2008). Uteruses unlike

kidneys are constructed in the transplant discourse as not just 'spare' organs but 'surplus with no further purpose' for the donor. Uterus recipients thus might feel relatively less pressure to compensate the donor for their loss of an organ since the uterus in question did not have a purpose for the latter. Thus their anticipated obligation towards the donor is unlikely to disappear, but will be of a different nature. Hence, recipients might directly expect their family members to donate their vacant uterus to them as an act of female solidarity. Potential donors on the other hand, might feel an urgency to help their daughters or friends to have a child since they themselves have experienced childbirth, which the latter is longing for. Bruno and Arora thus proposed that donor evaluation team should have private conversation with the donors. Pressures of family members in a pronatalist society should be evaluated (Catsanos et al. 2013) and UT donors should have a right to withdraw their consent at any stage (Bruno/Arora 2018). However, it still remains to be seen how this can be efficiently ensured.

Like the donors in the studies on kidney donation, the UT donors in various clinical trials have expressed the joy of being able to help their daughters, sisters or friends (Mitchell 2019). Yet one cannot deny that known directed uterus donation do come with the risk of both unsaid expectations from women to donate or even the possibility of direct coercion holding women in family obliged to donate. On the other hand, as discussed before, it can be expected that in several societies, living donors might not wish to donate their uteruses to a trans women. Further, transwomen might lack the same social capital and support from friends and family willing to assist a transbirth by donating their uterus like a cis-woman. Hence, if reproductive justice is to be achieved one has to think of ways for uterus allocation that would neither selectively target gendered bodies nor selectively deprive access for some on the basis of their sexuality and gender.

Non-directed unknown live uterus donation to some extent is likely to come from menopausal women and transmen once the UT procedure is able to utilize uteruses harvested through hysterectomy. If in future, UT continues to require uteruses with larger grafts vessels, women of menopausal age and transmen could be unnecessarily subjected to a more complex surgical procedure, even when they might give their informed consent to undergo the same.

Based on the lessons from kidney donation, we know that women all over the world are frequently chosen or expected by their family members to be a kidney donor for being the most non-productive member of the family (Scheper-Hughes 2007). Studies on surrogacy have also shown that several altruistic surrogates during the early days of surrogacy have been the mothers or a close friend. Hence, one cannot but be vary of the possibility of women within one's families especially mothers either feeling obliged to help by donating their 'dormant, vacant' uterus to their daughters or a close friend or sister feeling the moral responsibility to 'help'.

Discussing the German Organ donation scenario, Schweda and Schicktanz characterized the laws of living organ donation that is directed towards family and relatives as "mutual family responsibility" (2012: 247), which often take a gendered role. Through empirical research, they have shown that a sense of individual responsibility towards donating organs like kidney or liver often arise out of traditional gendered roles in society expecting women to provide as a carer. Women is their study declared their willingness to 'sacrifice' their heart or both kidney for their children if need be. On many instances, individual responsibility can turn into self-responsibility when

people start considering the act of organ donation as indicative of being a good person (Schweda/Schicktanz 2012).

However, the phenomenon of donor regret (Scheper-Hughes 2007) is also common among live kidney and liver donors especially when the transplant fails. For every uterus rejection or failed attempt at childbirth after UT, the donor and in this case women would become selectively vulnerable to feelings of regret. Again the onus of organ gifting can lead to a creditor-debtor relationship between the organ donor and recipient that has been noticed in cases of kidney transplant on the organ watch files (Scheper-Hughes 2007) and which Fox and Swazey describe as "tyranny of gift" (1978: 386).

Although the debt of receiving the uterus as a gift from one's family member could be avoided by some by purchasing organs from the 'poor' and hence outsourcing the labor of donation to deprived parts of the world; the issue of sacrifice, moral obligation or coercion to donate could very well be the reason for uterus selling just like that of kidney donation (see Scheper-Hughes 2007).

Since transnational kidney markets and transnational surrogacy markets are a well known phenomenon, the uterus shortage could soon be met by through cross-border uterine donation through the underground organ markets emerging in Asia, Africa and Middle East (Scheper Hughes 2002; Cohen 2013; see also chapter 11 in this book). Or it could take the form of transnational surrogacy markets like India, Nepal, Mexico, Russia etc. A first glimpse of the same is is visible in the advertisements of medical tourism platforms like Medmonks who have already started promoting low cost cross-border UT opportunities in Pune, India.[3] It suggests that UT is likely to generate cross-border markets and pose distinct sets of ethical, moral, and legal challenges.

Thus, clear ethical frames for live uterine donation needs to be thought through by taking into consideration the local socio-cultural context and developing mechanisms through uterus donation campaigns or awareness drives that frees women and transmen of being responsible by default to donate their uteruses. Live uterus listing and allocation be it directed or non-directed should take into consideration this additional gendered responsibilities associated with the process of uterine extraction that suddenly deems women as hosts with surplus, who might either see it as an opportunity to help their loved ones or an overt or covert obligation. While transplant teams have been offering counselling to potential donors, UT counselling requires an additional perspective on childbirth and parental relationships, which might demand the expertise of counsellors working with egg donors and surrogates.

4.3 The In-Betweeness of UT as a Transplant and Fertility Procedure

The third ethical issue that has been circulating in the ethical debates on UT and yet not been directly voiced is the concern regarding whether UT needs to be regulated as another transplant procedure like the other VCAs or needs to be recognized as an ART. Although UT is a transplant procedure and an output of the advancement in transplant medicine, the purpose of carrying out this transplant is reproductive. Hence, it

3 Website of Medmonks: https://medium.com/@medmonks/process-uterus-transplant-india-cost-medmonks-95dec366ef06 (accessed on September 4, 2018)

is bound to raise ethical questions that fall within the domain of reproductive ethics and law, as much as transplant ethics and law.

For the purpose of uterus allocation, parental fitness has been considered by ethicists as a screening criteria. Some have argued that uterine allocation model should replicate the organ allocation model and not adoption policies. Hence parental fitness should not be a criteria for UT allocation since the criteria established by United Network for Organ Sharing (UNOS) for medical fitness cannot be extended to parental fitness (Rogers 2018). Thus psychosocial criteria for assessment could be discriminatory as per the present guidelines and transplant teams are not qualified enough to make these decisions (ibid.). However, the issue of parental fitness is often discussed under the domain of assisted reproductive technologies (ARTs). Bodies like the *American Society for Reproductive Medicine* (ASRM) urge fertility clinics to not provide services that would threaten the future of the child, there is no mandatory regulatory policy in countries like US to determine whom fertility clinics are actually offering their services (ibid.). In contrast, in the UK, the *Human Fertilisation and Embryology Authority* (HFEA) mandates the clinics to conduct child welfare assessment (ibid.). Thus, to be able to accept or contest the significance of reproductive issues like parental rights during UT, laws of uterine allocation would need to take into account the ART regulations or guidelines for fertility clinics in respective countries and merge it with organ transplantation guidelines like the UNOS guidelines.

ART could be available as a fertility option offered by fertility clinics in collaboration with transplant surgeons. The possibility of women feeling morally obliged or being coerced into uterus donation as has happened in the case of egg donation and even kidney donation can also be addressed if UT donors are offered similar psychological and legal support as the egg donors and surrogates by the fertility clinics. Thus, UT ethics needs to draw from the national and international ethical guidelines already in place to safeguard the interests of women participating in similar technology aided reproductive procedures like egg donation and surrogacy. Under such circumstances, regulation would need to safeguard not just the choice of using living or deceased donor or ways of uterus allocation and listings. It needs to also focus on envisioning competent counselling procedures for the donors and ways of ensuring adherence to a set recipient selection process. Private ART clinics offer ART services to anyone medically suitable – irrespective of whether the donors and surrogates work altruistically or commercially. Since UFI is a diagnosis that is likely to come from the domain of fertility medicine and for some through the ART clinics, the extent to which those clinics will be able to freely allocate uteruses to their patients is a question that needs to be reflected upon. Moreover, it is known that the IVF recipients in countries like the UK often travel to Spain or Cyprus to jump the long waiting list of egg donation due to its time consuming and restrictive ART guidelines under the HFEA. A similar pattern is known to be exiting for cross-border kidney exchanges. Clinic might begin to promote the same for UT in future unless the transnational flow of patients is tracked and regulated by prospective source and recipient countries in unison. Hence, for practical regulatory purposes, one cannot lose sight of the precedents set by other ART and transplant practices that UT is likely to replicate.

Like every other fertility option, UT is also likely to raise issues related to cost, availability and most importantly uniformity of access. UT is expensive. It incurs costs for a prolonged period in order to monitor and administer immunosuppressants.

Since until now UT are performed using IVF (the uterus is not being connected to the native fallopian tube) there are additional costs and procedures involved that might not be legally compatible with the existing ART laws in various countries. The procedure could involve cost of maintaining frozen embryos, its plight if the transplant fails, frozen eggs or ovarian tissues (if the recipient have been battling cancer), preimplantation genetic diagnosis (PGD), non-medical sex selection to state a few. In state sponsored programs, it remains to be decided whether the same couples or individuals who have been sponsored for previous surrogacy attempts are covered for UT. Hence, like other ARTs, UT could potentially stratify reproduction further by creating inequalities amongst women across class, country, race and ethnicity. Since incongruent access is likely to leave some women deprived despite their clinical suitability to undergo UT, the issue of access and allocation needs to be approached though the lens of reproductive justice and not through the traditional political economic argument on fair allocation. Moreover, UT is likely to be the only option for transwomen to attain biological reproduction. In future, once UT for transwomen become possible, additional ethical concerns like transwomen's access to egg and embryo donation, uterine donors and non-discriminatory ways of access to UT is likely to be of importance. Such ethical and legal concerns overseeing UT are gendered and is of moral significance. Each of these issues unless dealt carefully threaten to coerce reproductive rights of women and transmen and create new structures of inequalities and reproductive injustice.

Since UT is set to become a reproductive alternative for many in need, compatibility between UT laws and existing ART laws would be key to ensure that the reproductive rights of the donors and recipients of UT receive the same leverage as that of those using other forms of reproductive assistance. Thus, in order to remove all structural constrains from women's and transmen's access to UT, the procedure needs to be categorized as both a transplant procedure and a fertility procedure. This should especially be the case since IVF is the only way through which recipients of transplanted uteruses are birthing children. Through progress in the field of transplant medicine, it might soon be possible for some women to 'naturally' conceive once their fallopian tubes are connected to their ovaries. However, such pregnancies are still likely to be closely monitored by obstetrics and gynecology surgeons. Moreover, IVF would always be an option for some women and transwomen who might not still be in a position to 'naturally' conceive.

Moreover, if the regulation and planning for its systematic allocation fails to balance and merge the transplant and the fertility dimensions of UT, it would be giving higher importance to the biomedical process of uterus retrieval and successful transplantation. Assigning UT the status of quasi transplant and fertility procedure would bring the actual purpose of the transplant to the forefront, would make the response of the bodies to transplanted organs and immunosuppressant visible. It would highlight the often invisible reproductive journeys of women, which otherwise risk getting overshadowed by the biomedicalized transplant narratives of success and failures. Unlike other organ transplants involving kidney or liver, UT is a temporary transplant with a definite goal of childbirth. Attempts to achieve the same starts only in the post-transplantation period. Thus, the post-transplant period does not only become a time of recovery and survival within one's body with a foreign organ but also the period of attaining one's fertility by attempting to conceive, gestate and birth. The politics and ethics of this post-transplant period could only be understood and regulated if UT is

approached as both a transplant as well as a fertility procedure. This is crucial in order to understand whether the arrangements fall short of ensuring reproductive justice for the recipients.

5. Conclusion

In this chapter, I have identified and discussed three key ethical issues at the backdrop of the ongoing debates on UT from around the world. The first ethical issue revolves around the designation of UT as a 'non-vital' transplant procedure that simply improves the quality of life and the impact of this designation on uterus retrieval procedures. I argued that uterus as an organ during a transplantation procedure deserves more credit than simply being categorized as 'non-vital' due to the role it plays in the recipient's lives. Once technology is able to utilize and transfer the vitality of a uterus to the body of another woman who lacks it, its vital capacity becomes extremely desirable and can seem quintessential to cisgender and transgender women to attain fertility. Hence, I argue for breaking out of the 'vital' and 'non-vital' rationale behind organ retrieval and allotment and state that uterus retrieval deserves as much attention as other lifesaving organs, though not more than it. As a possible birthing option, it can cause gendered suffering amongst women who desire to utilize UT to reverse their infertility. Hence, given the vital role of a transplanted uterus in the life of the recipient, transplant scientist must devise a way for safe retrieval of uteruses before or after retrieval of other vital organs as risking the opportunity to utilize a potentially viable uterus might bring increased sufferings.

The second issue that I discussed concerns the strategy of uterus allocation and listing and the gendered position of the donor in the process. I argued that since gifts are never free, there is a need to rethink the ethics of allocation of live uterus donation and it's sourcing from known or unknown live altruistic donors. Since, UT selectively target bodies of women, the gendered availability of uteruses need to be taken into consideration in order to understand the nature of responsibility that UT might bring for women and how that might influence their decision-making. Like the donors in studies on kidney donation, the UT donors from the ongoing clinical trials have expressed their joy at being able to help their loved ones. Yet that cannot dismiss the possibility of holding women and transmen morally obliged to gift their uteruses during their hysterectomies in order to prevent it from going to medical waste. Moreover, the phenomenon of donor regret could further make potential UT donors vulnerable to experiencing failures on instances when UT would fail to cause a successful childbirth. While some recipients might avoid making their family or friends feel obliged to help them by sourcing uteruses from transnational organ markets, even a price for uterus selling as is known, cannot ensure a non-coercive decision-making for donors. Thus, I argue for the need to have clear ethical frames for live uterine donation that takes into consideration the local socio-cultural context and legal scenario. It would also be important to develop mechanisms through uterus donation campaigns or awareness drives for freeing women and transmen of their presumed moral responsibility to donate their uteruses.

The third ethical issue that I discussed revolves around the question as to whether UT needs to be regulated as another transplant procedure like the other VCAs or needs

to be recognized as an ART. ART could be available as a fertility option offered by fertility clinics in collaboration with transplant surgeons. Hence, for practical regulatory purposes, one cannot lose sight of the precedents set by other ART practices that UT is likely to follow suit, which are available to anyone deemed medically eligible and often transnationally. Like every other fertility option, UT is also likely to raise issues related to cost, availability and most importantly uniformity of access. UT is expensive and its costs could lead to non-uniformity of access and inefficiency of the national waiting lists. Such ethical and legal concerns can only be addressed if the existing ART laws of the respective countries are taken into consideration alongside its transplantation laws while drafting the guidelines and regulations for making UT clinically available. Therefore, I argued that UT needs to be categorized as both a transplant procedure and a fertility procedure, especially because IVF is the only way through which recipients of transplanted uteruses at present are birthing children. Moreover, if the regulation and planning for its systematic allocation fails to balance and merge the transplant and the fertility dimensions of UT, it would be giving higher importance to the biomedical process of uterus retrieval and successful transplantation while overshadowing the motivations and embodied experiences of women undergoing the transplants.

Therefore, in this chapter, I have stated that UT is likely to alter reproductive norms for women, selectively target bodies of healthy women as sites of extraction and create a new relational dynamics between the donor, recipient and the child-to-be. Hence, I would like to point out that there is a need for a gender sensitive ethical framework in order to understand the nature of risks, hopes and responsibilities that are intertwined with the clinical use of UT. Although UT is a transplant procedure and an output of the advancement in transplant medicine, the purpose of carrying out this transplant is reproductive and is hence bound to raise ethical questions that falls within the domain of reproductive ethics and law, as much as transplant ethics and law.

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