



Other women's wombs: uterus transplants and gestational surrogacy

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ABSTRACT

The birth of a child after uterus transplant from a living donor in Sweden in October, 2013 has spurred reproductive and transplant physicians in Europe and North America to investigate whether uterus transplants, from living or cadaveric donors, will be a safe and effective therapy for women with uterine insufficiency. While progress with uterus transplant depends on medical factors, there are also important ethical and legal concerns. Uterus transplant is essential for women without access to surrogacy. It may also be sought by infertile women who dislike surrogacy. This article examines medical, ethical, legal, and policy issues that arise with womb transplant, including the role of surrogacy policies that make them necessary. The conclusion is that there is a clear ethical path for either surrogacy or uterus transplant to be used by women with uterine insufficiency.

KEYWORDS: uterus transplants, surrogacy, law, ectogenesis, gametogenesis, organ donation

INTRODUCTION

Assisted reproductive techniques (ARTs) such as IVF and embryo cryopreservation became an accepted part of infertility treatment in Europe and the USA in the early 1980s, and since then has spread throughout the world.¹ As experience grew so did many variations on IVF, including ICSI, donor eggs, gestational surrogacy, preimplantation genetic diagnosis, and egg freezing. Each innovation required working through the safety, efficacy, and ethical concerns raised, and in most cases achieved an accepted status, with insurance coverage in many locales.²

¹ There were 190,773 ART cycles in the United States in 2013, leading to 53,264 deliveries. CENTERS FOR DISEASE CONTROL, ASSISTED REPRODUCTIVE TECHNOLOGY NATIONAL SUMMARY REPORT 3, 49 (2015).

² There has been less consensus on gestational surrogacy, particularly paid surrogacy. See *infra* note 69 at 700–701. Preimplantation genetic diagnosis has also encountered resistance, but even countries long opposed, such

A technology less dramatic in its scope, but important for affected women, will be uterus transplant for patients with absent or damaged uteruses. Unsuccessful attempts occurred in Saudi Arabia (2000) and Turkey in (2011).³ A Swedish team in Gothenburg launched a program that led to the first birth from a uterus transplant in October 2013.⁴ Three other patients have also given birth in this program, and another is expected in January 2016.⁵

Reproductive and transplant clinicians in the UK and the USA are now preparing their own programs. Because of risk to the donor, the UK will not permit live donor transplants.⁶ The Cleveland Clinic Program has also opted for only using cadaveric donors.⁷ It is planning an initial clinical investigation with 10 transplants. Eight women have begun the screening process, and at least one has proceeded to the IVF/embryo production stage. With healthy embryos available, they are likely to proceed to transplant in the coming months.⁸ A year after the transplant, the program will transfer one embryo a month until a pregnancy occurs.⁹

This article will examine medical, ethical, legal, and policy issues that arise with womb transplant. It will also shine a light on the role of surrogacy policies in making uterus transplant a necessary option for most affected women. This article assumes that procreation and child rearing is a fundamental human right, and uterine infertility should not bar individuals from having genetic offspring when safe and effective techniques exist for alleviating their condition.¹⁰ It concludes that there is a sound ethical basis to allow surrogacy or transplant to be used by women with uterine factor infertility.

as Germany, have now come round. GERMAN ETHICS COUNCIL, OPINION, PREIMPLANTATION GENETIC DIAGNOSIS (2012).

³ The Saudi transplant from a living donor lasted a 100 days but blood clots developed and the transplant had to be removed. W. Fageeh et al, *Transplantation of the Human Uterus*, 76 INT'L. J. GYNAECOLOGY & OBST. 245, 251 (2002). The Turkish transplant from a deceased donor led to a positive clinical pregnancy eighteen 18 months later. However, the gestational sac failed to develop on follow-up. After the patient began to have vaginal bleeding, the pregnancy was considered non-viable and was terminated by aspiration and curettage. Robert M. Veatch & Lainie F. Ross, *Vascularized Composite Allografts*, in 420 TRANSLANTATION ETHICS (Robert M. Veatch & Lainie F. Ross, eds 2nd edn. 2015).

⁴ Matts Brannstrom et al, *Livebirth After Uterus Transplant*, 385 LANCET 607, 616 (2015). All babies were born healthy but premature in the Swedish program. Denise Grady, *Doctors To Try Transplanting a Donor Uterus*, NEW YORK TIMES, Nov.15, 2015, at A1.

⁵ Grady, *supra* note 4, at A24.

⁶ Chris Johnston, *Womb Transplants: First 10 British Women Given Go-Ahead*, THE GUARDIAN, Sept. 30, 2015. The Health Research Authority granted approval for 10 transplants using deceased donors. *Id.*

⁷ Grady, *supra* note 4, at A24.

⁸ The Cleveland program announced on February 25, 2016 that it had performed the first U.S. uterus transplant on a twenty-six year old woman with a uterus from a cadaveric donor. The doctors expect to transfer a single embryo to the transplanted uterus in about a year. Denise Grady, *First Uterus Transplant in U.S. Bolsters Pregnancy Hope of Many*, New York Times, Feb. 25, 2016. <http://www.nytimes.com/2016/02/26/health/uterus-transplant-cleveland-clinic.html?ref=health>.

⁹ *Id.* If a birth occurs, the recipient may have another child, though the Cleveland program will not allow additional transfers after a second birth. At that point the recipient may have the transplant surgically removed or simply stop taking immunosuppressive drugs and allow rejection to occur.

¹⁰ John A. Robertson, *Reproductive Rights and Reproductive Technology in 2030*, in CONSTITUTION 3.0: FREEDOM AND TECHNOLOGICAL CHANGE 155, 177 (Jeffrey Rosen & Benjamin Wittes eds, Brookings Institute Press) (2011).

ETHICAL AND LEGAL CONCERNS

Uterine transplant has been ethically controversial from the start. An initial reaction was that womb transplant is technological overkill, a costly elective procedure so that women might have the experience of pregnancy and delivering their own child when less costly and intrusive options are available.

Uterine transplant, however, is likely to be sought only when other options are not feasible. Without transplantation, a woman without a uterus has no alternative to have genetic offspring but a gestational carrier.¹¹ Surrogacy, however, is totally prohibited in some countries or practically unavailable because of a ban on payment.¹² Nor is surrogacy tourism an easily available option for many women.¹³ Even if paid surrogacy is legally available as it is in the USA and within a couple's means, many women may have religious, cultural, or personal moral reasons for not employing another woman to gestate for them. For them, too, uterine transplant may be the only way to have their own genetically related child.

Uterus transplant is a difficult road and will not be an easy choice even if it is shown to be safe and effective. Transplant will involve long surgery for live donors and recipients, daily immunosuppression, potential in utero effects on offspring, psychological and emotional complexities for donors and recipients, and a great deal of expense. Women will have to be carefully screened, be in a supportive relationship, and have a clear understanding of the risks and benefits. For example, uterus transplant may enable them to carry and birth their own child, but because no nerves are reattached, recipients will not feel movement of the fetus during the pregnancy.

Because of potential benefits for women with uterine insufficiency, there is a reasonable basis for proceeding with clinical research under the guidance of an institutional review board, as is occurring in Sweden with living donors and with cadaveric donors in Cleveland and elsewhere. If either mode of transplant is established as safe and effective, it should be offered to women with uterine insufficiency and covered in national or private health plans. Transplant, however, will not help women who have a functional uterus, but who for medical reasons cannot undergo pregnancy, nor gay males who are seeking offspring.

¹¹ Adoption may satisfy some infertile women but there are supply barriers, and most important, the absence of the genetic connection that is the essence of procreation.

¹² Wikipedia, *Surrogacy Laws by Country*, https://en.wikipedia.org/wiki/Surrogacy_laws_by_country; European Parliament, *Directorate General for Internal Policies, Policy Department C: Citizens' Rights and Constitutional Affairs*, in *A COMPARATIVE STUDY ON THE REGIME OF SURROGACY IN EU MEMBER STATES* (2013) (This report covers European Union nations as well as South Africa and Australia).

¹³ Surrogacy tourism is not a solution if the intended parents' home countries will not legally recognize resulting children. The European Court of Human Rights overturned such a ban in France. *Menesson vs. France*, App. No. 65192/11 Eur. Ct. H.R., HUDOC (Sept. 26, 2014), <http://hudoc.echr.coe.int/sites/eng/pages/search.aspx?i=001-145389>. Countries of origin may also require that the intended parents be married. Israel, for example, has refused to recognize the children of gays and single women who have gone abroad for surrogacy. The absurdity of this policy was highlighted during the 2015 Nepalese earthquake when 50 or so Israeli gay couples found that the surrogates carrying their child or who had just given birth to it could not be brought back to Israel in military aircraft sent to rescue Israelis caught in the catastrophe. John A. Robertson, 'Surrogacy, Israel, and the Nepal Earthquake', *BILL OF HEALTH*, <http://blogs.law.harvard.edu/billofhealth/2015/06/04/surrogacy-israel-and-the-nepal-earthquake> Countries that do allow repatriation are in essence transferring surrogacy tasks to other countries because of the moral and policy objections which they have against hiring a surrogate on their own soil to gestate one's child.

THE SURROGACY DILEMMA

A discussion of uterine transplant cannot occur without also examining surrogacy policy.¹⁴ Surrogacy is fraught with ethical, legal, and social controversy because it shifts the burden of gestation from one woman to another, usually for payment. It also undercuts traditional notions of motherhood and family, and risks instrumentalizing those functions. Yet gestational surrogacy is the only way that women medically blocked from gestation can have their own genetic child to rear. The larger issue is whether achieving those benefits outweighs the moral and social costs of transferring gestation to another woman who has freely chosen, albeit with payment, to assist.¹⁵ Countries that prohibit paid or unpaid surrogacy value traditional notions of motherhood and prevention of harm to surrogates over the needs of infertile women.¹⁶ A higher value placed on procreative freedom would give infertile women a right to use surrogates who freely choose that role and satisfy other conditions.

Uterine transplantation appears to be a way out of the surrogacy dilemma for women with uterine factor infertility. With transplant the infertile woman would then be able to gestate, with no split between the genetic and gestational mother, thus, internalizing the burdens that surrogacy shifts to another woman. In the case of living uterus donors, however, another woman is still bearing a significant bodily burden to enable the infertile woman to rear her own child, though the donor is not gestating. With cadaveric organs, the donor family's burdens have psychological but not physical significance.

DONOR ISSUES

An acceptable risk/benefit ratio for the recipient does not automatically mean that womb transplants should become accepted therapy. One must also take account of the source of the uterus being transplanted: whether from a living donor or a cadaveric source. Each has its own set of problems, and it is too early to know which path is preferable in terms of efficacy.

Living Donors

In solid organ transplant living donors are often preferable, if only because there are so few cadaveric organs available. Living donors, for example, provide almost 50 per cent of kidney transplants, at relatively small risk to donors.¹⁷ Since a uterus is not necessary for life, as hearts and lungs are, and are routinely removed in hysterectomies, they too might be donated by living donors.¹⁸ Family or friends might choose to do so,

¹⁴ 'Surrogacy' is used here to refer to 'gestational surrogacy', in which a surrogate carrier receives the embryo provided by another person or couple and gestates it. In this article, the term does not refer to-called 'traditional surrogacy', in which another person provides the sperm for inseminating the surrogate, which is intended to produce a child using the surrogate's own egg.

¹⁵ The meaning of 'freely chosen', will vary with country, medical and social context, and the situation of the woman. For a fuller discussion, see I. GLENN COHEN, *PATIENTS WITH PASSPORTS: MEDICAL TOURISM, LAW, AND ETHICS* 388, 418 (Oxford University Press) (2015).

¹⁶ Surrogacy tourism alters that calculus somewhat, at least where the home country recognizes the child.

¹⁷ U.S. Department of Health and Human Services, *Health Services Research Administration, Organ Procurement and Transplantation Network*, (http://optn.transplant.hrsa.gov/latestData/step_2.asp)Dorry L. Segev et al, *Perioperative Mortality and Long-term Survival Following Live Kidney Donation*, 303 *JAMA* 959, 969 (2010) (.03% mortality and <1% risk of major morbidity).

¹⁸ Most hysterectomies now occur either by laparoscopy, or abdominal surgery. In either case the duration and medical outcomes are likely to be more favorable than the more intensive hysterectomy done for donation.

particularly if they have completed their own families.¹⁹ Indeed, they also likely to be a common source for uterine transplants.

Are the risks to the donor outweighed by the benefits of the donation? The principle of autonomy supports a competent woman's right to donate if she finds that the benefits outweigh the risks and finds a healthcare team willing to perform the surgery. The long-term consequences on donor health from a hysterectomy are low, but uterus donation is much more complicated than even a radical hysterectomy because long veins and arteries must be removed. The Swedish donation surgeries (7–11 hours) were especially challenging because of the difficulty of separating the aortic arteries and veins that nourish the uterus and supporting structures. This lengthens the duration of anesthesia, and risks injury to the ureters, which are wrapped 'like worms' around veins and arteries and must be carefully unwrapped to avoid injury.²⁰

There may also be psychological factors at play with living donation. Although the donation is not reproductive per se (no gametes are donated), it does allow reproduction by the recipient to occur.²¹ With uterine transplants, the donor is providing the organ so that the recipient may then gestate and give birth. Yet there may still be symbolic and psychological meaning for the donor because she is providing the actual organ of gestation. Counseling prior to donation will need to address this issue, so that the donor does not believe that she is 'the mother' of the child simply because she has contributed the organ essential for the recipient's reproduction. Mothers who donate their uterus to their daughters would thus be enabling their daughter to give birth in the same uterus that had nourished her.²² In some cases, donors may experience even further loss than many women feel when they undergo hysterectomy.

Cadaveric Donors

Cadaveric donation shifts the calculus. There is no risk of injury to the donor, and it may provide more organs than living donors alone would. The use of cadaveric donors will depend first of all on a recognition of brain death or donation after cardiac death and a national system for removing and distributing cadaveric organs.

If cadaveric sources are medically useful, protocols for how they are removed and distributed will have to be developed. Since the donor is dead, retrieval will be easier and quicker. In distributing cadaveric wombs, survival urgency should arguably not play the important role that it now plays with solid organs.²³

Indeed, Dr Robert Stillman argues that since the mortality and morbidity rate of radical hysterectomy is greater than that of pregnancy, the health risk of living donation should bar living uterus transplants if surrogacy is available. See Stillman, *infra* note 36, at slides 50–54, 60–61.

¹⁹ Because of the magnitude of donation, it is unlikely that strangers will come forward to donate uteruses as they do to donate kidneys.

²⁰ Grady, *supra* note 4, at A24. In fact, first live donor in Saudi Arabia suffered uretic damage. Veatch & Ross, *supra* note 3, at 429.

²¹ Similarly, a gestational carrier provides gestation of the embryo of another, but is not herself reproducing. In traditional surrogacy, where the surrogate is inseminated with the sperm of the intended father, she provides the egg and gestation, and is therefore reproducing.

²² Several donors in the Swedish series were mothers of the recipient. It is not known whether this produced psychological complications for the parties. See *supra* note 5, at A24.

²³ With demand for cadaveric wombs still so low, there will be ample time to adapt the United Network for Organ Sharing criteria for allocating organs in the USA.

With deceased donors, procurement of the uterus should follow standard protocols in which initial screening is done by the local organ procurement organization (OPO). Normal organ and tissue donation forms typically consent to removal of 'all organs and tissues'. In signing them, donors or their families may have certain body parts in mind eg internal transplantable solid organs and perhaps skin, bone, and other tissue. Most would be shocked to discover that 'donation' also included the uterus (or hands, face, penis, larynx, or other body parts used in non-life saving transplants). OPOs procuring uteruses or organs or tissue beyond those normally procured in the transplant context should obtain explicit consent from the donor or donor family to procuring those other organs or tissue.²⁴

THE BENEFITS OF UTERINE TRANSPLANTS

Uterine transplants are ethically challenging in part because unlike most solid organ transplantation, they are not life-saving. They do, however, improve recipient well-being and human flourishing in a significant way. This benefit is comparable to the benefits that recipients of vascularized composite allografts (VCAs) receive. VCAs include hand, arm, face, larynx, and now penis transplants. No one would suggest that these transplants do not serve the well-being of recipients in substantial ways, even though they are not life-saving.²⁵ Uterus transplant aims at relieving reproductive suffering, which may include ostracism, shame, depression, and sadness.²⁶ Each VCA presents a different package of risks, burdens, benefits, and costs, and each should be judged individually.

Women who might benefit from uterus transplant are numerous. There are estimates 15,000 women with uterine factor infertility in the UK and 50,000 in the USA.²⁷ The strongest case for uterine transplant is a woman with severe uterine dysfunction in a country where surrogacy is prohibited or so strictly regulated that it is not practicably accessible. In that case the uterus transplant provides both the gestational experience and, more importantly, a genetic child which the transplant recipient would not otherwise be able to have. Where surrogacy is legally available, eg the USA, a woman might still prefer womb transplant because of moral concerns about using a paid surrogate, a wish to bear her own genetic child, and the psychological and social complications of entrusting her embryo and future child to another woman.

MEDICAL FACTORS FOR THE RECIPIENT

Clinical research will help define more precisely the risks and protocols for uterus transplants. Transplant candidates must be healthy enough to withstand a major

²⁴ See Grady, *infra* note 24, at A3, and the importance of informing a family that the cadaveric donation will also include the penis.

²⁵ A program at Johns Hopkins University School of Medicine has been approved to do 60 penis transplants for soldiers with genitourinary injuries. Many injured soldiers experience the loss of penis as worse than most other injuries, including loss of limbs. Denise Grady, *New Transplants May Heal War's Hidden Scars*, NEW YORK TIMES, Dec. 7, 2015, at A 1.

²⁶ It is especially important for Muslims whose faith under Sharia law forbids surrogacy but not uterus transplant. Sharmin Islam et al., *Ethics of Surrogacy: A Comparative Study of Western Secular and Islamic Bioethics*, 44 J. ISLAM MED. N. AM 1 (2013); K. Aramesh, *Iran's Experience with Surrogate Motherhood: An Islamic View and Ethical Concerns*, 35 J. MED. ETHICS 320 (2009).

²⁷ Grady, *supra* note 24, at A24. Neither estimate subtracts the number who might not be acceptable candidates due to health reasons.

surgical procedure, able to produce viable embryos for transfer, and as with all major organ transplants have a supportive spouse, partner, or family. If acceptable on health grounds, they must undergo hyperstimulation and egg retrieval and produce several embryos which will be frozen for transfer after the transplant surgery.²⁸ They must also be healthy enough to withstand a transplant of the uterus and anastomosis of the small vessels needed to provide vascular support. Only the most skilled vascular surgeons will be able to reattach the long veins with the very thin walls that they have.²⁹

The occurrence of menses in the recipient would indicate a successful transplant. To enable full recovery, embryo transfer would occur roughly a year after the transplant. At that point there will still be questions of whether the uterus will expand normally with the growth of the child and whether it poses other risks to the mother/fetus. To prevent stress on the graft, a cesarean birth will also be required.

The candidates also need to understand that theirs is not a 'typical' pregnancy. First, the uterus will not be innervated, so the woman will not feel the fetus move nor will she feel contractions even though hormonally mediated effects like morning sickness and fatigue will be preserved. The lack of innervation may exacerbate feelings of estrangement to the transplanted organ. The fact that the uterus gestated another's pregnancies may also interfere with the recipient's ability to accept it as her own. This may be further complicated when the living donor is a close relative.

Immunosuppression

Antirejection drugs will be needed to maintain the transplant for as long as a woman wishes to retain it. Those drugs carry a variety of risks. A standard immunosuppressive regime is likely to include tacrolimus, prednisone, and perhaps other drugs. A common effect of tacrolimus, often within a year of transplant, is reduced kidney function. Long-term prednisone can cause bone loss and diabetes. Many of these risks can be managed but they may also lead to permanent or chronic kidney disease. Since the transplant is not visible, like other VCA's (such as hand, arm, face, and penis), acute rejection is not easily diagnosed, so that measures can be taken in time to prevent rejection and associated medical problems. The impact of immunosuppression will depend on its length. At least two years would be involved to have a child from a uterus transplant and longer if she wishes to have more children.

Psychological Issues

Counseling will be important in selecting appropriate candidates for transplants. A candidate has to be psychologically ready to undergo major surgery to receive another woman's uterus. If surrogacy is available but unacceptable to her, she must be willing to accept the great physical burdens that a living donor friend or family member would incur to help her and the obligations of reciprocity which that would entail.³⁰ A cadaveric uterus donation may be less fraught but may also have psychological implications.

²⁸ This is to ensure that there will be embryos for transfer so that transplanting the uterus not in vain.

²⁹ Dr Robert Stillman (Personal Communication).

³⁰ Altruistic stranger donations, which now occur in kidney transplantation, are less likely for such a significant operation as uterus donation. Professional or national bans on payments for donor organs would also make living stranger donations unlikely.

Perpetuating Stereotypes

Another fear is that the desire for transplant may be driven by an internalized stereotype that a woman is not whole unless she bears and rears her own child, no matter how great the risk this poses to her or the donor's health and that of the fetus/child to be. Parental zeal is commended once a child is born or on the way, but not necessarily when it requires (and may impose on another) great risk just to have a child. Still, such efforts should not be condemned *ab initio*. Since there is no other way to have a genetic child, the choice of uterus transplant flows from the importance of having one's own genetic child, which is not simply playing out a stereotypic view of how women should reproduce.³¹ It is also critical to confirm that the woman herself expresses strong interest in undergoing uterine transplant without pressure from her spouse or family expressing cultural norms and expectations about what it means to be a woman and wife.

RISKS TO THE CHILD

In a uterine transplant, one must also consider the risks and benefits to the child-to-be. The benefit is life that might not otherwise have been procreated and gestated. The main risks of immunosuppression to the developing fetus after solid organ transplantation are prematurity and low birth weight. National transplant data show that female solid organ transplant recipients on immunosuppression do not have increased risk of birth defects, but that data does not include uterine transplants.³² The additional risks associated with gestating in a non-native uterus are unknown.

SURROGACY-RELATED ISSUES

This assessment of risks, burdens, and benefits suggests that further clinical research may occur under the supervision of an IRB or other ethics review body with careful attention to the informed consent and counseling for recipients and living and cadaveric donors. If the safety and efficacy of the procedure is established, then it may become an accepted alternative, covered under private or public health insurance system for women with uterine factor infertility.

This position assumes that easy access to surrogacy is not available. If surrogacy, however, is legal, two important questions arise. The first is whether an option as burdensome and costly as uterine transplants should also be supported when a surrogate is available to gestate? The second is whether in those situations there is an obligation to have a uterus transplant instead of using a gestational carrier? Finally, with uterus transplants at such an early stage of development and their future uncertain, what implications are there for national policies that restrict surrogacy?

MAY A WOMAN CHOOSE TRANSPLANT IF SURROGACY AVAILABLE?

The main argument for womb transplants is to treat women in countries in which surrogacy is legally or practically unavailable—the case in most of the world.³³ In those

³¹ In a few cases where surrogacy is available, the recipient might be choosing to have the gestational experience because of a view rooted in stereotypes of the importance of a woman bearing and rearing her own child. She might, however, also wish to avoid the complications of surrogacy, including hiring a poorer woman to gestate her embryo when with a transplant she could do it herself.

³² Veatch & Ross, *supra* note 3 at 434, note 53.

³³ See *supra* note 12, at 15–16.

countries, uterine transplant would be the only way for a woman to have her own genetic child. But if surrogacy is generally available, as it is in the USA, should a woman still be able to have an expensive and risky uterine transplant, possibly involving a living donor, instead of using a gestational carrier?

This argument assumes that gestational surrogacy is less burdensome and costly than a uterus transplant. Paid surrogacy, however, is also a costly procedure and less likely to be covered in public or private insurance policies than uterus transplants. In addition, a woman may believe that it is wrong to pay another woman to carry a fetus when she could do so herself with a transplant. She may also want to avoid the impersonal and commercial nature of such a relationship. Or she may view it a matter of pride and personal dignity to gestate and birth her own child.

A preference for transplant over available surrogacy is not necessarily an internalized reflection of a gendered or essentialist view of a woman's role. Given the moral, legal, and social complexity of surrogacy, choosing womb transplant over being enmeshed in the commercial surrogacy market makes sense in its own right.³⁴ True, it might involve a living donation from a friend or family member, but they are not being paid, and aside from the transplant surgery, there are few other risks for the recipient.³⁵

Prominent IVF doctors have criticized uterus transplant on the ground that it is far too risky for both donor and recipient than the use of surrogacy. One critique noted that 'It should be emphasized that this procedure is experimental and has a high chance of complication and potential failure'.³⁶ He went on to say that 'as long as a woman who carries a pregnancy for another woman is ready to take on the usual risks of pregnancy for another woman, this existing widely used method should weigh against experimental transplantation'. This comment, however, does not distinguish between established and experimental transplants and those from a living and from a cadaveric donor.

Dr Robert Stillman, in a debate with the head of the Gothenburg program, argued that the balance of risks for live donor and recipient were simply too great in light of the lesser risks of surrogacy.³⁷ His critique, however, was directed to the risks of live donation and assumed the easy availability of surrogacy, which is not the case in Sweden and most of the world. With surrogacy unavailable, he might reconsider uterus transplant from a live donor. He might also allow cadaveric transplants even if surrogacy were legal. Indeed, Institutional review boards in Sweden and the USA have taken a different view than Dr Stillman, approving experimental transplants from both living and cadaveric donors.³⁸

IS THERE A DUTY TO CHOOSE TRANSPLANT OVER SURROGACY?

This section flips the question of 'may one have a uterus transplant' to whether 'must one' have a transplant when surrogacy is available. Such a duty would arise, if at all, only after womb transplants have been established as safe and effective. In that case the

³⁴ A woman might reasonably prefer not to be enmeshed in a commercial transaction with a stranger over whom she will have little control to gestate her child.

³⁵ Nor is a womb donor likely to claim that she is the actual mother of the child, as occasionally occurs with surrogate mothers who refuse to relinquish the child at birth.

³⁶ Dr Avner Hershlag, *Letter to the Editor*, NEW YORK TIMES, Nov. 21, 2015.

³⁷ Robert Stillman, *Gestational Surrogacy vs. Uterine Transplant: A Medical and Ethics Based Debate*, INAUGURAL NFI. Stockholm, Sweden, Dec. 4, 2001.

³⁸ Grady, *Supra* note 4, at A24.

question is whether the infertile woman is ethically justified in shifting to a gestational carrier the pregnancy and childbirth which she could do herself if she accepted a womb transplant.

The controversy over surrogacy arises because surrogacy involves the acceptability of one woman transferring the work of gestation and childbirth to another woman. The justification for it is that there is no other way for the intended parent to gestate her own genetic child. But if she could gestate if she underwent a safe and effective operation that restored uterine function, should she not be obligated to have the transplant to avoid burdening a surrogate?

On this view requiring the intended mother to undergo safe and effective surgery so she can gestate her own child is fairer than turning to the market to find women who will bear that burden for her.³⁹ Such an obligation would relieve another woman from taking on those burdens for economic reasons and prevent other supposed ills of surrogacy.

In considering the question, it is helpful to recall the dubious status that 'surrogacy for convenience' now has.⁴⁰ Liberal apologists for surrogacy usually distant themselves from cases in which the busy professional woman chooses to engage a gestational surrogate (and round the clock nannies after birth) so that she can 'lean in' to close mergers and acquisitions, litigate cases, do neurosurgery, or make her next film. We assume that those cases are rare, just as the cases of women said to have abortions so they will not miss an already booked pleasure cruise.⁴¹ And while they may not be directly prohibited, progressive regulatory regimes for surrogacy require that the surrogacy only be allowed when there is a medical barrier to gestation.

The idea is that such uses of surrogacy are distasteful and should not have the advance certification that medically caused surrogacy now receives in some states, precisely because the hiring parent could gestate herself, albeit with career or personal inconvenience. Putting surrogacy for convenience in a less worthy bin allows surrogacy proponents to spin a narrative that lauds surrogacy as a way to help infertile women have children. Surrogates generally buy into that narrative as well. They become surrogates not simply for money, but also out of empathy for the plight of infertile women.⁴² Surrogacy for non-medical convenience denies all parties this happy narrative.⁴³

The discomfort with surrogacy for convenience shares a kindred ethical root as the argument for uterus transplant instead of surrogacy. Market power allows a woman to

³⁹ This claim assumes that transplant burdens are within an acceptable range, such as if cadaveric donors were available. Even if only living donations are effective, one might reasonably argue that the freely chosen burdens of donation are less than the burdens of surrogate gestation, which might involve a twin gestation and surgical delivery.

⁴⁰ An example of this distaste occurred on a reproductive lawyers' confidential listserv when one participant mistakenly stated that a distinguished surrogacy lawyer had used a gestational surrogate to have her own children without a medical reason for doing so. This charge was treated as near defamatory. The mistaken commentator had to apologize again and again to quiet his good-faith mistake. (Personal Knowledge of Author).

⁴¹ There are rumors but no hard data that non-medical surrogacy frequently occurs. See Judith F. Daar, *Reproductive Liberty Extends to 'Social Surrogacy'*, L.A. DAILY J. Sept. 3, 2015.

⁴² Alex Kucynznski, *Her Body, My Baby*, NEW YORK TIMES MAGAZINE, Nov. 28, 2008. Empathy and generosity are also strong factors in the motivation of paid egg donors (though not sperm donors). Rene Almeling, *SEX CELLS: THE MEDICAL MARKET FOR EGGS AND SPERM* 74, 83 (2011).

⁴³ Proponents of procreative liberty should not necessarily object to paid surrogacy for convenience. Both well-informed intended parent and gestators are making a rational choice.

hire the surrogate even when she could physically gestate herself. If we are troubled by convenience cases, then we should be troubled by women who reject safe and effective transplants and hire another woman to gestate her child. Imposing the burdens of gestation on needy surrogates when a woman has functional uterus or could obtain one by transplant would also increase the effects of exploitation and commercialization in reproduction.

At present uterine transplant is too experimental to make it a duty. If transplants (from live or cadaveric donors) are shown to be safe and effective, the question of duty is more complicated. With cadaveric donation, the comparison would be between the infertile woman's transplant surgery and long immunosuppression and the moral, physical, and social costs of paid surrogacy. Living donation burdens may also be preferable than imposing the burdens of surrogacy on another person, though that is a closer question that depends on comparing different burdens and benefits.⁴⁴ One could argue that the morally correct action would be for the intended mother to take on the burdens of uterine transplant instead of shifting gestation to a hired surrogate. Only in situations in which the transplant or pregnancy were medically contraindicated, would gestational surrogacy then be acceptable.

To fully engage this issue, one would need much more precise information about the still unknown effects of uterine transplant for recipients and donors. The question is whether uterine transplant would impose an undue burden on women who would be able to reproduce in this way but who would prefer the easier route of using a surrogate.⁴⁵ Much more would need to be specified to come fully to grips with realistic scenarios in which the risks of uterine transplants are reasonably preferable to the surrogate's gestational and parturition risks and burdens. Although professional groups may issue voluntary guidelines preferring transplant to surrogacy, a law mandating transplant over surrogacy would run into constitutional problems.⁴⁶

THE NEED FOR MORE FLEXIBLE SURROGACY LAWS

The unavailability of gestational surrogacy has been a main driver of uterus transplant, and must be discussed in any discussion of womb transplant. As noted previously, paid surrogacy is legal in the USA and a few other countries but banned or severely limited in most other jurisdictions.⁴⁷ Concerns include harm to the surrogate, ensuring an intelligent, informed, and free consent, the impact on offspring from being raised by a non-gestational parent, the fitness of rearing parents,⁴⁸ disputes over parentage,

⁴⁴ This is a somewhat unrealistic comparison. Most living donations would likely be done by non-laparoscopic surgery, and are likely to impose greater risks and burdens than surrogacy. However, surrogacy entails 9 months of pregnancy and childbirth, which are not insignificant bodily intrusion. In fact, there may be no easy rational way to compare such disparate but significant physical burdens.

⁴⁵ 'Undue burden' here is the key question. When is major surgery for non-cadaveric uterus donors and recipients and long-term immunosuppression not an undue burden for those parties?

⁴⁶ The claim would be that mandating transplant would unduly burden reproductive choice because of the physical burdens involved, and that avoidance of paid surrogacy, which itself is most likely constitutionally protected, would not be a sufficient justification. John A. Robertson, *Assisting Reproduction, Choosing Genes, and the Scope of Reproductive Freedom*, 76 GEO. WASHINGTON L. REV. 1490, 1513 (2008); John A. Robertson, *Reproductive Rights and Reproductive Technology in 2030*, in CONSTITUTION 3.0: FREEDOM AND TECHNOLOGICAL CHANGE 155, 177 (Jeffrey Rosen & Benjamin Wittes eds, Brookings Institute Press) (2011).

⁴⁷ See *supra* note 11, at 15–16.

⁴⁸ Christine Overall, *Reproductive 'Surrogacy' and Parental Licensing*, 29 BIOETHICS 353, 361 (2015).

and a moral objection to deliberate separation of the gestational and maternal bond for money. A major fear is that paid surrogacy will commodify babies and women, and harm women by exploiting their financial need to undertake the physical burdens of gestation for another.⁴⁹

These are rational concerns, and for some people, cultures, and nations, determinative ones. Yet the trade-off is the loss of genetic parenthood for women with uterine factor infertility. The policy challenge is to weigh the importance of having a genetically related child versus the alleged harms of paid surrogacy. If one views the reproductive need at stake to be as important as other forms of infertility, then a ban on a safe and effective technique should meet a high standard of harm to be justified.⁵⁰ One must look more closely at the importance of the interests served by restrictions on paid surrogacy and ask whether those interests are compelling enough to justify barring access to a technique that would enable infertile women to have their own genetic offspring.⁵¹

Renewed attention to surrogacy restrictions is especially needed because the burden that uterine or gestational infertility imposes on women throughout the world is now much better understood. Also, from the wide experience in the USA and elsewhere with paid surrogacy, there is now a better sense of the problems that gestational surrogacy poses, and the regulatory measures that will prevent or minimize them.⁵² One cannot be sure that uterus transplant is a substitute for surrogacy without a more informed understanding of the relative burdens and benefits of each. Such an inquiry would also help the many other groups who have a compelling need for gestational surrogacy, such as women who face non-uterine medical barriers to gestation or the necessity of surrogacy to enable gays to have a family.

Even if uterus transplants are eventually established as an acceptable therapy, it will not be an easy slog either for recipients or living donors.⁵³ Donors will incur longer and larger burdens than any other living organ or tissue donor, while recipients will benefit from longer life but a richer and more fulfilling one. The complexities of transplant may even lead women who might successfully use it to prefer not putting the burden of donation on a friend or family member, or indeed, not taking it on themselves. At the same time, the willingness to use transplant will not guarantee that a living donor is available or that insurance would cover it.⁵⁴ Cadaveric donation may avoid some of the donor problems, but it will not relieve the transplant burdens of the recipient.

⁴⁹ The Indian government, which had long accepted commercial surrogacy, has now instructed fertility clinics not to allow foreigners to use local surrogate mothers because of concerns about exploitation of poor women. Joanna Sugden, *India Restricts Foreigners' Access to Surrogate Mothers*, THE WALL STREET JOURNAL, Oct. 29, 2015, <http://www.wsj.com/articles/india-restricts-foreigners-access-to-surrogate-mothers-1446132042>

⁵⁰ There is a strong argument for a presumptive moral and legal right to use assisted reproductive techniques to have genetically related offspring. Such a position has legal support in principles of procreative liberty contained explicitly or implicitly in national and international legal systems. See Robertson, *Reproductive Rights and Technology*, *supra* note 45 at 156–157. If so, those who would restrict a reproductive technique should have the burden of showing a compelling need for the restriction. Under this rubric, at least in liberal societies a moral objection per se would not meet that burden.

⁵¹ Egg donation would produce genetic offspring, but they would be gestated and reared by another woman.

⁵² This was not apparent in 1984 when the Warnock Report in the UK set the restrictive parameters on surrogacy that have limited British practice since. DEPARTMENT OF HEALTH & SOCIAL SECURITY, REPORT OF THE COMMITTEE OF INQUIRY INTO HUMAN FERTILISATION AND EMBRYOLOGY, Cmnd. 9314 (UK) (1984).

⁵³ Cadaveric donation poses psychological, not physical, risks, and burdens.

⁵⁴ This will depend on the private and public insurance schemes in place. Coverage is unlikely unless transplant is shown to be safe and effective.

In short, the prospect of uterus transplant in the short run will not help most women with uterine factor infertility and in the long run may not be safe and effective or practically available. Even if those obstacles are surmounted, it still will not avail the many women who cannot carry a child for medical reasons or same sex couples who need access to a surrogate to have a child. Nor is womb transplant so clearly preferable that it could be required even when a surrogate is legally available.

To meet the needs (and arguably rights) of women who cannot gestate due to an absent uterus or other medical reasons, national policies on surrogate motherhood should be reconsidered. Countries with deep religious, cultural, and moral traditions against all surrogacy (Turkey, Saudi Arabia, France, Germany, and Italy) are unlikely to be moved by a plight with which they have long lived, particularly when a surgical solution hovers so near on the horizon.⁵⁵

Those countries, however, that accept altruistic surrogacy (the UK, Sweden, the Netherlands, and Israel) have already grappled with the competing values and interests at stake and may be open to a second look. The prospect of womb transplant, while potentially reinforcing their current stance against surrogacy because it lessens the burdens it causes, also highlights the burdens that that policy would still place on transplant donors and recipients once the safety and efficacy of transplants have been established.

REGULATING SURROGACY

How strong are the arguments for a highly restrictive surrogacy policy in liberal democracies or countries less committed to a theocratic or traditionalist rejection of surrogacy? As this section will show, most of the concerns about surrogacy—harm to the surrogate, ensuring an intelligent, informed, and free consent, the impact on offspring, the fitness of rearing parents, and disputes over parentage can be assuaged, as they have been with acceptance of altruistic surrogacy. The larger or deeper barrier is the objection to paid surrogacy—the commodification of babies and women, and the risk of exploiting the carrier's financial need.

REGULATION OF SURROGACY CONTRACTS

There is extensive evidence that a regulated system of surrogacy can minimize or prevent the chief problems that have stressed policy-makers about surrogacy. Such a system already exists in countries that allow paid surrogacy, most notably the USA.⁵⁶ Based on these enactments and others suggested by scholars, a framework for how surrogacy can be effectively regulated is already well-known. While not all jurisdictions might agree on all elements, the issues and fruitful ways to resolve them are reasonably clear. Indeed, several countries which limit surrogacy to unpaid transactions have required these elements for altruistic surrogacy.⁵⁷

⁵⁵ Aramesh, *supra* note 25, at 320–322.

⁵⁶ The US policy is determined by the action of individual states. Several of them allow paid surrogacy, including several which allow prior certification for enforcement of the surrogacy contract. COUNCIL FOR RESPONSIBLE GENETICS, *SURROGACY IN AMERICA* (2010). See also 750 ILL. COMP. STAT. 47/10-15 (2014); N.H. REV. STAT. ANN. § 168-B: 1–22 (2015); TEX. FAM. CODE ANN. § 160.xx (2006); VA. CODE ANN. § 20-156-165 (2012). Couples in a restrictive state can obtain surrogacy in a more liberal state.

⁵⁷ For the United Kingdom, see Bianca Jackson, *Surrogacy: A Guide to Current Law (Part 1)*, *FAM. L. WK.*, <http://www.familylawweek.co.uk/site.aspx?i=ed127038>

Any system of regulation should ensure that prospective gestational carriers are in good physical and mental health. They will need health insurance in case things go awry. They should also have primary control over whether they keep or continue a pregnancy.⁵⁸

The choice to be a surrogate should occur only after full awareness of the risks and a considered choice free of improper influence.⁵⁹ To be sure that the surrogate understands what carrying and delivering a child entails, she should have first had a child of her own. If she is married, her spouse perhaps should agree to the surrogacy. The surrogate needs the advice and advocacy of her own doctor and lawyer, who can represent her interests in making an agreement and protect her health interests if she goes ahead.

American states with advance certification of parentage in gestational surrogacy agreements require that the intended parents have medical reasons for not being able to gestate, thus prohibiting surrogacy for convenience or for non-medical reasons.⁶⁰ This would not bar donor sperm to create the embryo or donor egg with husband sperm if the woman is unable to carry a fetus. (In those cases the gestational surrogate would not be providing the egg). The need for gestational surrogacy, however, would not exist when a person or couple can provide neither eggs nor sperm to create an embryo or can provide only sperm (so-called traditional surrogacy).⁶¹ In that case transplant would not enable the uterine infertile woman to genetically reproduce because she is not providing an egg, though it would provide her with a gestational experience with gametes from her spouse and an egg donor or a sperm donor and an egg donor.⁶²

Protection of the intended child is also significant. Strictly speaking, none of these protections are essential because the child in question would not be born without a surrogate carrier.⁶³ Yet there is no reason not to ensure that the child once born has a rearing environment most conducive to its well-being and flourishing.

Another reasonable measure would be to ensure that the hiring individual or couple is adequately equipped to parent a child. Illinois, New Hampshire, Texas, and Virginia condition advance certification of parentage on the intended parents being married.⁶⁴ Those states may also require a home visit to ensure that the rearing situation will be positive. Married gay couples would qualify, but not unmarried persons or

⁵⁸ Deborah Forman, *Abortion Clauses in Surrogacy Contracts: Insights from a Case Study*, 49 FAM. L. Q. 31 (2015).

⁵⁹ Whether a financial award or compensation is 'improper influence' is discussed in *infra* note and accompanying text.

⁶⁰ In addition, surrogacy guidelines of the American College of Obstetrics and Gynecology frown on surrogacy for non-medical convenience. AMERICAN COLLEGE OF OBSTETRICIANS AND GYNECOLOGISTS. 'ETHICAL ISSUES IN SURROGATE MOTHERHOOD.' (ACOG COMMITTEE OPINION 88). Washington, DC: ACOG (1990). So does the Practice Committee of the American Society of Reproductive Medicine. 'Recommendations for practices utilizing gestational carriers: an ASRM Practice Committee guideline', 97 FERTILITY & STERILITY, 1301, 1308 (2012).

⁶¹ The claim that traditional surrogacy enables a woman to have 'her own child', ignores the genetic component of motherhood. In reproductive terms those cases are no different than a commissioned pregnancy for adoption, and thus usually require a post-birth adoption proceeding. In the Matter of Baby M, 109 N.J. 396, 537 A. 2d 1227 (1988).

⁶² The burdens and costs of uterus transplant may not be justified when there is no genetic connection between the resulting child and the recipient, and hence no genetic reproduction.

⁶³ This is the non-identity problem, which arises under a person-regarding view of harm. Absent the procedure in question, this same child could not have been born, and thus has not been harmed. John A. Robertson, *Procreative Liberty And Harm To Offspring In Assisted Reproduction*, 30 AMER. J. LAW & MED. 7, 40 (2004).

⁶⁴ *Council for Responsible Genetics, supra note 55*, at 31–40.

couples.⁶⁵ The precise form that assessment of parental fitness for surrogacy should take is still to be determined. No such scrutiny occurs in egg or sperm donation, much less in coital conception, but the shift of gestational to another woman may justify different treatment.⁶⁶

An important issue for protecting children and others in assisted reproduction is clear specification of filiation and rearing rights and duties. The purpose of the surrogacy arrangement is to gestate and give birth to a child of the intended parents' genes, which they will then rear as their own. Under this model the child is the genetic offspring of the intended parents, who then have parental rights for all purposes. The gestational carrier (and any gamete donor) has no parenting rights or duties.

To avoid post-birth controversies over parentage, four states (Illinois, New Hampshire, Texas, and Virginia) offer a preimplantation judicial proceeding to approve the arrangement and make it enforceable.⁶⁷ Such approval would mean that the hiring person(s) name would be on the birth certificate and that they would have legal parentage at birth. The birth mother would have no say in medical decisions after birth or have any continuing contact with the child or rearing parents unless all parties agree. This process avoids disputes and makes filiation clear. States without such statutes could reach these results directly from common law and contract law premises, as a case in Pennsylvania did when one of the intended parents sought to avoid parental duties.⁶⁸ Foreign jurisdictions, most notably the UK and Sweden among several others, adopt a similar approach with altruistic surrogacy.

THE FEAR OF EXPLOITATION AND COMMERCIALIZATION

Since these steps to protect the surrogate, the child, and avoid parentage disputes are widely thought to be reasonable, countries that do not have deep-seated religious or traditional-family objections to surrogacy should enact them to protect all the parties. Indeed, these protections may be more than would be forthcoming in a surrogacy tourism arrangement.⁶⁹ Lack of these protections cannot thus be the main objection or rationale for making surrogacy totally or practicably unavailable. A more central objection is to the payment of fees to surrogates and brokers beyond reasonable expenses.

Objection to payment has both moral and instrumental roots.⁷⁰ The moral root is that it is inherently immoral to pay money for something as fundamental to the human experience as pregnancy and childbirth and the bonds of intimacy and childbirth that come with it. Doing so treats the surrogate and the child as a commodity, almost as

⁶⁵ Arguably the rearing fitness of the parents should not rest on legal recognition of their relationship nor even that two partners be involved. Single persons with the means, assistance, and situation to parent a child might also adequately parent a child. A closer look at such cases, however, is in order to avoid cases where individual men or women who engage a surrogate are not well-equipped to care for the born child.

⁶⁶ Christine Overall, *supra* note 47, at 353–354.

⁶⁷ See statutes cited *supra* note 55.

⁶⁸ John A. Robertson, *Surrogacy Contracts Directly Enforceable in Pennsylvania*, BILL OF HEALTH BLOG, 2015, <http://blogs.law.harvard.edu/billofhealth/2015/11/30/surrogacy-contracts-directly-enforceable-in-pennsylvania/>

⁶⁹ Thailand has barred all surrogacy for non-citizens of Thailand. India, a main surrogacy destination, has now been shut down to prevent exploitation. Joanna Sugden, *India Restricts Foreigners' Access to Surrogate Mothers*, THE WALL STREET JOURNAL, Oct. 29, 2015.

⁷⁰ I. G. Cohen, Note, *The Price Of Everything, The Value Of Nothing: Reframing The Commodification Debate*, 117 HARV. L. REV. 689 (2003–04).

baby-selling or prostitution do. It will be hard to persuade someone who believes this to change their views. However, it should be noted the most consistent holders of this view should be against all surrogacy, not just simply paid surrogacy. For even altruistic surrogacy leads to deliberate pregnancy and alienation of the child from its mother, albeit not for money. Surrogacy by definition breaks the mother-child bond. If that is in itself a wrong, then it is a wrong regardless of payment.

The instrumental objection to surrogacy, beyond its commodification of the surrogate and child, is that it leads to the exploitation of women because only those with fewer resource and greater need will choose to be surrogates. This has been a common charge against surrogacy in India, Thailand, the Philippines, and elsewhere, and has led India and Thailand to close their borders to foreign use of surrogacy.⁷¹ In the USA, however, surrogates, while not drawn from the rich, are generally middle class and not poor women as vulnerable to exploitation.⁷² Hiring parents want a healthy, reliable surrogate, and middle class women often fit that bill, at least more so than poorer women. Nor has there been a high use of racial minorities. Indeed, national recognition of paid surrogacy with safeguards is likely to minimize the greater risk of exploitation of poor women that often operates in India and elsewhere.⁷³

Several studies have shown that in the large majority of cases in the USA gestational surrogacy is a rewarding experience for both carriers and intended parents.⁷⁴ A thorough empirical assessment of that experience would identify the frequency of disputes, the amount of payment, and the long-term well-being of surrogates, their other children, resulting offspring, and the family that hired them. To date, nothing has emerged to suggest that the surrogacy experience in the USA has been problematic.

The American experience will not alone convince European and other nations which have different traditions and may face circumstances, such as trafficked women and other problems, which make opening the door to paid surrogacy highly controversial. In those countries advocates for a more flexible surrogacy policy should draw on the American experience to argue that the ills of surrogacy may be greatly reduced with a robust regulatory system. An important additional point will be to show that restricted access to surrogacy leads women either to seek foreign surrogacy, which in many cases will have none of the protections of a regulated regime, or undergo costly and burdensome uterus transplants.

This argument should also have some appeal in Great Britain, Spain, and other nations which permit paid egg donation but not paid surrogacy.⁷⁵ True, the donor's and surrogate's burdens are not exactly comparable, but paid egg donation does impose

⁷¹ Joanna Sugden, *India Restricts Foreigners' Access to Surrogate Mothers; Move to Limit Service to Married Indian Couples*, THE WALL STREET JOURNAL. See *supra* notes 48. <http://www.wsj.com/articles/india-restricts-foreigners-access-to-surrogate-mothers-1446132042> (accessed Oct. 29, 2015).

⁷² Andrea M. Braverman & Stephen Corson, *Characteristics Of Participants In A Gestational Carrier Program*, 9 J. ASSISTED REPROD. & GENETICS 353, 357 (1992).

⁷³ See *supra* note 48 and accompanying text.

⁷⁴ Braverman & Corson, n. 71; Melinda Hofman & Christine Hagan, *Satisfaction With Surrogate Mothering*, 4 J. HUM. BEHAVIORAL SOC. ENV'T 61, 84 (2001).

⁷⁵ Britain, which had originally banned payment for gametes, now allows a specified payment (£750 for eggs plus additional expenses in some cases). Human Fertilisation and Embryology Act 1990, c. 37, § 12 (Eng.) (amended 2008); HFEA, *Directions Given Under the Human Fertilisation and Embryology Act 1990 As Amended: Gamete and Embryo Donation*, Ref. D. 2015/1, Oct. 29, 2015, http://www.hfea.gov.uk/docs/2015-10-29_-_General_directions.0001_-_Gamete_and_embryo_donation_-_Website_version_-_FINAL_PDF.pdf For Spain, see Yolanda Garcia-Ruiz & Diana Guerra-Diaz, *Gamete and Embryo*

physical burdens and for opponents 'alienates' or 'commodifies' oocytes, an essential component of female reproduction. Having lived with paid egg donation, those countries may be ripe for authorizing some payments to surrogates in a controlled setting. Such experiments may lead eventually to a more flexible surrogacy policy for women with uterine factor infertility or other barriers to gestation.

FUTURE BURDEN-SHIFTING: *IN VITRO* GAMETOGENESIS AND ECTOGENESIS

This discussion of the burdens benefits of uterine transplant and surrogacy has raised the larger issue of when one person may shift a physical burden which they could undertake go to another person, usually for money. Burden-shifting between women in womb transplant and gestational surrogacy makes one think of other reproductive situations that might involve such shifts. Two potential future developments are worth attention. If established as safe and effective, they also will show that acceptable burden shifting depends on the relative burdens and benefits of transferring or internalizing reproductive functions, the importance of the functions at issue, and the need for burden shifting to achieve protected reproductive goals.

Gametes from Somatic Cells

Great progress has occurred in generating gametes from a person's own somatic cells.⁷⁶ Once perfected, a person with absent gametes would be able have skin cells reprogrammed to produce pluripotent stem cells which could be directed to produce absent gametes.

While raising many clinical and ethical problems, the production of gametes from one's own reprogrammed stem cells would be a variation of the transplant/surrogacy burden-shifting issue for a woman without viable eggs who could use *in vitro* gametogenesis rather than procure eggs from a paid egg donor. The burden on egg donors is less than on surrogates, but they still undergo ovarian stimulation and surgical retrieval for another. Paid egg donation also raises concerns with commodifying women, eggs, and children as well as questions of filiation and parenting rights. If so, must or should a woman internalize egg production when technically feasible rather than transfer it to another person?

The general disfavor for 'surrogacy for convenience' sheds light on this situation.⁷⁷ If producing gametes from one's somatic cells became routine, one might argue that a woman without functioning ovaries should produce oocytes from her own cells rather than put the burden on egg donors of doing so. Assuming the procedure is safe for all parties, no burden is imposed on the resulting child, who in any case has no other way to be born with a genetic connection to the female parent unless generation of gametes occurred.

Donation: a Legal View From Spain, in REPRODUCTIVE DONATION: PRACTICE, POLICY, AND BIOETHICS 112, 115 (Martin Richards et al. eds., 2012).

⁷⁶ Sonia M. Suter, *In Vitro Gametogenesis: Just Another Way to Have a Baby*, J. L. & BIOSCI. (2015), <http://jlb.oxfordjournals.org/content/early/2015/12/16/jlb.lsv057.full.pdf+html>.

⁷⁷ See discussion of convenience, notes 39–40 and accompanying text. While most states do not prohibit 'surrogacy for convenience' as such, four states that allow a judge to certify and make enforceable a surrogacy contract before implantation restrict that arrangement to women who cannot medically carry a pregnancy, except for New Hampshire. See statutes cited *supra* note 55.

Total extracorporeal gestation

Suppose that great advances in perinatal medicine occur and ectogenesis (total extracorporeal gestation) becomes feasible.⁷⁸ In that situation the woman could relieve herself of having to gestate without imposing burdens on a surrogate or uterus donor by using an artificial womb. While this work-saving solution would clash with deeply held views about the nature of motherhood and gestation, machine gestation would avoid imposing burdens on surrogates or woman who could have a womb transplant. Indeed, it would free women from gestation altogether.

Transferring the gestational burden from living uterus donors, surrogate carriers, and naturally conceived pregnant women is not without its own problems. While it avoids risk to women, it does impose risks on children who are gestated in an artificial womb rather than a natural uterus. If there were no other way for this child to be born, use of ectogenesis would not harm this child.⁷⁹ If uterine gestation were also available, whether through a surrogate or the woman herself, limits on use of an artificial womb technology might be justified by the importance of having gestation occur *in utero* rather than *ex machina*.

CONCLUSION

Where does the emergent practice of uterus transplant leave reproductive burden shifting and the world of surrogacy? At the moment, the arguments are strong for continuing research into womb transplantation. As the technology progresses, women who might otherwise be in the market for gestational carriers might consider taking part in an IRB-approved clinical investigation.

If uterus transplant becomes safe and effective, the case for offering it to all women with uterine factor infertility is strong. Some proponents might argue that unless medical factors contraindicate its use, a norm favoring transplant over surrogacy should be fostered. Mandating womb transplants, however, is another matter. Uterus transplant will be expensive, have many risks, a likely waiting period for organs, the risks of immunosuppressive drugs, and the other physical and psychological rigors of a post-transplant medical regime. Mandating transplant over surrogacy would also arguably violate reproductive liberty.

Offering uterus transplant as a substitute for gestational surrogacy has been a thought experiment as much as a set of policy recommendations. If the experiment has been successful, it will have to shed light on many aspects of surrogacy, including its motivations and policies to improve its operation, and other third party reproductive situations. For women in countries unalterably opposed to surrogacy or which limit it to a narrow set of exceptions, uterus transplant is an option, albeit a costly one, that might help women there to have offspring. In any event, those countries should rethink their antisurrogacy posture and consider whether an acceptable set of ethical and practice guidelines might be fashioned so that women might be able to reproduce without such highly burdensome surgery. In countries where surrogacy is legal, transplant might still

⁷⁸ Marion Abecassis, *Artificial Wombs: The Third Era of Human Reproduction and the Likely Impact on French and U.S. Law*, 27 HASTINGS WOMEN'S L.J. 3 (2016); Jessica H. Schultz, *Development of Ectogenesis: How Will Artificial Wombs Affect the Status of a Fetus or Embryo?* 84 CHI.-KENT L. REV. 894 (2010).

⁷⁹ See Robertson, *supra* note 62, at 4, 13–19 on the non-identity problem.

remain an option for women who want to gestate their own child and avoid the complications of surrogacy.

This inquiry has also suggested that future reliance on the use of donors and surrogates in assisted reproduction may diminish. With technological change, the need for third party assistance to provide gametes or gestation for infertile persons may eventually wither away. Uterus transplant enables a woman to internalize the burden that would be shifted to a surrogate gestator where permissible. Somatic cell gametogenesis would make the use of paid egg donors unnecessary, and artificial wombs could remove the need for gestational carriers, uterus transplants, and indeed, pregnancy itself. With time, the notion of assisted reproduction with gamete donors and surrogates collaborating with an infertile person may become obsolete.

Uterine transplant is a first step in the direction of shifting reproductive functions from third parties to the infertile person herself. It highlights some of the medical, ethical, and legal issues that arise with internalizing reproductive functions that would otherwise have been shifted to third parties. In the end, self-reliance, albeit with technical help, may come to dominate the ethics, law, and policy of assisted reproduction.