

WHOLE BODY GESTATIONAL DONATION

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In 2000, Rosalie Ber put forward a novel suggestion for circumventing the moral problems of gestational surrogacy. Her proposal was that female patients in a persistent vegetative state (PVS) who had given prior written consent, could function as surrogates: Embryos would be implanted into the patient's uterus and gestated to term (Ber 2000). To my knowledge, no jurisdiction has considered implementing Ber's suggestion or any variation of it. This is surprising in some respects, given the degree to which surrogacy continues to provoke moral and legal controversy (Tanderup et al. 2015; Kirby 2014; Macer 2014; Panitch 2013). Moreover, since Ber published her paper, a further ethical challenge related to gestation has emerged: the prospect of uterine transplantation. While the ethical problems associated with surrogacy are well rehearsed, those associated with uterine transplantation – both living and cadaveric – are only just starting to receive attention from bioethicists (Williams 2016; Williams 2015; Lotz 2016). Arguably, the development of uterine transplantation strengthens, rather than weakens, Ber's case.

Ber does not give a name to the phenomenon she proposes; for the purposes of this paper, I use the term 'whole body gestational donation' (WBGD). Although my initial interest in this area was sparked by Ber's work, I have adapted and extended her approach in several important ways that have both practical and normative implications, meaning that WBGD in my usage is not precisely the same phenomenon that she discusses in her paper.

Firstly, Ber's view is that patients in PVS would offer the best alternative to living surrogacy. I suggest that we should be willing to consider WBGD in patients who are brain stem dead rather than in PVS (and would therefore be eligible to be organ donors). Secondly, Ber believes that WBGD should

be available only to the patients deemed to have a clear medical need for it. I suggest that – all other things being equal – it should be an option for anyone who wishes to avoid the risks and burdens of gestating a foetus in their own body. Finally, while Ber implicitly accepts that only women can gestate, I suggest that brain stem dead men would also have the potential to gestate, meaning that the pool of potential donors is further increased – and that certain feminist concerns might thus be assuaged.

In what follows, I will show why my adapted and extended version of WBGD offers a solution to the problems of surrogacy and uterus transplantation, and should be preferred to both. I suggest that states and health services should adapt their policies and procedures to allow for WBGD among other donation options. I address some possible objections and show that although the prospect of WBGD may be disconcerting, most of the ethical problems that might be associated with it apply equally to other areas of medical and/or reproductive practice.

PVS vs brain stem death

There is increasing evidence to confirm the fact that pregnancies can be carried to term in women who have suffered brain haemorrhages or other medical problems that have resulted in brain death (Said et al. 2013; Ecker 2014; Burkle et al. 2015; Wawrzyniak 2015). Likewise, pregnancies have been recorded in women in PVS (Bush et al. 2003). Since both conditions are compatible with gestation, it is worth considering why Ber focussed on PVS rather than brain death in her original discussion. She does not provide much detail on this, but does note the requirement of ventilation for brain dead patients, observing that patients in PVS can survive for long periods without ventilation. Ventilation is resource-intensive and complex; patients who do not require it, will therefore be easier to manage in at least some respects, and will almost certainly cost less. This in itself might seem to give PVS a *prima facie* advantage over brain death as a source of patients to undertake gestation.

Interestingly, however, Ber urges that brain death should be *redefined* specifically so that PVS patients can be included in that category, and thus, to engage in gestational donation. However, this would in itself be a complex undertaking. It would also have implications beyond gestational donation. If the criteria for brain death are changed, it would suggest that PVS patients might be eligible not just for gestational donation but for other forms of

organ donation. This in turn might aggravate existing disputes and concerns about the concept of brain stem death (Truog et al. 2013). Although brain stem death diagnosis has its critics, it is largely accepted by medical professionals. However, PVS diagnoses have been repeatedly called into question, especially in terms of their prognosis (Fernández-Espejo et al. 2013; Davies et al. 2015; van Erp et al. 2015).

For this reason, if there is a way of achieving the benefits that Ber identifies *without* redefining brain death, this would be preferable. There are a number of additional reasons to support this. Firstly, PVS is a more unusual phenomenon than brain death. Van Erp et al. suggest a prevalence of 0.1 to 0.2 PVS type patients per 100,000 members of the general population (van Erp et al. 2015: 85). In contrast, the UK's National Health Service gives figures of 18 cases of brain stem death per million of the general population. Interestingly it notes that Spain's rate is far higher, at 50–60 per million (NHS). Secondly, although there are those who dispute their validity, the use of brain stem death criteria for determining when a patient's life is effectively at an end is widespread, in the context of organ donation. In contrast, it is not so clear that PVS patients' living interests are at an end; they *may* recover fully or partially. Patients who are brain stem dead, *cannot* recover. Irreversibility is written into the definition of brain death. Accordingly, a patient who recovers, was never *really* brain dead in the first place. It is this that makes brain stem death the preferred route to organ donation.

However, before moving on to discuss other aspects of WBGD, there are some further issues related to brain death more generally that require consideration. Firstly, as suggested, the phenomenon of brain death itself and its role in facilitating organ transplantation is the subject of some criticism and indeed scepticism (Potts et al. 2001). I acknowledge this debate, and share some of the scepticism. But for the purposes of my argument, I need not enter this dispute. Those who accept brain stem death as an adequate basis for organ donation, should for consistency acknowledge its acceptability for WBGD as well. For those who reject the brain stem death criteria, clearly both organ donation and WBGD will be problematic.

Ber insists that written explicit consent would be necessary from donors willing to undergo surrogacy in PVS, and for the sake of argument I will retain this requirement for my proposed version of WBGD in brain stem dead patients. It is important to note, however, that this is a more stringent requirement than applies to organ donation in many jurisdictions, including the UK, where a patient's organs may be harvested without any supporting documentation as to her wishes. One does *not* have to sign a register or carry

a card in order to become a donor: All that is required, is for your next of kin to agree for your organs to be harvested. Is this acceptable? It has been suggested that the public is poorly informed as to the details of cadaveric organ donation and harvesting, and that some of those who join the organ donor register, might be disturbed if they understood what is involved, or even choose not to donate (Shah et al. 2014; Iltis 2015). Certainly, the processes of signing up for organ donation in the UK and the level of information that is deemed sufficient, seems strangely at odds with other significant invasive procedures either before or after death. Consenting to an operation would require a far greater degree of information; making a will would require a far greater degree of specificity and would need to be witnessed in order to be legally binding. Thus, my approach to WBGD is more, rather than less, ethically sound in terms of consent, than the standard UK approach to organ donation.

However, WBGD in brain stem dead patients would entail, as Ber observes, ventilation. Some clinicians regard somatic survival after brain stem death as being unsustainable for prolonged periods. The UK's National Health Service (NHS) states that "... the heart will eventually stop beating, even if a ventilator continues to be used" (NHS 2016). But of course it is true to say that any heart will eventually stop beating in any individual, whether or not he or she is ventilated. Life is not infinite, with or without ventilators. The question is when the heart will stop, and whether this can be controlled or postponed.

The maximum period for which a brain dead patient can be somatically supported, is unknown. Part of the reason for the NHS' oddly worded statement is to encourage relatives to accept that their loved one should not be sustained indefinitely; to be able to 'let go'. It is precisely *because* there is a fear that somatic function can be vastly prolonged, that the NHS makes this statement. It is commonly regarded as bad medical practice, as well as being unethical, to prolong somatic survival in brain dead patients. I suggest that at least one factor here relates to the discomfort that arises from the liminal state between life and death, that brain dead patients occupy. Although clinically they are deemed 'dead', we find it hard to act as though this is really uncontroversially true, in comparison with cadavers, for example. Ventilated patients are warm, and have a healthy colour from the circulating of their blood; cadavers are cold and discoloured. Left alone, a cadaver will decompose quickly if not chemically preserved or refrigerated. Left alone, the ventilated organ donor will not decompose unless some additional event or intervention occurs.

All of this makes healthcare providers reluctant to prolong this paradoxical state of death-in-life. And indeed it can be hard for relatives too. However, brain dead patients *can* be sustained for prolonged periods. Of the documented cases of prolonged somatic survival (with and without gestation as a complicating factor), many end in death specifically *because* ventilator support was withdrawn – for ethical reasons. For example, Said et al. note that the duration of the longest brain dead gestation is 110 days. The foetus in this case was delivered at the earliest point at which it was deemed viable, at 32 weeks’ gestation. Ventilation was withdrawn from the mother immediately after delivery, resulting in her ‘death’ (Said et al. 2013: 220). Such cases do not tell us how long the patient *could* have been sustained if ventilation had continued (Parisi et al. 1982). Armstrong and Fernando observe that there is no known upper physiological limit to the “prolongation of somatic function in the absence of brainstem function” (Armstrong et al. 2013: 174).

Prolonging ventilation and somatic survival in brain dead patients is undoubtedly a disturbing prospect. However, given the emphasis placed on informed consent in my approach to WBGD, we can dismiss much of this anxiety. The acceptability or otherwise of WBGD is for the patient to determine: a matter of subjective interpretation. A harder question might be whether there is something *intrinsically* undignified about treating people in this way. WBGD involves treating the patient’s dead body as a means to an end, rather than as an end in itself. The patient moves from being the focus of medical concern, to being a repository of tissues that can be used to benefit others. The prolongation of the ventilation period exacerbates our awareness of this. Yet this is already a part of our organ donation process. Patients deemed eligible to donate will almost invariably already be ventilated, as part of their medical treatment. At the point at which brain stem death is declared, organ donation is likely to be discussed. If relatives agree to the donation, the patient’s ventilation will be continued along with other interventions to ensure that the organs will be maintained for transplant in optimal condition.

Strictly speaking, it is not clear why the *prolongation itself* should pose a problem here: If it is wrong to use people’s bodies for the benefit of others after they become brain dead, the mere fact that we ventilate them for two days, two weeks, or two years makes little difference *except* insofar as it forces us to acknowledge and recognise what we are doing before we hasten on to the next stage. The justification for prolonging somatic survival in conventional organ donation is partly the benefits that are expected to derive

for others, but also the idea that if the patients wanted to donate their organs, it may be reasonable to take the steps to preserve the organs that are no longer directly in the patient's medical best interests. The same criteria apply to WBGD; the period of prolongation is further extended, but the means and justification are the same, and – if undertaken according to my proposal – the patient will have given explicit consent.

There may be practical issues, however, since the longer period of ventilation required for WBGD would give scope for more medical complexities than those involved in conventional organ donation. Not only this, but there may be a question as to the feasibility of initiating pregnancy in brain dead patients. There are at least two reported cases of PVS patients *becoming* pregnant, after their PVS diagnosis after being raped, as Ber reports (Ber 2000). But to date, there are to my knowledge no documented reports of the initiation of pregnancy in brain stem dead patients. This could mean that the incidence of rape in brain stem dead patients is zero, in contrast to that in PVS patients. Alternatively, it might suggest that the incidence of rape is similar in both cases, but that rape in brain dead patients does not result in pregnancy. (It is perhaps misleading to use the term 'rape' in the case of brain dead patients, since the victim is already dead. Sex with a corpse is necrophilia rather than rape, and necrophilia cannot result in pregnancy.)

The ability of PVS patients to become pregnant indicates that PVS is not incompatible with normal hormonal and biological processes. Brain stem death involves a much more sweeping impact on the body's normal functions. Blood pressure, temperature and hormonal balance all require artificial maintenance and monitoring in brain stem dead patients on ventilators. It may be unlikely that a patient could become pregnant in the 'natural' way without additional hormonal intervention. However, both in Ber's argument and in my adapted proposal for WBGD, there is no requirement that the pregnancy come about through 'natural' conception. As with many surrogacy arrangements, the commissioning parents may want to create an embryo for implantation using their own gametes or those of donors. Thus, implantation could be a surgical affair, and could be preceded and followed by appropriate hormonal therapy to ensure maximal chance of success.

Armstrong and Fernando note that the lowest gestational age at which a foetus can survive in a brain dead mother has not yet been determined (Armstrong et al. 2013: 174). Said et al. go further in pointing out that with advances in critical care medicine, early gestational age of the foetus is no longer a limiting factor in terms of its prognosis (Said et al. 2013). However, up till recently, it has been regarded as *inappropriate* to prolong a brain dead

pregnancy in which the foetus was of less than 16 weeks' gestational age. This cut-off point seems to have been the product of a combination of assumptions incorporating beliefs about the moral status of the pre-viable foetus as well as the likelihood of success. Again, therefore, there is a lack of data here that arises at least in part from uncertainty and moral squeamishness about the prospect of prolonging somatic survival of pregnant brain dead women.

All those who discuss these issues, agree that there is a lack of data. If WBGD has anything at all to recommend it, this gives us a *prima facie* reason at least for seeking additional information. We will not know what variables affect the outcomes without carrying out further research. But even without having undertaken such research it is evident that WBGD will offer some benefits over standard cases of brain dead gestation as reported in the literature. Every case of brain dead pregnancy reported to date involves a catastrophic event that occurs to a woman *after* the initiation of her pregnancy. Of the 30 cases reported, 12 viable foetuses were delivered and survived to discharge (Said et al. 2013). Whether trauma, spontaneous haemorrhage or other causes, the woman and her foetus have already been adversely affected by the event that has resulted in her brain death. Not only this, but women and their foetuses are likely to have been further damaged by aggressive attempts to save them. Case reports bear this out, detailing a catalogue of attempts and failures to save the patient (Said et al. 2013). The patient's condition fluctuates as she goes through the transition from healthy pregnant woman to critically ill patient, to brain dead patient.

The foetus, if it survives all of this, will also have undergone a significant trauma from which it might be surprising if it emerged unscathed. On top of all this, the lack of experience and accumulated knowledge of how to , have played a significant part in the fate of the foetuses involved in the 30 cases discussed above. Notwithstanding this unpropitious start, it seems that those foetuses who do make it to delivery, do well. Powner et al. report on a range of cases in which pregnant brain dead women's somatic functioning was prolonged. They followed up the offspring and found that all seemed to be developing normally except one who was born with congenital abnormalities caused by the mother's use of phenytoin (taken for epilepsy) (Powner et al. 2003).

WBGD would be likely to have better outcomes precisely because it would only be carried out in those patients in whom somatic support had been achieved and stabilised. Moreover, in the case of WBGD, since the pregnancy is deliberately initiated and the *primary aim* from its outset is the

wellbeing and survival of the foetus, there would be no point at which the mother's interests were presumed to be in conflict with those of the child. By contrast, in each of the 30 reported cases described above, the decision to focus on trying to sustain the foetus was not made until some way through the mother's treatment process when some therapies detrimental to the foetus would have been tried on the mother. Given all these considerations, it seems that there are grounds to think the prognosis of foetuses in a WBGD scenario would be better than those reported in the literature to date.

Given the current state of medical science, as outlined above, WBGD is not beyond the realms of possibility. Since we are happy to accept that organ donors are dead enough to donate, we should have no objections to WBGD on these grounds. WBGD donors are as dead as other donors – no more, no less. Since we are happy to prolong the somatic survival of already pregnant brain dead women, the prolongation and initiation of pregnancy among those who have requested this, should not trouble us unduly. But to move towards the actuality of WBGD, some further argument may be required to show why WBGD is ethically desirable, and to demonstrate why, in the face of the most obvious objections, it may nevertheless be a preferable alternative to uterus donation and surrogacy and even to pregnancy itself.

The status of the WBGD embryo and foetus

Undeniably, in our present state of knowledge, much remains to be learnt about prolonged somatic survival, initiation of pregnancy, gestation and delivery in brain dead patients. Even those who might think there is some appeal in WBGD, might balk at the idea of how we could move ahead in the experimental phase that would be required before we could be sure that WBGD is safe and effective for routine use. This hiatus is not unusual. It exists between every prospective innovation, and our current practices. But in the case of WBGD, we face the problem of what it might mean to embark on experimental procedures that affect real embryos, foetuses and, ultimately, babies.

In jurisdictions that already permit embryo research, it is clear that some experiments on implantation and development up to 14 days would be permissible. Within the existing infrastructure in the UK, for example, and given consenting patients, there seems little reason why preliminary experimentation should not go ahead. This might require a still more stringent approach to consent, whereby WBG 'donors' would be required to understand

that their bodies would be used to gestate embryos as part of a broader research strategy designed to establish the safest, most effective and cheapest approaches to WBGD. There is another chasm, however, between moving from experimental procedures designed to end in the destruction of the embryo at 14 days, to experiments that affect later stage foetuses, or which might be designed to result in the birth of live offspring.

I will consider first the earliest stages where embryonic implantation is being explored. We already allow parents to create multiple embryos in the pursuit of IVF, and for the surplus embryos to be discarded or donated for scientific research. We also routinely allow people undergoing fertility treatment to create more embryos than are likely to be implanted, with the understanding that a) this enables the 'best' embryos to be selected, b) it means that 'spares' can be created and kept for future attempts and c) 'discarded' embryos will be a product of the process of IVF and can be used for research or destroyed. Thus, the disposability of the embryo is a concept that has become deeply embedded in the practice of IVF. All of this tends to support the idea that WBGD would not in fact involve anything radically new in terms of the treatment of embryos, or of their moral or legal status.

Once implanted in the WBG donor, the embryos would develop into foetuses. Foetuses have greater protection in UK law: Direct research on foetuses is not permitted. Harm, or even uncertainty, relating to the foetus in utero might therefore pose a problem. However, the law does allow for abortion; moreover the legal grounds for abortion include impairments or disease affecting the foetus. Thus, with very close surveillance, it is reasonable to think that – if foetuses are severely damaged by unexpected factors arising from brain dead gestation – this need not result in the birth of severely damaged babies. Rather, it would result in the termination of the process at the discretion of the commissioning parents. Abortion, including late term abortion, can be traumatic for gestating women both emotionally and physically. However, in the case of WBGD, the gestating woman suffers from none of these problems: She is already dead and cannot be harmed. Commissioning parents may decide on abortion or selective reduction in accordance with their own wishes, without having to worry about the effects on the gestating donor.

This is an important consideration: Abortion is one of the issues that make surrogacy ethically troublesome. Getting pregnant on behalf of a commissioning parent is one thing, but being required to undergo an abortion seems to push the boundaries of what is acceptable in medicine, yet it is a fairly standard part of surrogacy contracts. In addition, surrogacy contracts

often include clauses that require the surrogate to undergo, or forego certain medical interventions. This may be construed as relinquishing a right that, properly speaking, is inalienable. In the case of WBGD, we face no such difficulties. As the gestational donor is in some ways much more explicitly the proxy of the commissioning parents, than a surrogate, it is not necessarily a stretch to regard selective reduction or the removal of a damaged foetus, as undergoing abortion by proxy.

In other examples of innovative fertility treatments whose effects on foetuses and offspring are uncertain, we accept that parents go ahead, hoping for the best, but recognising that in the event of a bad outcome, the pregnancy will be terminated. In some ways, WBGD offers a more familiar way forward than, for example, IVF when it was first undertaken in humans, and mitochondrial donation. It offers also better-known paths than uterine transplantation, whether living or cadaveric. We already know that human foetuses can survive gestation in brain dead patients. This is more than Steptoe and Edwards knew when they implanted the embryo that would become Louise Brown and more than Mats Brännström and his team knew when they implanted an embryo in a transplanted uterus (Brännström et al. 2015).

Given that we already treat fertility medicine as an arena in which embryos and foetuses may be damaged or deliberately destroyed, it is not clear that the admitted uncertainties involved in WBGD are such as to force us to repudiate the whole endeavour. A final point here is that in fact WBGD offers a further benefit over standard pregnancies: The WBGD donor is under absolute medical control and surveillance. The move towards greater surveillance of pregnancy in living women has been strongly criticised by many feminists for its oppressive and intrusive incursions into the everyday lives that women still have to live while pregnant. The WBG donor *has* no everyday life: Her function is solely to gestate. We dare not implant too many embryos into living women, because selective reduction is traumatic and harmful to the pregnant woman. There are no such problems in relation to the WBG donor. If she needs more or less of any particular drug, or if foetal interventions are required, we have none of the potential conflicts that can affect ordinary pregnancies. Parents can implant as many embryos as they can generate, maximising the chances of at least one viable birth, and if necessary discarding any damaged or diseased ones in advance. Again, pointing out these possibilities may sound ugly, but they are processes that are routine in fertility medicine all over Europe.

Who needs WBGD?

The slogan on the UK's organ donor card states 'I would like to help someone live after my death'. It is not clear that WBGD achieves this in the way that a heart or liver transplant might. On these grounds it might be deemed that even if WBGD is feasible and might be of interest to some people, no-one *needs* it in the way that they need other forms of donation, and it should therefore not be treated as a priority, especially in a public health service. This might be significant in particular due to its resource intensive nature. It might also raise difficulties for Ber's proposal that gestational donation should be made available only on the basis of genuine need.

What *is* the kind of need that operates in organ transplantation, surrogacy and fertility treatment? I suggest that in fact that relationship between medical need and these interventions is already so tenuous as to be almost meaningless in terms of drawing logically compelling distinctions between different classes of claimant. While a heart or liver transplant may literally save someone's life, many transplantable organs and tissues are not directly life-saving. The corneas, even the kidneys, may improve the quality of a person's life, and might increase one's life span, but since people can live without eyes, and survive for many years with dialysis, the particular insistence that organ donation should be 'life saving' seems outdated though it is frequently used in exhortations for the public to donate. The distinction between life-saving, and life-improving, or life-extending, is often hazy in discussions about organ donation. However, with increasing expertise in transplant surgery, the options for non-life-saving interventions – face, larynx, hand, uterus, etc. – are multiplying. If we accept this, we have no grounds to object to WBGD on the basis that it is not a life-saving intervention. Indeed, WBGD in some senses can be *more* accurately described as 'helping someone to live' than many other forms of donation, since it effectively allows for the creation of a new life.

However, as I have noted, uterine transplants now appear in the list of potentially non-life-saving transplants. Given this, perhaps it is less clear that we have any grounds for considering WBGD at all, if uterine transplants would meet the same need more effectively, and perhaps at a lower cost. Uterine transplantation, like hand or face transplantation, is not life-saving *per se*, but rather life-enhancing. However, the life-enhancement gained through uterine transplant comes at a considerable medical cost; more so than many other quality-of-life enhancing transplants. In the trade-off between improved quality of life and medical harm, the recipient of the trans-

plant may knowingly sacrifice some years of their life and/or health. The donor, if living will also undergo a serious operation with all the attendant risks. There has been some deliberation as to whether living or cadaveric donation should be preferred for uterine transplants (Williams 2016). But at present both are being pursued despite their undeniable medical risks.

For all these reasons, with the advent of uterine transplantation, I suggest that WBGD is more, rather than less of an urgent priority. The physical risks undergone by recipients of uterine transplants considerably outweigh those experienced by living surrogates. Moreover, the objections that Ber holds towards surrogacy may well apply to living uterine donation: At present, it is usually a female relative who donates. But it is easy to foresee that women who might commission a surrogate today might enter the market for living uterine donation in the near future. These are women who might well wish to gestate a foetus in their own bodies even if they have to appropriate other women's wombs in order to do so. It might be thought that cadaveric uterine donation therefore offers a better prospect. Here, at least, the donor is brain stem dead and the question of exploitation should be no more problematic than any other form of organ donation, at least for the donor. This is especially so if we accept Ber's insistence on documented consent from prospective donors.

However, even here there are considerations that seem to undermine the appeal of uterine transplantation, especially if we accept Ber's idea that the concepts of medical need and medical contra-indication of pregnancy have a role to play. The *recipient* of a uterine transplant will undergo major surgery; she will be unable to give birth vaginally; she will be obliged to take anti-rejection drugs that may cause cancer; the anti-rejection regime may fail, resulting in urgent surgery to remove the uterus. Women who receive a donated uterus are expected to have it surgically removed after having had as many children as they are hoping for. Again this is a procedure involving major surgery (Brännström et al. 2015). In any other setting, the imposition of such significant risk on an otherwise healthy patient would be deeply problematic.

WBGD offers a clear benefit over either form of uterine transplantation. The donor is already dead; the 'recipient' has no need to undergo the extensive surgery required for uterine transplantation. Moreover, while unlike any other form of organ donation, WBGD imposes no risks on the 'recipient', it has the additional advantage of conveying significant clinical *benefits* on women who make use of it. If we compare WBGD with uterine transplantation this is obvious. The 'recipient' is spared major surgery. But even if

WBGD were offered as an alternative to pregnancy generally, the clinical benefits would be striking. It is here that I diverge most significantly from Ber. She argues that only the neediest of claimants should have access to WBGD – those who have clear medical contra-indications to pregnancy, or lack a uterus altogether. The problem with this is that pregnancy itself should properly speaking be medically contra-indicated for women generally.

It is well known that to take contraception is safer than to become pregnant, and that to abort a foetus is safer than to carry it to term. To expose oneself to risks comparable to pregnancy and childbirth would be deemed foolish and pathological in any other context. I have previously shown that in a comparison between pregnancy and measles, pregnancy comes out considerably the worse in terms of morbidity and mortality (Smajdor 2012). Yet concerted medical efforts are focussed on ridding ourselves of measles, while women are expected to submit themselves to the greater risks of pregnancy and childbirth almost without thinking about it. Measles is a notifiable disease whose eradication is an avowed goal of medicine. It follows that pregnancy should – all other things being equal – also be regarded in this light, since it is riskier than measles. We cannot yet forego the uterus altogether for the reproduction of our species. But we *can* transfer the risks of gestation to those who are no longer able to be harmed by them.

Feminist concerns and male pregnancy

There are aspects of WBGD that might stand out as being particularly unacceptable, in their objectification of the body. WBGD clearly dissociates the functions of reproduction from the person. The reproductive capacity is in some senses commodified, it is valued for what it can produce rather than its intrinsic association with the person whose capacity it is. Women are often objectified for their sexual or reproductive functions, even while they are very clearly alive. In particular, the idea that a pregnant woman is, or should be treated as, a foetal container, frequently reasserts itself. WBGD *is* quite straightforwardly the use of the body as a foetal container. Could it be that in allowing such use, we would somehow condone or reinforce the idea that living women who are gestating are also to be treated as mere foetal containers? It could be argued that the prospect of WBGD involving brain dead women should have no impact on living women, any more than harvesting the heart from a brain dead man should have an impact on living men. However, perhaps this is disingenuous. WBGD necessarily involves

the willingness and ability to separate women's reproductive functions from their very consciousness.

Even though no-one would necessarily suggest that this should alter the way we regard ordinary women and their pregnancies, it might send an implicit message, or reinforcement, to deeply entrenched assumptions and prejudices. The prospect of the unconscious woman's body, filled and used by others as a vessel, is a vivid illustration of just what feminists have fought against for many years. However, these feminist concerns might be mitigated if men could also participate in WBGD.

The prospect of male pregnancy is not, as many would imagine, fanciful, or a piece of science fiction. In 1999, Robert Winston told reporters that there were no intrinsic medical or scientific problems with initiating a male pregnancy: the danger would be in the delivery – detachment of the placenta from whatever organs it had adhered to could be fatal (Times Higher Education 1999). We already know that pregnancies can come to term outside the uterus – in women (Ikechebelu et al. 2005). The liver is a particularly promising implantation site, because of its excellent blood supply. However, as Winston noted, this could be risky – even fatal – for the person carrying the pregnancy. But of course, in brain dead donors, there is no meaning to the concept 'fatal': the gestator is already dead. Thus, even if the liver is damaged beyond repair after the gestation, this would not pose a problem except insofar as it might mean that male gestators could carry only one pregnancy, rather than many consecutive ones.

Another possibility is that uterine transplants could be undertaken to enable brain dead men to gestate. This would obviate the risks to the liver, and the foetus would be gestated in an authentic human uterus. In this case, the only additional risk would be from the anti-rejection drugs; but since these are deemed acceptable for living patients, it seems reasonable that they should also be acceptable in patients who are in any case already dead. The prospect of the male gestator could thus appease some feminists who might otherwise feel that brain dead gestation is a step too far in the objectification of women's reproductive functions.

Conclusion

Rosalie Ber's idea of using women in PVS as substitutes for surrogates has received surprisingly little attention since she first published her paper. My adaptation of her suggestion would enable more people to donate, and more

people to benefit. It requires no redefinition of concepts such as brain death or PVS. Moreover, it involves no substantial change to practices and procedures that are already routine. In the face of the prospect of uterine transplantation, the possibility of safer, more ethical alternatives becomes still more pressing. For these reasons, WBGD deserves serious consideration. Of course, this proposal may seem shocking to some people. Nevertheless, as I have shown, if we accept that our current approach to organ donation and reproductive medicine are sound, WBGD donation seems to follow relatively smoothly from procedures that we are already undertaking separately. What I put forward here, can be viewed as a thought experiment on one hand; but if we reject the conclusion that WBGD is acceptable, it suggests that there is already something wrong with the practices we are currently undertaking. As a thought experiment, WBGD serves to highlight this. On the other hand, if WBGD is viewed as a straightforward means of facilitating safer reproduction, and avoiding the moral problems of surrogacy, we should be ready to embrace it.

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