IN FAVOUR OF FREEZING EGGS FOR NON-MEDICAL REASONS

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ABSTRACT
This article explores the social benefits and moral arguments in favour of women and couples freezing eggs and embryos for social reasons. Social IVF promotes equal participation by women in employment; it offers women more time to choose a partner; it provides better opportunities for the child as it allows couples more time to become financially stable; it may reduce the risk of genetic and chromosomal abnormality; it allows women and couples to have another child if circumstances change; it offers an option to women and children at risk of ovarian failure; it may increase the egg and embryo pool. There are strong arguments based on equal concern and respect for women which require that women have access to this new technology. Freezing eggs also avoids some of the moral objections associated with freezing embryos.

‘Children are wonderful, but they can also stress you financially, physically and emotionally. I wanted to be in a rock-solid marriage with a track record before I had kids. And I didn’t want that process to be strained by some deadline that no one could really identify’.

Only around 50% of women who postpone childbearing until their thirties conceive in the six years following. For those who do not conceive due to infertility, egg freezing would increase their chances of being able to conceive. In 2004, Extend Fertility, a United States company, began providing egg freezing and IVF services to women for social reasons. In Britain, 185 have frozen their eggs for medical or social reasons and so far three pregnancies and four babies have resulted. Yet the British Fertility Society (BFS) does not encourage egg freezing for social reasons. More aggressively, the American Society for Reproductive Medicine has called for fertility clinics to stop offering egg freezing to healthy women. As a result, women have recently been confronted by admonitions in

the media: ‘Career women “must not have eggs frozen to delay family” ’,7 and ‘Docs pour cold water on egg-freezing promises’.8

Improvements in freezing techniques have now raised the success rate of using frozen eggs close to that of ordinary IVF, yet despite this, women are still warned against using the technology to improve their chances of having children at the time of their choosing.9 We argue that there are good moral arguments in favour of offering egg freezing for social reasons.

IMPROVEMENTS IN EGG FREEZING TECHNIQUES

Unassisted fertility declines with age, due mainly to a decrease in the number and quality of oocytes. However ‘very satisfactory pregnancy rates can be achieved using oocytes donated by younger women’.10 There is a critical relationship between the age of the egg and successful conception and pregnancy – ‘It is the age of the egg, not the age of the womb, which determines the miscarriage rate’.11 This phenomenon has been demonstrated by recent successful pregnancies in women over the age of sixty, all of whom used younger donor eggs.12

7 The Times, 18 October 2007.

Some pregnancies indicate that older women employing egg freezing and IVF for non-medical reasons (‘social IVF’) could look forward to a reasonable chance of being pregnant, particularly if success rates increase because of technological advances.

Egg-freezing techniques that enable women to preserve eggs and use these, rather than those of a donor, had relatively low success rates in the past.16 According to HFEA statistics available up to 2004, of the 77 egg thaws in the United Kingdom, 37 provided viable eggs but resulted in only 3 live births producing 4 children. With the development of new vitrification freezing methods (the ultra-rapid ‘Cryotop’ method), however, significant improvements in successful thawing rates and live births have been achieved. Reportedly, eggs preserved using vitrification have a 91.2% survival rate as opposed to 73.2% using the old slow-cooling method.17 A 2007 comparison study concluded that ‘there was no difference in fertilization rates (76.3% and 82.2%), day 2 cleavage (94.2% and 97.8%) . . . and blastocyst formation (48.7% and 47.5%) for vitrified and fresh oocytes, respectively’. Embryo quality was also similar for both groups, and following 23 embryo transfers, the pregnancy rate was 40.8%. The authors concluded that,

[the Cryotop method preserves the potential of vitrified oocytes to fertilize and further develop, which is similar, when evaluated simultaneously, to fresh counterparts. Excellent clinical outcome indicates the possible use of this technology for egg donation programs, as well as a high potential for establishing oocyte banking.18

16 There have been at least 550 births from frozen eggs around the world: R. Khamsi. Healthy Women Warned over Egg Freezing. New Scientist news service 17 October 2007.
18 The miscarriage rate was 20%. A. Cobo et al. Comparison of Concomitant Outcome Achieved with Fresh and Cryopreserved Donor Oocytes Vitrified by the Cryotop Method. Fertil Steril 2008; 89: 1657.
Other recent studies support this finding, having shown comparable rates of fertilization and early developmental ability in fresh and frozen-thawed eggs (preserved using Cryotop).^{19}

Information is now available on the health of children conceived using frozen eggs, with at least two studies yielding positive information. A retrospective study of research on pregnancies using cryopreserved eggs reported 272 pregnancies up to July 2006. Health status information was available for 197 newborns, with only one reported congenital abnormality (well within normal range). Follow-ups of child health from birth up to three years were available for 31% and all were developing normally.^{20} Genetic defects due to slow freezing are a major risk associated with egg freezing. Removing this risk, new vitrification techniques have little or no effect on meiotic spindles and chromosome alignment.^{21}

THE CASE IN FAVOUR OF EGG FREEZING FOR SOCIAL REASONS

Given that egg freezing is now significantly more successful, we should reconsider using it to expand women’s reproductive options. Concerns about high rates of defects and low rates of conception are no longer a basis for preventing access to egg freezing, as these rates are now similar to IVF, which is well-resourced and actively promoted as a means for infertile people to conceive children.

We present two main arguments in favour of allowing and promoting access to egg freezing for social reasons: benefits to women and equality. We then consider the range of objections to egg freezing for social reasons, and conclude that these do not outweigh the arguments in favour.

BENEFITS TO WOMEN

In the UK, the median age of childbearing rose from 27.6 years in 1971 to 29.5 years in 2006.^{22} The average age of first birth is also climbing. In 1971, it was 23.9 years, while in 2006 it was 30.3 years.^{23} At present, nearly 8% of women have their first child after the age of 35.^{24}

Women may enjoy significant benefits by stopping the reproductive clock, which many cite in support of their desire to freeze eggs and postpone child-bearing. The first reported study of women’s motivations for egg freezing (the Gold study) found that 50% felt ‘pressured by their biological clock’ and 15% saw egg freezing as an insurance policy, but that they did not expect to need it. The mean age of the women under study was 38.6, all of whom had bachelor’s degrees (75% had higher degrees or professional qualifications), but only 20% were in committed relationships. More than half saw egg freezing a means to ensure they took advantage of all possible reproductive opportunities.^{25}

Egg freezing has a range of benefits for women. Using ‘younger’ eggs could reduce the incidence of chromosomal abnormalities, which increase with age. Coupled with pre-implantation diagnosis, egg freezing could potentially eliminate many genetic abnormalities. We consider four further benefits in detail below: equal participation in employment, time to find a partner, time to be emotionally and psychologically ready, and ‘egg insurance’.

Equal Participation in Employment

Women are having children later today, partly because they are more likely to pursue higher education and a career. Rises in cost of living have also increased the need for women to contribute to family earnings. The time of childbearing has an identifiable impact on educational


^{23} Ibid: Table 3.3 (Live births: within marriage, within marriage to remarried women, age of mother and birth order).

^{24} Ibid.

and employment outcomes for women, constraining their capacity to make the most beneficial choices about their careers. Due to this constraint on their choices, women face reductions in earning capacity and potentially serious financial implications that men do not. In fact, they may have very few choices at all.

Educational qualifications have serious implications for a woman’s earnings and likelihood of being employed.\textsuperscript{26} It is therefore important that women are able to obtain the qualifications they need to compete in the labour market. The point at which women leave the workforce to have children is also important for their career prospects and earning capacity. The thirties represent a crucial time in the careers of many women, and an interruption to bear children at that point can seriously prejudice a woman’s chance of advancement.

Data on fertility patterns show that for the latest cohort of women reaching the end of their childbearing capacity in 2000 and 2001, 28% of those with degree level qualifications remained childless as opposed to 20% of those with intermediate qualifications and 16% with no qualifications.\textsuperscript{27} It is evident that women are often faced with difficult choices about what to prioritize at different times in their lives – children, education or career.

We argue that allowing women to use egg freezing can give some women opportunities they would otherwise not have had in societies in which full participation by women in the workforce is not a reality. In short, egg freezing can assist in women pursuing their career goals.

But one might ask whether we actually help women – in particular make them more autonomous – by taking for granted their bad employment situation and offering them egg freezing to deal with it. Perhaps not, especially if we conceive of autonomy relationally (i.e. as socio-politically constituted). Carolyn McLeod and Susan Sherwin write that ‘relational autonomy asks us to take into account the impact of social and political structures . . . on the lives and opportunities of individuals and . . . encourages us to understand that the best way of responding to oppression’s restrictive influence on an individual’s ability to act autonomously is to change the oppressive conditions of her life, not to try to make her better adapt to . . . those conditions privately’.\textsuperscript{28}

We accept that women’s choices are constrained in this manner, and it is true that many of the problems we cite stem from traditional employment models that are based on the employee being male. We should pro-actively seek to change this situation to ensure that women have the opportunity to pursue a career as they choose, rather than having to fit into a model designed without them in mind. But such a desire for change is not necessarily undermined by allowing access to technological advances that can remove some of the constraints women face in their employment. We can pursue various secondary strategies, including egg freezing, for improving women’s employment situation.

Thus, we do not advocate substituting the removal of barriers to employment in current employment models for promoting change to these models. Efforts to change them through increasing awareness and pressure for governmental action should continue in parallel to allowing egg freezing. It is likely only a small percentage of women will freeze their eggs to adapt their reproduction to employment needs anyway. Hence, allowing egg freezing will probably not undermine efforts to promote change, as it will not result in a large-scale transformation of women’s behaviour.

Also, if women are to play a role in eliminating constraints on employment and childbearing, it is important that as many women as possible are able to get into positions of authority and influence, and this may be facilitated by egg freezing. Thus, egg freezing can be viewed as kind of reproductive affirmative action: when discriminatory features of society are changed, it may no longer be necessary. But in the meantime, in our view, it empowers women.

Given that restrictions on having children and pursuing a career still exist and may – despite our efforts – exist for a long time to come, and that some women will wish for other reasons (noted below) to postpone childbearing, allowing egg freezing for social reasons is consistent with recognizing and addressing restrictions on women’s choices. Freezing eggs is not a wholesale solution, but is one amongst many solutions that can be effective.

\textsuperscript{27} A. Berrington, op. cit. note 2.
cloud whether we should be having children together. I don’t want to have children until I feel emotionally and financially prepared.  

The Gold study also reported that a proportion of respondents sought egg freezing to ‘take the pressure off the search for relationships’. The absence of a partner can be a key variable affecting the chance of starting a family at older ages, while the odds of a woman having a child are three times higher for those with partners, than for those without. The option to freeze one’s eggs can address these factors that might otherwise lead some women into unhappy marriages, single parenthood or unwanted childlessness.

Time to be Emotionally and Psychologically Ready for Childrearing

I experienced four miscarriages after the birth of my first daughter, when I was 43. The loss was excruciating, especially as I did not have years ahead of me to try again. The upside, however, has been having a child when I was ‘ready’ psychologically and emotionally, and in the right relationship and time of life, to do so.

Social IVF would allow couples to choose the best time to have children. Currently, they must juggle establishing a career and having a family. It may be better for both child and parents that the family is the result of mature and well considered choice, and is financially secure so that the parents are able to spend time with their children.

‘Egg Insurance’

Freezing eggs is already offered to women with cancer or autoimmune disease about to undergo treatment. Some presently fertile women are at risk of familial premature menopause because they have a genetic condition such as galactosaemia or Turner’s syndrome. These women might choose to store eggs to insure against premature ovarian failure.

There are many other situations in which women might wish for a similar form of ‘insurance,’ one that will allow them to have a child, or another child, if their circumstances change: they change partners, their financial circumstances improve, a child they now have dies, or they simply change their attitudes. Perhaps some are not particularly good reasons to risk not being able to have a child (for they will be relying on a technology that offers no guarantees), but the woman who makes the choice to freeze will bear that loss if her ‘insurance policy’ fails. As long as she is fully informed about the risks involved, her autonomous choice should be respected. Provided she does not exaggerate her chances of success, this choice can be rational.

Freezing eggs also avoids the moral concerns that some people have about freezing embryos as insurance, namely that a morally significant life begins at conception and that embryos are persons, with the same rights as other persons. Anecdotal evidence suggests that this concern is one of the motivations behind some women’s decision to freeze eggs rather than embryos.

Egg freezing also avoids both the need to determine with whom to create an embryo, and the complications that arise when the couple later disagrees about what is to be done with it. As an example, Natalie Evans froze embryos created with her then-partner prior to having chemotherapy. She hoped to implant them after her treatment and bear a child of her own once she was well enough to do so. The couple split before Evans could use the embryos to become pregnant, and her ex-partner withdrew his consent to their use. Evans was denied the right to use the embryos, and is now unable to conceive a child of her own. Had she frozen her eggs instead, her situation would be profoundly different.

We do not distinguish between public and commercial provision of egg freezing services, and we recognize that problems unrestricted commercial provision may present. But it is beyond the scope of this paper to consider this.


For example, such as the dispute over the use of frozen pre-embryos after divorce in Davis v Davis, 842 S.W.2d 588, 597 (Tenn. 1992).

EQUALITY

Men already enjoy the choice of when they have children. Women should have the opportunity to enjoy the same choices as men, if we can provide them, unless there are good reasons not to. Men regularly postpone fathering children into their 40s, 50s, 60s, 70s and even their 80s, yet they face little or no censure. As Robert Edwards, one of the pioneers of IVF, has commented: ‘If a man of 60 fathers a baby, then we buy him a drink and toast his health at the pub. But it is totally different with a woman of the same age’. 39 Rarely are moral arguments against this difference raised, perhaps because it appears natural, but more likely because there must always be a woman of childbearing age to have the child who will take on the role of sole carer when her elderly male partner dies.

There may be good reasons not to have children later in life. James Doohan, the actor who played ‘Scotty’ on the Original Star Trek television series fathered seven children. By the time the seventh was born, he was suffering from Parkinson’s disease, lung fibrosis, diabetes and Alzheimer’s disease. He was 80 years old, and died when his daughter was only five. 40 Doohan’s daughter will now grow up without a father, and his wife will have to carry the burden of childcare alone as she herself reaches old age. These are significant harms, yet, in stark contrast to the criticism suffered by women who bear children in their 50s and 60s, Doohan appears to have no public censure. Indeed, in its obituary for Doohan, the BBC chose instead to liken his choice to the mission of the Enterprise itself, when at age 80, he ‘boldly went into fatherhood for the seventh time’. 41

Doohan’s case might be a very apt story to demonstrate why people should not postpone childbearing into old age. As we discuss below, many people may be mentally and physically capable of parenting well into older age, but there may be a threshold age past which reproduction produces too many harms to be morally permissible. But if we think there are good reasons to prevent or discourage people from producing children when they are older, then these should apply equally well to men and women. There is no evidence to suggest that women’s parenting abilities decrease any faster than those of men. Indeed, given that women have longer life expectancy, arguably they, rather than men, should be supported in having their children later. 42

OBSERVATIONS

Below we consider a range of objections that have been raised against egg freezing for non-medical reasons. As a general point that applies across these objections, we also argue that both the timing and the cause of a woman’s inability to have children are not, in and of themselves, morally relevant to whether she should be permitted to freeze her eggs.

A fertile woman who freezes her eggs has not at the point of freezing suffered the harm of infertility, but she inevitably will do so, after menopause, if not sooner for medical reasons. According to the principle of temporal neutrality, however, the timing of this harm makes no moral difference. 43 Similarly, the cause of the harm makes no difference – it is morally irrelevant that the cause is menopause, rather than chemotherapy to treat cancer. For the woman, the loss is the same. Hence, the only relevant feature of advanced age in the context of choosing when to bear children is that life expectancy and health may be lower, but as we argue later, these are good enough for childrearing well beyond menopause. On this basis, the explanation for why a woman cannot have a child, and the time at which infertility occurs, are not

42 It is true that we can much more easily prevent women from having children later in life than we can men. To restrain men from fathering children would entail measures such as compulsory sterilisation and invasions into their private lives we would probably regard as unacceptable. By contrast, we can restrain older women from reproducing by less morally problematic means – we could simply withhold access to IVF. If this capacity to restrain is morally relevant, then we should restrict women from conceiving but not men. True enough, but this point does not affect our argument. We claim that other things being equal, women should have the same reproductive options as men for reasons of equality and respect for reproductive autonomy. Social egg freezing is justified on this basis, as it gives women a range of choices closer to those that men enjoy. Age restrictions and differential treatment are only relevant when a woman chooses to procreate later than whatever threshold age one considers to be too old.
morally sufficient reasons for preventing access to techniques that will enable women to avoid this harm.

Maternal Risks

Egg collection carries significant risks. Superovulatory drugs used to increase the supply of eggs may cause ovarian hyperstimulation: roughly 1/300 women require hospital admission. While this risk can be avoided by not using superovulatory drugs or by employing ovarian biopsy, both methods reduce the chance of pregnancy.44

Maternal mortality increases roughly a 4-fold over the age of 40 (to 20.6 deaths per 100 000).45 Women who freeze eggs to conceive later in life will also face higher rates of ectopic pregnancy,46 preeclampsia, chronic hypertension, cardiac disease and peri-natal diabetes.47

However, older women undergoing IVF face the same risks, and it is currently accepted that these risks are not so high that women should be prevented from taking them on, as long as they are fully informed.48 While there may be arguments that the risks are too high, these would apply generally, not simply to egg freezing. Hence, if we continue to allow women in their 40s to have IVF, then concerns about maternal risks cannot support a prohibition on social egg freezing.

Risks to the Unborn Child

Associations between IVF and increased incidences of congenital defects have been demonstrated.49 Longterm follow-up is not available, but experience so far with children from frozen embryos suggests that there is no increased risk of malignancy. Also, new vitrification techniques appear not to damage genetic material.

But an increased risk of disease in the offspring might be acceptable with ‘medical IVF’ (since IVF is the ‘only’ way for infertile couples to have children of their own), but less acceptable with ‘social IVF’, since fertile couples could have a child in the usual way at an earlier time. This objection faces the ‘non-identity problem’ (see below). Also, with social IVF, there may not have been a ‘fertile couple’ at the time of egg freezing that could have a child in the usual way at an earlier time; women who want egg freezing are generally not part of a fertile couple (or at least not a stable fertile couple).50

Moreover, if the risks to the unborn child are so great as to preclude doctors from offering social IVF, perhaps we or they should promote adoption of unwanted children in cases of ‘medical infertility’. At present, risks to children from IVF are not deemed sufficient to prohibit the use of it in the treatment of infertility. It is hard then to see how social IVF could properly be judged as ‘too dangerous’.

It is Better for Women to Have Children Earlier

Maternal mortality increases with age, and historically women who continued to have children later in life were more likely to die, leaving their children orphans. ‘Reproductive altruism’ explains the adaptive value of menopause – evolution favoured women who cared for their existing children, instead of continuing to have more, as children whose mothers remained alive were themselves more likely to reach adulthood.51

But pregnancy is much safer today, even in older women,52 and reproductive altruism is no longer required for the survival of the species. Older women having
children may be unnatural but it is not necessarily wrong. Medicine is about changing nature’s course to make our lives better, and what matters is that a couple is, or will be, infertile at a time when they want to and are able to raise children.

There are reasons to think it is actually better for women to have children later in life. Many women who have children when they are older will have higher incomes. While they face a higher opportunity cost in terms of lost earnings if they leave employment to have children later, this will often be offset by greater job security if they have sufficient experience either to retain a good job or to be sought after by other employers on re-entering the labour market. Their higher earnings also give them a greater capacity to pay for childcare, better enabling them to remain in full or part-time employment. Empirical evidence suggests that older women often have more positive experiences of pregnancy than their younger counterparts, because they are more prepared and more committed to the ‘parenting experience’. They also show lower rates of post-natal depression, although this finding is contested.

It is Better for Children to be Born to Younger Parents

‘My mum lived to be 101 and there’s no reason I couldn’t do the same.’

Maria del Carmen Bousada de Lara.56

One objection to older women becoming pregnant through the implantation of frozen-thawed eggs is that they are more likely to die while the child is still quite young, and as Arthur Caplan has argued, producing orphans is not ‘good public policy’.57 While an older mother may have less years of life to spend with her child, however, allowing the postponement of childbearing through egg freezing is unlikely to produce many ‘orphans’. In fact, it is more likely than not that a woman who becomes pregnant late in life will be alive to care for her child for many many years. In the UK, average life expectancy for women is over 80 years, so even a woman who postpones childbearing until she is 50 can still reasonably expect to live until her child reaches adulthood.58

Another, related objection is that children of older parents will have to face the burden of caring for their parents at an earlier stage in their lives than children of younger parents. Where this burden is financial, such as supporting a parent who has retired or paying for long-term care, the children are less likely to have acquired the financial resources to do so. These children may also have to leave education or employment to provide physical care, which will likely reduce their later employment prospects.

All of this may be true. Say a woman gives birth at 50, and falls ill at aged 75. Her child will be only 25 when he has to care for her, which is a serious burden. This objection has less weight, however, if we note that there may be other potential carers, such as a husband. Further, since the woman has borne children later, she is more likely to have the financial resources to contribute to her own care.

Children in this situation may also be in a better position than children borne to younger parents. Due to the age gap between parent and child, the child will be healthier and hence better able to provide care, since he will be free from his own health concerns. By contrast, the child of a younger parent may find herself caring for an ill 75 year old when she herself is 50 and has health problems or is still caring (financially and otherwise) for her own children.

A third child welfare objection is that women who have children later in life may be less physically able parents. For example, a woman who bears a child at 50 will be nearly 65 when the child reaches puberty, and arguably at this age, she will be incapable of dealing emotionally or physically with the demands of a teenager.59 When 59

58 Recent demographic information supports this view, particularly for women in high status jobs. Life expectancy for such women – the group most likely to postpone childbearing by freezing their eggs – is now 85, higher than that for women generally: J. Sheerman. Wealthy, Healthy and Aged 85: The Women Living Even Longer. The Times 25 October 2007. While we recognize that there may be good reasons not to conceive children at some stages of life, some determined by age, our argument does not require us to set a threshold age beyond which egg freezing should not be permitted. We are not arguing for a right to egg freezing, but rather against a general prohibition on it, and that women should have access to it. We do not suggest that access should always be unlimited. We also think, given the points made in the text, that a biological age of 50 for conceiving would not be objectionable, and that if egg freezing were needed to conceive at this point, the freezing would be ethically acceptable.

59 See editorial from the Lancet cited in J. A. Parks, op. cit. note 28. This objection has been raised by the American Society for Reproductive Medicine: American Society for Reproductive Medicine Ethics Committee. Position Statement on Oocyte Donation to Postmenopausal Women. 15 March 1996.

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year old Jennifer F was denied access to assisted reproductive treatment in Britain, the British Health Secretary supported this decision on the grounds that she was too old to cope with the stress of motherhood, and that this would affect the child’s welfare.  

But studies of parenting capacity contradict this assumption. A 2007 study compared parenting stress and physical function across 150 women grouped according to age at which they had conceived and delivered – after ages 30, 40 and 50. No significant differences were found between the groups, and indeed older women appeared less likely to suffer severe parental stress than women in their 40s. The study concluded that increased age does not appear to reduce parenting capacity due to physical or mental functioning or to add to parenting stress.  

Other studies show that women who decide to postpone childbearing display significant concern about the difficulties, commitment and responsibilities of parenthood. These women delay having children until the circumstances are most favourable. Consequently, children born to them have a better chance of being wanted and being born to a person willing and able to care for them.  

Age-based objections to women postponing childbearing through egg freezing are also discriminatory, against the women’s age and their gender. Age is only one predictive factor for time of death: there are plenty of others, such as drug-taking, extreme sports, a dangerous job, genetic predisposition to dying young, terminal illness, and the vicissitudes of life. If we do not discriminate based on these risks, then it is unreasonable to discriminate based on age and the increased likelihood that women who have children later in life will die when the child is young. The gender equality arguments made above also apply here.  

As Onora O’Neill points out, however, there is a difference between the misfortune of the early death of a young parent, and actually setting up a situation in which the likelihood of death while the child is young is increased. She suggests that this is ‘hardly something for which even minimally responsible aspiring parents would plan’. In cases where a child born to a very old parent would suffer significant harms with reasonable certainty, perhaps freezing should not be offered. Here, reproductive autonomy and justice concerns should yield to other considerations. But a ban on women freezing eggs to postpone pregnancy is not warranted by these cases (although an age limit on the use of IVF may be).  

Harm to the Child and the ‘Non-Identity Problem’  

Arguments against egg freezing for non-medical reasons that rest on claims about the potential harms to resulting children are flawed. But even if these arguments have some weight, they are of only limited policy relevance in the following sense.  

Derek Parfit has famously drawn attention to the fact that reproductive choices that change the timing of conception will almost invariably change the identity of the individuals who might be born. If one waits even a month to conceive rather than conceiving a child now, a different egg and sperm will combine and a different genetic individual eventually born than if one had conceived a child now. Any intervention or decision which determines the identity of the sperm and egg necessarily determines the genetic identity of the individual created, and at least in part contributes to the personal identity of the individual created.  

The consequences of this fact are significant. It cannot benefit a child to have been born earlier, for if conception had occurred earlier, then a different individual would have resulted. In the extreme case, even if IVF of older women results in physical damage to the child produced, that child has not been harmed by being conceived by social IVF (except if its life is so bad that it is not worth living). If the couple had used another means of conception at a different time, a different child would have been born. This is the non-identity problem and it reduces much of the force of so-called ‘child welfare’ arguments against reproductive technologies, including social IVF.  

One of us has argued that there are other reasons, apart from considerations of harm to the child, to have the child with the best prospects of the best life, the Principle of Procreative Beneficence:  

References

60. M. Carlson. Older Enough to Be Your Mother. Time 10 January 1994: 41. Similar concerns were raised in relation to another postmenopausal mother by Dr John Marks, former chair of the British Medical Association Council: A. Wall. Monstrous Mothers: Media Representations of Post-Menopausal Pregnancy. Afterimage 1997; 25: 14: 15. The Ethics Committee of the American Society for Reproductive Medicine has also stated that ‘older women and their partners’ may be ‘unable to meet the needs of a growing child and maintain a long parental relationship’: Ethics Committee of the American Society for Reproductive Medicine. Oocyte Donation to Postmenopausal Women. Fertil Steril 2004; 82. Suppl 1: S251–S255.  


couples (or single reproducers) should select the child, of the possible children they could have, who is expected to have the best life, or at least as good a life as the others based on the relevant, available information.\textsuperscript{65}

But these are impersonal reasons for having a certain child and they are usually taken to have less force that strict, person-affecting considerations of harm to a child. For example, it seems worse to deafen a hearing child, than to select for implantation an embryo you know has a genetic mutation for deafness. Indeed, in such 'selection cases', one of us has argued that even though we may have a moral obligation to have the best child, people should be at liberty to access technology that selects for or creates children with lower prospects of having the best life.\textsuperscript{66}

Also, while it may be the case that we should try to ensure that the children we have enjoy the best prospects of the best lives, it is another question whether we should create a new life, which has a lower than optimal or average prospect of a good life, rather than no child at all.\textsuperscript{67} In other words, it is not at all clear that we have an obligation to have no children if we cannot have the best children. With social IVF, in practice the issue for many women or couples is whether to have IVF later in life or have no child at all.

Encourages Women to be Complacent about Declining Fertility

Some women who freeze their eggs see this as an 'insurance policy'.\textsuperscript{68} Concerns have been raised that widespread availability of egg freezing will give women a false sense of security about their chances of reproducing and consequently discourage them from finding ways to have children at the age when their reproductive capacity is at its peak.\textsuperscript{69} For example, Mark Fritz, chair of the ASRM expert committee that issued a warning this year against social egg freezing, argues that women may get the false impression that storing their eggs \textit{ensures} that they will be able to conceive later in life.\textsuperscript{70}

This, of course, is merely an argument against poor information provision, rather than egg freezing. Simply because women may take precautions against an unwanted outcome does not mean they will rely on these precautions unduly. In fact, such action demonstrates that they are risk averse, and hence may be more likely to be aware of the problems they may face in trying to conceive later. Offering egg freezing for social reasons also creates an opportunity for women who are considering putting off having children to receive good information about the risks of doing so in the context of explaining to them that egg freezing is an imperfect solution to the problem.

This argument also underplays the validity of women’s reasons for postponing childrearing, and assumes that these women could have chosen otherwise without significant detriment.\textsuperscript{71} This view is both factually incorrect and discriminatory. As discussed above in relation to education, employment, psychological readiness and partner choice, many women have good reasons for postponing having a child. In fact, given the problems women know they will face when their fertility declines, the better assumption is that they have made this choice precisely because they have good reasons for putting off the time when they will have children.

Encourages Women to Pay for an Expensive but Ineffective Service

Ten clinics in the UK currently offer egg-freezing services at a cost of around £2,000–£3,000 per cycle for retrieval and storage, plus the subsequent cost of ICSI treatment to fertilize the eggs (at least £1,500).\textsuperscript{72} Promoting egg freezing to extend female fertility may encourage women to spend thousands of pounds on a service that will only marginally increase their chances of conceiving later in life.

It is true that some women will pay for this service and that it will not, in the end, ensure that they conceive, but it is unlikely that women will see this procedure as a cure-all solution to declining fertility. If they do, then requiring fully informed consent to the procedure and responsible practice by clinics should address this problem. Gillian Lockwood, who heads Midland


\textsuperscript{67} We thank one referee for this point. The ethics of bringing new people into existence is highly disputed.

\textsuperscript{68} E. Gold et al. \textit{op. cit.} note 37.


\textsuperscript{71} Laura Purdy has made a similar argument in relation to assisted reproductive techniques generally: L.M. Purdy, \textit{op. cit.} note 28.

\textsuperscript{72} Rates are based on the services offered by Midland Fertility Services.
Fertility Services, has stated, ‘I probably dissuade or turn away more women than I treat on grounds that they have unrealistic expectations or that their chance of success is too low’.  

The fact is that egg freezing will offer some women an opportunity to conceive that they otherwise might not have had. Many women end up childless as a result of postponing childbearing. Some want to plan ahead and try to prevent this outcome. As long as these women are fully informed and able to make rational decisions about their fertility, we should allow them to make their own financial decisions, as we do in virtually every other area of life.  

WHAT SHOULD BE DONE?  

Since 2000, it has been legal in the United Kingdom to use stored frozen eggs for infertility treatment. The regulatory body in the UK, the Human Fertilization and Embryology Authority (HFEA), lifted the prior ban after commissioning an independent report on the technique, which concluded that the service should be made available. At the time the ban was lifted, IVF using frozen eggs had a success rate of 1–10% compared to 17% with IVF using fresh eggs. The HFEA considered that the technique had risks, most particularly the low rate of success, but that the results at that point were encouraging.  

In the nearly eight years since this ban was lifted and egg freezing given tentative support, the science has moved on significantly. IVF success rates using eggs preserved with new vitrification techniques now rival those of normal IVF, sweeping away one of the major objections to widespread use and promotion of the technique. Almost all women who choose to have children later in life no longer naturally have the eggs they need to have children. At present, some of these women resort to IVF with donor eggs, and must accept the problems that go with this strategy for trying to overcome infertility.  

It is clear that women will continue to postpone childbearing and seek infertility treatments when they do so. Population data demonstrate that the trend toward delayed childbearing is increasing. Perhaps, we can eventually address the reasons for this trend, for example by developing employment models that accommodate female, as well as male, needs. But this may require that women who wish to have a career and children are pursuing careers and promoting the case for change. The above trend is also due to the rising cost of living, which leads some couples to believe that they should postpone childbearing until they have more senior positions and hence are more affluent. It is not the purpose of this paper to suggest ways that we might combat the problem of delayed childbearing, but we do argue that egg freezing should be an option for women who wish to have children later in life and who want to increase the chances of this happening.  

It is questionable whether we can, or even should, address some of the other causes of the trend to later childbearing. One such cause is changing attitudes towards relationships and marriage. People now marry later, and are more likely to live together or have a number of relationships before committing to a relationship in which they have children with someone else. This identifiable tendency is not obviously problematic, and it is not possible to demonstrate that at an individual level it is problematic. Where egg freezing could offset the problem associated with this particular trend of a difficulty in conceiving, there is good reason to allow the technology to be used.  

For the above reasons, there is a clear case for aiding women who postpone childbearing by offering them an option that will assist them in this project, one that can only increase their chances of success and that has few, if any, drawbacks that we cannot adequately address. We should offer egg freezing to these women, so long as we do it with appropriate information provision and non-directive counselling.  

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74 For example, we do not prevent competent people from gambling or making bad investments, for it is not the role of the law or government to do so. As Lori Andrews points out, to do so would conflict ‘with the general legal policy allowing competent individuals to engage in potentially risky behavior so long as they have given their voluntary, informed consent’. L. Andrews. Surrogate Motherhood: The Challenge for Feminists. J Law Med Ethics 1988, 16, 72: 74.  

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