

The Brave New World of Reproductive Technologies

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1. What We Can Already Do or Soon Will Do

We are witnesses to a reproductive revolution potentially more significant than industrialization, nuclear power or the computer: for it will change the way we come to be and even what we come to be. Already *in vitro* fertilization (IVF), the laboratory production of test-tube babies, has become fairly commonplace, with around 100,000 test-tube babies born since 1978. And a whole range of other things are already possible or will be in the near future in the realm of the new reproductive technologies. It may seem that talk of large-scale use of reproductive technologies is rather hypothetical for a country like the Philippines. Yet there are hundreds of IVF programmes throughout the world, many of them in the poorest countries in the Asia-Pacific region; artificial insemination (AI) is already commonly taking place in Manila; international pharmaceutical and medical research companies increasingly target Third World countries as sites for their experimental trial and distribution programmes; wealthy Filipinos are among those seeking IVF overseas in places such as Australia; and there are moves towards international regulation in this area. For these reasons, and others, people of good will in all countries must reflect on these issues: we cannot afford to think of these as peculiarly Western problems.

Disintegrating parenthood

A crucial aspect of this reproductive revolution has been the ability to separate two aspects of biological parenting—genetic (blood)

parenting and gestational (carrier) parenting—and to separate both or either of these from social (nurture) parenting. I bracket out of consideration here and in the rest of my paper the range of assistance in conception which does not require disintegration of this kind: sex education; fertility awareness and planning with a view to maximizing conception; microsurgery and other treatment aimed at correcting defects in the reproductive organs; fertility drugs; and LTOT (lower ovum tubal transfer—the relocation of a ape ovum from the ovary to the other side of a fallopian tube blockage so that fertilization can occur in the normal way).

Various degrees of technological intervention are now possible: from the simpler procedures such as Artificial Insemination, to the more complex but increasingly routine IVF and GEFT procedures, to more sophisticated forms of genetic screening, therapy and engineering. All these things can be done either for altruistic or commercial reasons: recently a Virginia clinic, which prides itself on being ‘the McDonalds of medicine’, has advertised overseas offering rich women donor eggs and the rest of the IVF kit and caboodle for a mere \$US20-30,000 plus expenses; in this programme the donors get about half the fee for their eggs, the technologists and entrepreneurs get the rest. And all these procedures can be either voluntary or involuntary or somewhere in-between, as where, for instance, women who might otherwise have to queue a very long time or pay a considerable amount for some medical treatment unconnected with egg donation are given preferential healthcare if they agree to donate eggs. By separating genetic parenting from gestational and social parenting various new family relationships also become possible or at least easier: single individuals and homosexual couples, for instance, can now commission others to provide whatever they cannot, with a view to their receiving a child to bring up.

A crucial aspect of this revolution, as I have said, is the separation or disintegration of parenting into several discrete acts or processes, each possibly involving different parties. Of course this has always occurred through adoption, though adoption is rarely planned from the outset. Now, from the outset, we can arrange matters so that one or more of the genetic parents are different from the woman who will carry the child or the couple who will bring up the child. These people may or may not be related to each other, may or may not know each other, and the children may or may not be told of the arrangement which they are old enough to understand. These people may act out of

altruistic or more selfish motives, for free or for a fee. It is likely that in the future the poor both within affluent societies and in the third world will be exploited for these programmes in various ways, as indeed they already are for certain kinds of blood and kidney 'donor' programmes, pharmaceutical testing and so forth.

Let us focus for now on the genetic of blood parents. The new technologies allow us to introduce various third party donors: an ovum donor, a sperm donor, embryo donors. The donors of these sperm, eggs and/or embryos can be alive or dead, as where sperm or eggs are kept frozen from some now-deceased donor, or where eggs are extracted from an aborted foetus, or where eggs or sperm are taken from a recently deceased adult or child. With the advent of cloning or parthenogenesis, only one genetic parent will be necessary; with chimeras (combination embryos) it will be possible for one child to have several genetic parents.

Designer babies

'Designer babies' are already with us. Until recently the only way to affect the genetic make-up of your child was to choose your partner carefully. Nowadays we can choose someone just for breeding purposes: California, for instance, boasts a Nobel prize winners' sperm bank where a woman can buy genius sperm in the hope of producing a genius child. (There is no evidence it works.) All that is a fairly ham-fisted way of designing babies.

We have a more effective way: we can test the babies we already have, either while they are in the laboratory petri dish or in the womb, to see if they have the characteristics we want or don't want. If they have the characteristics we want, we can transfer them from test-tube to womb or leave them in the womb to go to term. If they don't we can flush them down the sink or abort them. In many countries this is already common for certain handicaps which are regarded as so horrible that the children concerned are better off dead. The list of those handicaps is growing, partly as a result of increased technical capacity to identify more and more of them, more and more accurately; and partly as a result of the line moving as to which handicaps are incompatible with worthwhile existence. To some degree already, and will increasingly in the near future, parents will be able to predict many of the physical and psychological characteristics of their children and decide whether to have them implanted or aborted.

Both of these techniques, though likely to be increasingly common, may seem rather primitive to the next generation: for the next generation of designer babies will be designed directly, by introducing genes for preferred characteristics, such as eye shape and colour, intelligence and the like.

There is also the possibility of animal-human hybrids. Cross-species fertilization and introduction of parts of genomes is already common in animals as in the case of the super-rat and the super-pig. Human enzymes and other products are already being grown in animals such as mice with a view to producing products such as retinal glues. And some animal-human crossing also occurs, as when human sperm are commonly tested for their fertility by crossing them with hamsters or rats (the product is only permitted to go to one or two cell divisions).

All these technologies also open up new sources for laboratory embryos and fetal tissues, which might be used for experimentation, for spare parts, or for the production of a whole range of products from medicines to cosmetics. There is already a significant market for live fetal pancreatic, brain and skin tissue. The Hana Institute of Alameda, California, which specializes in fetal tissue research and commerce, claims in its current prospectus that it foresees a market of \$3billion in the US and \$7b worldwide per year and that this will grow.

Designer parents

So far I have reviewed only the ways in which we can now exploit a disintegration of genetic parenting from the rest of parenting. But we can now also separate out the gestational parenting, i.e. who carries the child. A womb donor or surrogate mother is a woman who agrees to carry a child to term for someone else. She may or may not be related to the other parties involved. She might even be near-dead, as in the proposal to use permanently comatose women as 'incubators'. Or she might be a post-menopausal woman: the new technologies have allowed women in their late fifties and early sixties to carry children, but they might well soon allow women to carry babies and give birth well into their seventies and eighties...

Not of course that the carrier has to be a woman at all. It could be a man, and the technology for that would not be very complex, even if it is rather oversimplified in Arnold Schwarzeneger's latest film.

Animal wombs might be used in the future to carry human children - we've already tried using a sheep's womb in Australia. Or we might even use machines ('ectogenesis'). But for now we are stuck with women, alive or near dead, young or old.

2. Attractive Technologies

Some at least of these reproductive technologies are immediately attractive: after all they give people babies. And not just any people: suffering, infertile people. I think most of us would have great sympathy for such a couple as they seek to overcome, or come to terms with, the frustration of their very natural, reasonable and generous hope of completing their marriage by giving life and love to a new human person. We might also admire their courage and generosity as they endure all sorts of torments in their efforts to achieve that end, and as they swim against the increasingly anti-life, anti-child, anti-family tide which is sweeping our world at the moment. For this reason, among others, we should never judge those involved: they are often so desperate or so full of good will. The fact is we now have an infertility epidemic throughout much of the world. For many people these technologies offer the last hope.

Not are the bio-technologists all Dr Frankensteins, driven by curiosity and a desire for professional kudos. Some of them, at least, act out of a very real compassion for the suffering infertile who are their patients. Others hope that through these programmes we will learn a great deal about human reproduction, and possibly gain thereby cures of various kinds or at least some very useful drugs and procedures. And of course there are profits to be made: an Australian company which has set up a chain of IVF clinics in the US boasts annual revenues of \$5million from each clinic and it is building dozens of them. I do not think I need to spend much time presenting the case *FOR* these procedures, for it is fairly self-evident and gets plenty of air-tune and print-space in the worldwide popular media.

Of course not all these technologies have immediate audience appeal. A recent Scottish proposal to take eggs from aborted baby girls and use them to make babies for would-be mothers was ruled out, at least for the time being, following public uproar. Similarly, a successful human cloning project in the US was abandoned in response to public and professional unease. When bizarre proposals first hit the airwaves,

there is usually more than a little disquiet-recently dubbed the 'yuk factor' -but this does not usually last for long and rarely holds up the real research agenda. Regarding the use of eggs from aborted fetuses Dr Peteir Brhisden of the Boume Hall Clinic in Cambridge commented: "If the general public feels ready for it, then I believe we should go ahead. If not, then we will have to delay. I believe it will become acceptable, certainly within the next five years."

But unlike embryo experimentation and foetal egg donation, most of the reproductive technologies do not require five years to become acceptable: they are immediately attractive to almost everybody. It is not surprising that most of these developments have been met with uncritical acclaim by the healthcare professions, the media, governments and the general population, at least in the West. I too was at first attracted by these technologies, especially 'IVF in the simple case'; and I wished the objections would be answered, the problems solved, that the difficulties would go away. The publication of a number of important studies of the ethics of reproductive technologies, including one by the Catholic Church, my researches for my book on IVF including interviews with IVF doctors and couples, and a great deal of reading in those most inaccessible of places, the medical, legal and philosophical journals, led me to change my mind.

Why, one might wonder, would such a pro-life, pro-baby, pro-family church as the Catholic Church be opposed to these technologies? It seems to me that from the Catholic perspective, as expressed by the Vatican in *Donum Vitae*, the "Instruction on Respect for Human Life in its Origin and on the Dignity of Procreation", there are basically two problems, and only two problems, with these technologies: that they are unchaste and that they are unjust. The instruction gives most attention to the argument from chastity, and you can read it there; so I will focus here on the question of justice.

But it is perhaps worth noting in passing that for most modern people, with their impoverished conceptions of the virtue of chastity, it will seem mysterious that chastity could be an objection to AI and IVF. What on earth has chastity got to do with technological assistance in baby-making? Building on the teaching of Pius XII, Paul VI and a long tradition before them that we ought not to disintegrate our sexual-procreative faculty, not disintegrate the potential for love-making from the potential for life-making, the Congregation for the Doctrine of the Faith declared that children are only properly generated within the

loving sexual embrace of their parents, "the marital act". The argument is a complex and interesting one, drawing as it does both on natural law reasoning regarding procreative causation and the more recent personalist concern for "the language of the body" and "spousal and parental meanings." It argues powerfully that parents should see themselves as cooperators or co-creators with God and recipients of a divine gift or trust, and not merely commissioners or recipients of artificial baby-making by others. I do not have the space further to explore all that here, but it is crucial that would-be parents, practitioners and communities which engage in AI consider it very carefully.

Many Christians and others see readily enough that there are problems with the various reproductive technologies. Even if they differ over how seriously wrong it is, many see it these procedures as unchaste, though they probably use instead the language of 'unnaturalness', 'yuk' or whatever. They will also readily agree that destructive embryo experimentation, aborting children because they do not have the characteristics we want, and so on, are unjust because they kill the innocent. But they still often ask: what's wrong with IVF in the simple case?

3. The IVF Protocol

'IVF in simple case' means this: a married couple have tried everything else in order to have a child; eggs and sperm are taken from them as safely as possible and in the minimum quantities necessary; only as many embryos are created as are intended for placing into the woman's womb, with the genuine hope that these embryos will implant and come to birth; no abortion is planned, even if things go wrong along the way; and there are no morally complicating third parties involved, except of course the technologists.

Which is all very well. But let's now consider IVF as it's actually practised. First, the couple may or may not have tried everything else. Increasingly today it is tried *before* many other therapies such as NFP, microsurgery or LTOT. So the couple join the programme. The woman is given a fertility drug to ensure she produces several nearly ripe eggs at once and these are collected; the man is sent at the appropriate time to a cubicle to produce some sperm by masturbation; and then several embryos are created at once in the laboratory. (In GIFT—gamete intra fallopian-tube transfer—the gametes are placed into the womb with a

view to the conception of several embryos there). Several, notice. More by far are created than children are wanted. In most IVF programmes the healthiest looking ones are chosen for transfer to the woman's womb; many others are discarded. Some are frozen with a view to using them later; but freeze-thawing kills many. Some are used for experimentation, which is always lethal.

The lucky ones are transferred to the womb. But multiple transfer greatly increases the risk of miscarriage and premature birth, so they might well not survive. The pregnancy is carefully monitored so that if too many embryos have implanted and survived into the second trimester, 'selective termination' (i.e. abortion) of one or more of the children might be performed. Genetic screening and abortion for handicap is also very much on the cards. But the luckiest ones come to term and survive the high neonatal death-rate among IVF babies, and go on to feature on the covers of women's magazines with their proud parents.

But most are not so lucky. Most die along the way. Not of course that all these deaths are intended; some of them may even be genuinely regretted. But these deaths are deliberately risked and this is not without moral significance. The fact of the matter is: many hundreds of thousands of human beings have died so far in an effort to bring some to birth through IVF. I recognize that this will not matter as much to a person who does not regard the embryo as a human being in the moral sense. My own position, for what it is worth, is that the human embryo is clearly a member of our species "*homo sapiens*", the human race, and organized for development towards birth and human adulthood, and is also a member of our moral community of persons, deserving of such respect as to preclude non-therapeutic uses of and experiments upon it. I have argued for this at length elsewhere. But some people will no doubt insist, with a most unscientific dogmatism, that embryos are not fully human. IVF scientists readily admit that they do not treat IVF embryos with the respect due a human person: one scientist, who leads one of the biggest IVF programmes in the world, told me that he did not even regard them as living creatures. But whatever their view of the status of the human embryo, most people would, I suspect, be troubled by the enormous, indeed profligate, loss of early human life associated with these programmes—if they knew.

IVF, as it's actually practised, even in Catholic hospitals in some parts of the world, by Catholic doctors, for Catholic couples, is driven by

an ethic of success at all costs; and the cost of higher 'take-home baby rates' is more embryos 'wasted'. People want a baby and they do not want to inquire too closely into what deadly practices might be required. And deadly practices *are* required.

4. Lethal Experimentation

But, you might say: it *is* possible to imagine a more pro-life IVF protocol. Maybe... though I doubt that in the real world of contemporary medical science it would get very far. Modern healthcare is profoundly influenced by the technological imperative, the notion that if a thing can be done it should be. All scientific advances, however attained, and their applications, are presumed to be self-justifying. Add to this the contemporary fatalism about scientific progress and any opposition can be dismissed as 'Luddite', 'backward', or worst of all, 'religious'.

Hence the usual media response to popular discomfort is this: science has outpaced our ability to absorb it; but absorb it we must and will. Medicine is also a deeply pragmatic activity; the "results are all that count" mentality dominates. If higher success rates and new discoveries can only be achieved at a high cost in terms of human life, risk to women and to society, so be it; no scientist worth his Nobel prize willingly adopts a deliberately inefficient and less effective practice.

But let us imagine the more 'pro-life' IVF programme. We still have to face the question of how we get this technology. It does not drop from heaven. Our imaginary pro-life IVF programme gets its science from the much more lethal normal programmes across the road or across the sea.

Every embryo used for experimental purposes is destroyed; that is the law in most countries and professional ethics everywhere. Without directly killing or immorally risking the deaths of a great many human individuals in the research and development stage, and in the continuing experimentation to improve this technology, IVF could never have happened, or at least never so quickly or successfully. On that matter, at least, the would-be embryo experimenters have a point. And many more embryos are likely to be killed as scientists throughout the world attempt more and more weird and wonderful things. The IVF couple, even the pro-life, IVF-in-the-simple-case couple, benefit from this homicidal research. So do their doctors.

We do, of course, sometimes apply the results of immoral research: much of what we know about hypothermia, for instance, comes to us courtesy of some monstrous Nazi experiments, but the information is now used legitimately. Here we enter the complex moral maze of cooperation or complicity in evil, and I will not attempt to set out the principles here. Suffice it to say that it is very much a matter of what one chooses, what one makes one's own purposes, and thus what one makes oneself. People can and often do cooperate in evils they do not approve of themselves; sometimes that is unavoidable; sometimes it is avoidable but permissible; and sometimes it is avoidable and immoral. Even where one's co-operation is unintentional, one must consider seriously the ill-effects of so cooperating.

Perhaps we might consider an analogy. Patients now benefit from Nazi studies of hypothermia, though they probably would not want to be reminded of just how the medical profession has come by this information. We might be comfortable enough with people benefiting from that knowledge now, when those who apply the knowledge or benefit from it are all at more than arm's length from the experiments. But what would we have thought if at the very time when these monstrous lethal experiments were being carried out upon Jews and others, the same doctors were using this information to help good German patients who, while they might not have approved of the means of gathering the information, were all too pleased to benefit immediately from the latest discoveries? And what if their doing so helped to keep the whole dastardly experimental programme going?

Perhaps IVF-in-the-simple-case, pro-fife, pro-baby IVF, is starting to look a little more problematical.

5. A By-Product of the Abortion Revolution?

When Aldous Huxley wrote *This Brave New World* babies in bottles were the merest science fiction, a dream impossibly far in the future. Before he died he expressed confidence that "technically and ideologically we are still a long way from bottled babies." Well the technology which made it all possible marched forward much more quickly than he imagined possible. So did the ideology.

I would argue that without the abortion spiral of the late '60s and early '70s throughout the Western world, and its brutalizing effect on

social attitudes to early human life, this technology could never have happened. A generation ago people would have recalled in horror at the very notion of using and abusing early human lives in the ways we now do almost as a matter of routine. And what softened up the public consciousness, what laid the carpet along which the bio-technologists could pass with their test-tubes, was the abortion spiral. IVF and related technologies, however pro-baby they might look on the face of it, are in this important respect a by-product of the abortion revolution.

6. Part of the Slide

The ideological revolution that makes IVF possible does not start or finish with the abortion revolution. Absolutely crucial is the post World War Two advent of the consumer society. The consumer mentality has profoundly affected the way children are viewed in modern societies. The me generation want and have children only at the 'appropriate' time, if at all, in limited numbers, carefully spaced, genetically perfect and, in the future, made to order. Children become one more consumer item to add to the satisfaction of their consumer parents. The rhetoric of the new reproductive technologies is replete with such language, talk of ownership, quality control, demand and supply, consumer choice, take home baby rates, patents, etc. The focus here is very much on needs or desires of the market (the would-be parents), and of the suppliers (the would-be experimenters), rather than on the children affected and the common good.

With these distortions of values, of ideologies, comes a profound distortion of relationships: young human beings are depersonalized, reduced to the status of commodities, manufactured and supplied (or experimented upon or quality controlled and destroyed) on demand. People are viewed as products. This leaves the test-tube baby in a position of radical inequality, profound subordination, *vis-a-vis* the patents and technologists who decide whether he or she will live or die. This kind of power is dangerous enough for anyone to have over another; but it is all the more dangerous in a consumer society where the market rules.

Why are IVF scientists so fascinated with human embryos, especially when there are often more efficient and effective ways of dealing with infertility? The psychology and sociology of scientists is complex and I will not explore it here; let me attempt instead a little

economics. Biological science is likely to produce the biggest profits of any of the sciences in the next twenty years. Artificial baby-making is already big business, especially in America; it will be even bigger business in the future. But the biggest business is not in artificial baby-making but in artificial baby-breaking. A principal driving force in reproductive technology is, ironically, the twentieth century dream of the perfect contraceptive. And for 'contraceptive' we should read 'contragestive'; RU486 is only the first on the scene of a whole range of do-it-yourself abortifacients which are likely to come onto the market in the next generation. A principal source of our information about how to stop embryos implanting in the womb and how to get wombs to reject them will be supposedly pro-baby IVF research.

We are witnessing in our day the production of a race of laboratory humans, second class and disposable. And in these new reproductive technologies we are being swept along by a dynamic of domination, exploitation and violence, however pro-baby our sympathies might be. We are being swept along by the relentless assault upon human life and dignity characteristic of our violent times and being incorporated into structures and practices which are deeply corrupting of our respect for human life. The new reproductive technologies have become an integral part of that.

7. Damage To Women

IVF is not in fact a very successful technology. The best programmes report success rates of around 15% and this rate seems to have plateaued. Women can and do keep going back for cycle after cycle, but for most after a long series of highly intrusive procedures and a roller-coaster of emotions there will be no child at the end.

In the meantime, however, there are a range of serious risks. The high doses of fertility drugs come with a range of side-effects; patients have died after egg collection; there is an increased risk of ovarian and breast cancer; there is a dramatically increased chance of miscarriage, ectopic pregnancy, multiple pregnancy, and premature labour; and about half these women will have caesarean sections. We have not even begun to study the effects of things like post-menopausal pregnancies on women's bodies. But a powerful feminist case against these technologies is being pleaded throughout the world at the moment: that women's bodies are being used as living laboratories for prestigious but

dangerous research largely by men for the benefit of men, men who are content to further their own interests at the risk of replicating the tragedies of Thalidomide, the coil, breast implants and the like.

Evidence of serious psychological ill-effects of these procedures is now emerging, especially for women whom these new bio-technologies fail. In the next generation we are likely to have a whole cohort of women suffering post-IVF trauma just as in our generation we have had so many suffering from post-abortion trauma. And yet again we can expect denial all round.

8. Harm To Children

For children, too, IVF is fraught with danger from the beginning: death before birth is the most likely outcome. Those who are lucky enough to approach birth are much more likely to be prematurely born, with very low birth-weight (and all the attendant risks), or with major handicaps, than are their naturally conceived cousins in the same hospital nursery. The risks associated with the next generation of reproductive technologies, such as genetic engineering, for those children are incalculable and some of them will be hereditary.

We know precious little, as yet, about the psychological effects of these procedures on the children, but psychologists predict identity problems and other traumas even with simple GIFT or IVF. It is hard to imagine how the children of the even more complex procedures will be affected. What kind of 'genealogical bewilderment syndrome' will be suffered by the child of multiple parents, or of an aborted fetus' egg, or gestated in a near-dead woman, man, animal or machine? There are other justice issues to consider: the Vatican declaration, for instance, suggested that these technologies are an infringement of a child's rights. The interests of the children seem to get no look-in in these procedures, reflecting yet again how babies are treated not as our moral equals but more as consumer items.

9. Social Justice

An IVF baby costs a great deal of money. Ultimately it would cost billions of dollars in each country to provide the new reproductive technologies for all who might benefit. This is, after all, a technology which creates its own endless market.

Meanwhile research into the causes, and efforts to prevent, the infertility epidemic are severely under-financed. Almost nothing is being done to get to the cause of the problem which IVF seeks to address only by relieving a symptom. The World Health Organization estimates that for the cost of one IVF baby a hundred couples could be prevented from becoming infertile in the first place. And at the same time healthcare systems are terribly over-stretched: many obviously more important procedures are under-resourced or simply unavailable in many countries. IVF and related technologies, I submit, amount to a serious distortion of medical research priorities and of resource allocation and thus present us with a major social justice issue -all the more obviously so in poorer countries.

There are a number of other social issues to be considered which I can only flag here. These practices are already having a significant impact on medical ethics, in particular the trend towards a market-driven, 'service for a fee' style of medicine; they are contributing to the commercialization of reproduction and the continuing erosion of societal respect for human life, human procreativity, and the institution of the family; and they may well have significant class and demographic implications in the future. But in an environment in which individual consumer choice and individual research enthusiasm are all, such 'communitarian' concerns may not get much of a look in.

10. Conclusion

My overall conclusion, then. For all its supposed and very real benefits for individual patients and the medical profession, and for all our best efforts to imagine pro-life, pro-baby uses for these technologies, the sad fact is that IVF and related technologies are lethal. Were this not enough they also harm women, children and society. They are a grave social injustice. Christians and other people of good will have yet another challenge for the century ahead: not just to protect those in the womb and after they leave the womb, but to fight for the rights of people even before they are put into the womb: our tiniest neighbours, the test-tube babies.

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