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Anonymity in Gamete Donation

This article does not condone the use of donated gametes, anonymous or not, nor the practice of IVF. Nevertheless, given the fact that couples have legal recourse to the use of donated gametes in Australia, and the practice gives rise to offspring, an ethical evaluation is both necessary and timely. Moral concerns regarding IVF in general have been dealt with in a previous article.[1]

Introduction

Artificial insemination by donor was first introduced into the clinic during the 1930s. Whether donor-conceived (DC) children had a right to know information about their antecedents, however, was not considered an issue. Since its earliest days, confidentiality of donors was assured and recipients were strongly advised not to tell children about their origins. An excerpt from an article by Bloom in 1957 vividly encapsulates this attitude:

'For the child's sake particularly I prefer that absolutely nobody but the parents themselves should know of the insemination therapy. My last advice to the parents is that under no circumstances should they, or need they, ever tell the child the method of conception-in fact they should forget about it themselves.'[2]

This is primarily because the focus of infertility treatments has undoubtedly been infertile adults.[3] To that end, clinicians in assisted reproductive technology (ART) have tended to favour donor anonymity (DA) and the privacy (perhaps secrecy's more apt) of the donor and recipients alike. Although such views are still espoused, there has been a gradual change amongst clinicians towards greater openness. Some now even advise it.[4] Despite these changes, it is not routinely seen as part of the clinicians' responsibility to act as adviser: they see their role as solving the infertility problem.[5]

Is it ethical to continue the practice of DA when it can cause harm to those conceived in this way for a lifetime? Two particularly serious, but related consequences which arise from the practice of DA will be scrutinised. On the one hand, deliberate secrecy about the circumstances of conception can cause serious ethical issues for the family involved. And on the other, a lack of vital information about the DC child's biological origins has obvious downstream psychological and health implications, especially in the era of genomic medicine.

Secrecy and Deception

Studies have shown what is intuitive to us all: that good, stable relationships function best when based on openness and honesty.[6] This engenders the trust that is essential to all good human relations. As a society we are committed to this principle:
'This goes beyond medical science into the heart of a human being's story. Ancestry is part of a human being's story and we should not be afraid to acknowledge it.'[7]

It follows that failing to tell the truth, particularly about one's origins, can and does damage relationships and individuals. It is perhaps surprising that so few recipients (the legal parents) of donated gametes tell children of their origins. In Australia alone, a recent survey showed only 5% of recipients actually told their children this fact.[8] Al-

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though this may be changing slowly, there are currently no accurate, comprehensive figures showing how many parents tell children about their origins. Of further concern, once parents have shown the DC child, to all intents and purposes, as a child of the partnership, they maintain the *status quo*. It has proven hard to turn back after the deception has been established.[9]

Although it is debatable whether secrecy has a negative effect on DC children at an early age, this certainly changes as they grow up.[10] While it is legitimate to argue that individuals (in this instance the parents) have a right to privacy about personal matters, such as infertility, in the long-term it is the offspring who have to bear the burden of their parents' infertility and their secrecy about the use of anonymous donor gametes. 'It is one thing to adopt a child whose natural parents are unable to discharge their responsibilities-but quite another to engineer anonymity of a child's genetic origins by the use of donor gametes. Parenthood is important, but it should not be achieved to the detriment of children'[11] conceived in this fashion.

Even if the deception is confessed later in the individual's life, there is a risk of a profound identity crisis for the child, who discovers that they are not who they thought they were. Moreover, 'if the deception is exposed during a family crisis, or accidentally by a third party, serious damage can occur to the relationship which exists between the parents and the child.' [12]

Some parents find it harder to expose their child to the uncertainties of knowing that they were conceived by the use of donor gametes, than to pretend they were conceived naturally. Nevertheless, parents who have disclosed a child's origins remain adamant that it was the right decision. Repeatedly one hears: "I couldn't have lied to them." Nevertheless, it is "not an easy option", nor is the issue addressed by the single disclosure. Even if they return to the IVF clinic, little information is available to them, and not specific at that.[13]

The ethical imperative to tell the truth, however, should not apply to parents alone. The state, through its legislation and regulation of ART, would do well to accept ethical responsibility for the welfare of the child in this respect. The state's complicity in the deception of donor offspring may take the form of regulations, which condones secrecy, or at the very least, makes it harder for parents to tell the truth than to maintain the deception. Victoria is still the only state in Australia that has passed legislation mandating DC-individuals the right to gain identifying information about the donor. But only those conceived in Victoria after January 1998 [commencement of this part of the Infertility Treatment Act (ITA)] will be able to know the identity of the donor when they reach the age of 18. Unfortunately, every other person now being conceived or already born in Australia through donor conception still has no right to identifying information about the donor.[14]

Crisis of Self-identity and loss of Connectedness

Far and away the major problem arising from DA is that half of the genetic and familial history of the child remains unknown. This can have serious consequences throughout the development of the child, affecting both their physiological and psychological health, and impacts well into adulthood.

It has not been possible to perform any comprehensive study of the effects of DA because of the secrecy surrounding the practice since its inception. However, from the small studies that have been published, the emerging trend is clear.[15] 'All DC individuals reported feeling a loss of self identity, compounded with resentment and anger at the deliberate deception.'[16] Without exception all wished they had been told sooner. A major theme emerging from DC individuals' responses was that no one had thought them important enough to keep detailed records about their donor and worse, 'the system was intentionally set up to deceive them and to make it impossible for them to ever know. Even their birth certificate is a lie.'[17] Whatever their individual circumstances, all clearly stated that they had fallen victim to a major injustice and wanted the matter rectified. A 42yr old woman commented: "we have the right to know our identity and to grow up in truth."[18]

Being gregarious by nature, the network of familial relationships is central to our personal identity. In other words, our father, mother, siblings and relatives are all part of who we are, and these relationships are not chosen at will but determined by our ancestry – 'we are aware of this and appreciate the importance of family relationships and bonding.'[19] That half of this heritage is denied to DC individuals, through no fault of their own, seems grossly unfair. They are also discriminated against in the increasingly important field of genetic medicine and genomic health, such as in the diagnosis of preventable genetic diseases. DC individuals will only ever know half of their genetic origins, and half of their respective familial relationships are denied access to them.

Besides being unethical, such a practice may well breach international conventions and state laws. In 1995, Victoria passed the ITA, and Clause 5 states that the welfare of the child is 'paramount'. The meaning of this statement has proven to be highly controversial. Does it simply mean ART clinicians should do all in their power to ensure the process of fertilisation and the resulting embryo is protected from harm prior to uterine transfer? Or should the import be more comprehensive, mirroring Adoption legislation, covering the long-term welfare of the developing individual throughout their formative years?

Contemporary society values transparency and fair ac-

cess to relevant records. The Australian Government has accepted the United Nations Declaration of Human Rights and is a signatory to the UN Convention on the Rights of the Child.[20] In respect to DA, the two most pertinent articles are:

> **Article 7**
> 1. The child shall be registered immediately after birth and shall have the right from birth to a name, the right to acquire a nationality and, as far as possible, the right to know and be cared for by his or her parents.
>
> **Article 8**
> 1. States Parties undertake to respect the right of the child to preserve his or her identity, including nationality, name and family relations as recognized by law without unlawful interference.
> 2. Where a child is illegally deprived of some or all of the elements of his or her identity, States Parties shall provide appropriate assistance and protection, with a view to speedily re-establishing his or her identity.[21]

Donor offspring do not consider that their voice has been heard, their perspective given any consideration or that they have been treated fairly. It is questionable whether the governments of Australia have provided adequate assistance or protection for DC individuals. Anonymous donation of gametes might well be seen as flying in the face of those conventions to which the Commonwealth is a signatory.

Conclusion

Individuals conceived in this fashion have rights and needs which have to be recognised---not denied or ignored. Reproductive services should take on board the perspective of those conceived through ART programs, both as a developing child and as an autonomous adult. This requires a shift in both thinking and priorities for donors, potential parents and clinicians. Although the availability of sperm donors would be affected by changes, it is evident that significant numbers of volunteers are aware of, and understand, issues that arise from donated gametes.[22]

Furthermore, practice from other countries, such as Sweden, New Zealand and elsewhere, shows change is possible. In Sweden, DC individuals have the right to access donor information from the age of 14 years. In the Netherlands, DC individuals, after reaching 16 years of age, may request identifying information about the donor and it will be provided if the donor agrees. If the donor does not agree, the DC individual may still be given the information if it is thought that withholding it may cause psychological damage.[23]

Improvements, however, require that the obligations of donation be fully explored with potential donors---that the children conceived receive information about their biological parents and that it is not just about helping infertile partnerships achieve parenthood. Donors have been the silent partners in the process of creating donor families and as a result many assumptions have been made. The over-riding ethical premise is that priority should always be given to the lifelong well-being of children.[24]

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Michael Herbert

Alert or Alarm – Adverse Events in Health Care

In Australia, iatrogenic injury (defined as unintended or unnecessary harm or suffering arising from any aspect of health care management) may be due to preventable human error and health care management rather than disease processes. Adverse events are costly in economic and human terms. Averting adverse events is a challenge.

There has been a general reluctance to openly acknowledge and record system failures and human errors when patients have been harmed. Being a patient in an acute care hospital in Australia carries about a 40 fold greater risk of dying from the care process than from being in traffic, and a 400-fold greater risk than working in the chemical industry. At least 10% of admissions are associated with a potentially preventable adverse event. The direct medical costs of these events is estimated to exceed $2 billion per year.[1]

Adverse Events - international and local

Adverse events and iatrogenic injury are a concern in Australia and overseas. In Canada, one in thirteen people experience an adverse event while in hospital.[2] In America medical errors are in the top eight leading causes of death.[3] Half of the estimated 12% adverse occurrence rate in the United Kingdom is judged preventable with ordinary standards of care.[4] In Australia 18,000 deaths a year are attributable to adverse events with about 51% deemed highly preventable. The Quality in Australian Health Care Study (QAHCS) which reviewed 14,000 admissions to 28 hospitals in NSW and SA in 1992, generated disturbing statistics about the safety of patients in hospitals. Errors of omission were almost twice as common as errors of commission. The results extrapolated to the Australian hospital system as a whole in 1992, translated into an annual estimate of 470,000 adverse events or 3.3 million bed days and 7.1 additional days in hospital, costing approximately $1 billion.[5]

Modern health care is even more complex than it was in 1992. This is compounded by staff shortages, lack of appropriate training and supervision of staff, and changes in health care governance. Four years after the initial research, the QAHCS researchers did further analysis of the data and found human error to be a frequent cause of adverse events. In particular, complications or failure in the technical performance of an indicated procedure or operation, the failure to synthesise, decide and/or act on available information, the failure to request or arrange an investigation, procedure or consultation, and a lack of care and attention or failure to attend the patient.[6]

Sentinel Event Monitoring

Adverse events occur relatively frequently, are not always preventable, and do not always cause harm. When death or serious harm to a patient does occur, this may be deemed a sentinel event. Examples of sentinel events are surgery to the wrong patient or wrong limb, complications of treatment, infection control breaches and hospital process issues.[7] The States are encouraged to monitor sentinel events in public hospitals. The Victorian Sentinel Event Program, is a clinical risk program which identifies events which are relatively infrequent, clear-cut and occur independently of a patient's condition. Sentinel events are presumed to commonly reflect hospital system and process deficiencies, which result in unnecessary outcomes for patients. Sentinel events are analysed using 'root cause analysis' (a technique used to study accidents in high risk industries such as aviation). Risk reduction action plans are then formulated, focusing on the organisation of health care and how it can be improved to prevent future sentinel events rather than the assignment of individual blame. [8]

Analysis of Victoria's sentinel events showed a total of 210 contributing factors. Of these, 67 were procedures/ guidelines contributing factors, 37 were human resource-control factors, and 34 were communication issues.[9] There is intent to include 'near misses' in the list of reportable events. In America sentinel event monitoring detects less than 1% of the estimated annual 500,000 adverse events.[10]

A simple health care case scenario

It is not surprising to note the contributing factors. Health care service is anything but simple. Health care is incredibly segmented with lots of different professionals all contributing bits and pieces of their expertise. Consider, for example, the following simple case scenario.

Someone has an accident at work and is transported to the emergency department of a general suburban hospital by the ambulance service. The injured person is now considered a patient. Once there, the patient is briefly examined by the triage nurse and taken to a waiting bay. Over the next few hours the patient is cared for by several nurses and seen by junior and senior medical and surgical doctors. X-rays and blood tests are done. Surgery is needed to correct the injury. The patient is fasted for the procedure. Extensive monitoring and preparation of the patient occurs. Documentation is detailed. There is discussion with the patient and between various health

care professionals. After receiving pain medication and pre-operative care the patient undergoes an invasive procedure in the operating theatre attended by nurses, anaesthetists, theatre technicians and surgeons. Following the procedure, and whilst barely awake, the patient is transferred to a short-stay ward. Now the patient has a surgical wound, an intravenous line, monitoring equipment attached, and is disorientated due to anaesthetic and analgesic medication. Over the next two hours the patient is visited by a stream of people including a wound care nurse, a ward clerk, a surgical intern, a physiotherapist, a food service attendant and a pharmacist. The patient's family arrives to take them home. The patient now has a list of instructions, several scripts for different medications, a couple of referrals, follow-up appointments and a brochure about the complications of surgery.

And the original injury? A complicated fracture of the arm. Directly and indirectly the patient has come into contact with a myriad of people and lots of different equipment. The patient is at the mercy not only of the competence of the people involved in their care, but their availability to care for them, as well as the reliability and accuracy of the technology used plus a continual power supply. Other considerations are professionals talking with each other and the patient, handing over appropriate information, following infection control and occupational health and safety procedures, correctly using properly functioning and well-maintained equipment, working with evidence-based standards and guidelines, and recognising variants. This is helped by the assumption that the patient has the capacity to understand what is going on. In many ways, the patient can be likened to a puppet manipulated by so many puppeteers that the performance may be uncoordinated, possibly lack control, and is especially risky when the strings get tangled and none of the puppeteers can agree on who should unravel them.

Improving safety

Risk management, which is used extensively in high risk industries such as aviation, modelled on the Australian/ New Zealand standard AS/NZS4360 is recommended for use in health care. This standard intersects areas such as understanding the context leading into identifying the risks, then analysing and evaluating these before treating them. All these processes are continuously subject to communication and consultation and monitoring and review at all points.[11]

Knowing that human error is so prominent in adverse events, some effort needs to be invested into making it harder to make mistakes. Safe staffing, appropriately qualified and experienced personnel and training has been shown to contribute to better care but not the rate of adverse outcomes.[12] Other research shows definite and measurable impacts on patient outcomes, medical errors, length of stay, and patient mortality.[13] The relationship between human resource issues and clinical outcomes must take into account fatigue, workload, rostering, skill and role mix, staff numbers and supervision and team functioning.[14]

The Australian Council for Safety and Quality in Healthcare suggest a safe health care system is one that is people centred, has a culture of learning for quality improvement, supports multidisciplinary approaches, and constantly strives to eliminate error and improve systems design to make health care safer.[15] A common feature of quality improvement initiatives is the lack of participation from key stakeholders, such as medical staff. It is difficult to achieve risk reduction targets if one or more groups of professionals choose not to comply with risk management strategies.

Mandatory reporting of adverse events

The 'To Err is Human' report in the USA was controversial in a number of areas but especially so in its recommendation that there should be mandatory reporting of serious events and medical errors by hospitals. Mandatory reporting using what is called a 'just culture', wherein there is no individual blame or punishment for reporting errors and near-misses, is used effectively in the aviation industry.[16] The various reports in Australia highlight the significant aspect of human error in adverse event reporting.[17] Incident monitoring rather than, or additional to, incident reporting, is favourable with the advantage of reporter anonymity and de-identified data being used analytically rather than to apportion blame.

Making error reporting mandatory in law is predicted to lead to an expectation that the government pay compensation for medical errors that lead to adverse outcomes.[18] This is not an expense that governments surely want but in Australia there has been federal involvement in the changes in medical indemnity law and debate about capping the amount of pay-outs in proven injury.[19] People make mistakes. With all adverse events and near-misses in health care there is a human element - otherwise an event would have to go unremarked. Traditionally, individual blame for mistakes has lead to adversarial ways of dealing with mistakes. The move to blaming 'the systems' and approaches to fix these systems doesn't stop human error though it may prevent a series of such errors escalating to cause a catastrophic event.

The risk of reporting errors

Gillon states, 'whenever we try to benefit others we inevitably risk harming them'.[20] Most of the time, near misses, adverse events and errors are managed 'in-house'. Serious errors may be referred to health complaint commissions, coronial inquiries, and health professional regulatory bodies. If nurses make mistakes they may be investigated by their respective state nursing

board. However, these boards do not have jurisdiction to investigate inadequacies in the health system.[21] If an adverse event causes injury to a patient, they have a right to be compensated in some way. Unfortunately, due to the various groups of health professionals wanting to protect their own, getting justice for wrongs has been lucrative for the personal injury law sector.

Some practitioners never acknowledge their errors and need to be 'dobbed in'. Whistleblowers have some protection in law[22] but risk damage to their reputations, integrity and career prospects if they choose to disclose information about individual or systematic practices that contribute to adverse outcomes. Inquiries into the Campelltown and Campden Hospitals (NSW)[23] and the King Edward Memorial Hospital (WA)[24] are local examples of what happens when things go wrong over a number of years due not only to systematic errors, but to a culture of fear, a polarisation of opinions from the various stakeholders, a lack of communication, a failure to manage adverse problems effectively and an impotent risk management policy. These failures filter through an organisation and must eventually effect the patients, who lose faith in the health care system even when problems are remedied.

Open disclosure about adverse events

People sue health care professionals and hospitals for not only financial compensation but because they want to find out what happened and prevent it happening to someone else.[25] The idea of open disclosure when things go wrong is attractive. Barriers to this are the fear of litigation and the belief that professionals don't make mistakes. It is enacted in Victorian law that an apology does not constitute an admission of liability in civil proceedings where the death or injury of a person is in issue.[26] Unfortunately legal wins or losses are not a risk management strategy, nor do they ultimately lead to improved safety for all, yet they seem dominant in influencing decisions about health care servicing and regulation.

Australia is in the process of instituting the Open Disclosure Standard. This standard involves the open discussion of incidents that result in harm to a patient while receiving health care and is comprised of four elements - an expression of regret, factual explanations, potential consequences, and the steps being taken to manage the event and prevent re-occurrence. The discussion paper suggests that the ethical framework for such a standard is respect for patient's autonomy. However, there are insurance and legal implications such as admission of liability and issues about confidentiality, privacy and freedom of information that need addressing.[27] Despite such encouraging initiatives it is unlikely that human error will ever be eliminated.

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Anne Moates

The New Genetics: Therapy or Enhancement

'Our new knowledge of genetic manipulation forces us to ask a question other generations couldn't have imagined: are we a good enough species?' [1] This article examines the difference between therapy and enhancement, and looks at recent genetic advancements and their ethical import to our society today.

Many observers of the biomedical scene believe that we are about to enter an age in which the improvement of human bodies and minds will become a primary goal in research and clinical practice. There are deep and universally familiar human desires for betterment – whether it be for smarter offspring, superior performance or ageless bodies. Such uses of biotechnology, some of which are now possible and some of which may well become possible in the future, will inevitably present us with profound ethical challenges. While some commentators are hopeful, many others point to the possibilities of inherent and unforeseeable danger. And a great many point to questionable ethics underlying such goals.

The problem revolves around two concepts and the way technology is, and will be, applied. Therapy is commonly understood to mean the use of biotechnical (and other types of) power to treat patients with known conditions and diseases in an attempt to restore them to a relatively normal state of health. By contrast, enhancement can be defined as the directed use of biotechnical power, where no underlying pathology exists, to augment the workings of the human body and psyche.

Those who introduced this distinction hoped by this means to delineate between the acceptable and the dubious or unacceptable uses of biomedical technology: therapy, or treatment, is usually ethically fine, enhancement is, at least prima facie, ethically suspect.[2] For example, while gene therapy for life threatening conditions or anti-imflammatories for arthritis is fine, insertion of genes to enhance intelligence or steroids for athletes is, to say the least, questionable.

Whatever people believe, prospects for enhancement can not be avoided for long because biomedical sciences, and particularly genetics, is advancing at a startling rate. The question facing us all today is: should it stop, and if so, where?

The answer, according to enthusiasts such as Dr Lee Silver (Princeton University, US), is that it won't. Although practical difficulties abound, the urge to have healthy children and lead better lives is so strong that the science of human engineering will be driven inexorably. As he rightly points out, two key approaches to the shaping of a child's genetic make-up are already being perfected by scientists. One — embryo selection — is now routinely practised by clinicians. The other — embryo engineeing — is still in its infancy but should be practicable in the near future.[3]

Embryo Selection

Selection involves creating embryos using the technique of in vitro fertilisation. Each embryo is allowed to develop for a few days, before a single cell is removed. Its DNA contents are then tested for the presence of a particular genetic mutation, although it is now possible to test for several abnormalities simultaneously. Embryos selected are placed into the womb, while those with an undesirable gene are discarded. This technique is known as preimplantation genetic diagnosis (PGD) and the ethics surrounding it are discussed elsewhere.[4] It is routine throughout much of the world today. Many inherited conditions, among them blood disorders such as thalassaemia and sickle-cell anaemia, and wasting muscle afflictions such as Duchenne muscular dystrophy, are being eliminated, rightly or wrongly, in this way. It effectively subtracts genes from future generations: whether we like it or not, genetic science has already begun to shape future generations.

Taken one step further, scientists are now finding ways to use embryo selection to pick individuals best suited to withstand problems that might affect them beyond childhood or adolescence. For instance, genetics laboratories can now ensure that women and men with early-onset Alzheimer's disease can have a child who lacks the gene responsible and therefore faces a future with a diminished chance of developing dementia. Other research teams, most notably here in Australia, have begun screening embryos from women who are susceptible to breast cancer so that the resulting children are not predisposed to the condition.[5] These women are usually fertile but

undergo IVF so that PGD can be performed and the desired embryo transferred to the uterus. Of note, these interventions do not cure or give insurance against a certain disease – they only decrease the probability of developing particular conditions later in life.

All the selected attributes discussed so far have been ones possessed by their genetic parents — thus revealing the key drawback of embryo selection. It is limited by the genes that the two prospective parents already possess. Every example of selection to date has been done to correct an ailment or eliminate it from future generations of a family. But what about parents who want, say, tall children, or girls only, or blond-haired offspring: characteristics selected for social, not medical reasons? The answer at the moment is not given, and most authorities strongly disapprove of satisfying such desires. Enter embryo engineering, where techniques enabling such manipulations may not be far away at all.

Embryo Engineering

Indeed, the above-mentioned procedures are already routinely performed in animals, with varying success. Single genes can be inserted into an embryonic genome (a complement of chromosomes) so that the resulting offspring carries new genes which are transmitted to subsequent generations. Modifying animals in this way is already standard practice. For instance, sheep and goats that make human medicines in their milk have already been produced. And animal models that closely mimic human diseases, in order to closely study the condition through, say, the testing of putative drugs, are also being created in the laboratory. But the technology is largely hit and miss. Because the process by which foreign genes integrate into the host genome is still poorly understood, countless embryos are created and destroyed before a successful, genetically engineered creature is produced.

Such experiments on human embryos are currently viewed as unacceptable by most governments, although this might change as the techniques are improved and safety concerns addressed. Scientists see little practical reasons why it can't be applied in the clinic. Several universities and biotechnology companies are developing artificial chromosomes made of human DNA, leading to the prospect of one day developing tiny bags of human genes that could be injected into embryos so that the children grow up with enhanced traits and abilities.

Take a gene for muscle bulk, for instance, which has recently been identified and isolated.[6] This extra gene could be inserted into a human, single-celled embryo so that the developing fetus and child has an extra copy in every cell. And just like that, the child would grow up with extraordinary strength.

Many in the field see little of ethical import if such a scenario did emerge. James Watson, co-discoverer of the structure of DNA, put the matter simply: 'If we could make better human beings by knowing how to add genes, why shouldn't we?'[7] But just because we can do something, should we automatically do so? Have we entered a parlous state of affairs, where technology is again outstripping ethical debate of such advances? Perhaps so. Even advocates for enhancement concede that 'we therefore have to face the prospect that at some point, someone, somewhere - perhaps in 20 years - will cross the line and create a genetically engineered human embryo that will grow up to be a living human.'[8]

The New Genetics

The embryonic stage is not the only point at which genetic manipulation can occur. Gene therapy is an experimental procedure whereby a functioning copy of the defective gene is introduced into the patient. It has been applied to children and adults, also with varying success. But alleviating a debilitating condition is one thing. Choosing to enhance one's genetic make-up is quite another. The crucial criterion is one of medical need, but today this is not as clear-cut as one might think.

Until little more than a century ago, the only aims of medical care were the cure of disease and the relief of human suffering. But the definition of 'human suffering' has gradually changed. In the 21st Century we increasingly find ourselves faced with the reality that it is no longer sufficient to prevent or treat sickness of the body or mind. Rather, clinicians are expected to address increasing attention — and both public and private resources — to the millions who are dissatisfied with what nature and their own DNA have given them. 'Whether for rhinoplasty, botox injections, or a prescription for sex hormones, thousands of men and women daily make their way to doctors' offices, intent on improving themselves. Not sick in any usual definition of the word, such discontented people would like to be better than they are, better than merely well. Even "better" may not be enough.'[9]

Being Brave or Depraved?

Such a future scenario excites many in the community. Some scientists and futurologists have not been shy about prophesying a 'better-human' model in the near future, available with the aid of genetic engineering, nanotechnologies, and psychotropic drugs. 'At this unique moment in the history of technical achievement,' declares a recent report of the National Science Foundation (US), 'improvement of human performance becomes possible.' Furthermore, such improvement 'could achieve a golden age that would be a turning point for human productivity and quality of life.'[10] Observing present trends, some go further: 'They (future humans) will likely see it as a strange and primitive time when people lived only sev-

enty or eighty years, died of awful diseases, and conceived their children outside a laboratory by a random, unpredictable meeting of sperm and egg.'[11]

Such use of biotechnical powers to pursue 'improvements' and even 'perfections', is troublesome because it is at once both the most seductive and most disquieting temptation. Whilst showing our deep dissatisfaction with natural limits, it also reflects our ardent desire to overcome them. What's so beguiling is the attractive science-based power to remake ourselves after images of our own devising. And many see nothing wrong with that. But what is so wrong with our current condition? And if we as a society accept the need for improvement, what exactly is it about our lot that needs or invites this? Should we address only specific, debilitating conditions that compromise our well-being, such as juvenile diabetes, cancer, or Alzheimer's disease? Should we not also include mental illnesses — not just retardation and major depression, but also memory loss and melancholy — perhaps even incontinence, impotence and self-contempt? Do we want to alleviate sickness and suffering, or also such things as maliciousness, bitterness and despair?

This may all sound rather far-fetched, but consider the threshold we now stand on. We already have powers to prevent fertility and to promote it; to initiate life in the laboratory; to screen our genes, both as adults and as embryos, and to select for or reject embryos based on genetic criteria; to insert new genes into various parts of the adult body, and perhaps some day also into gametes (sperm and eggs) and embryos; to enhance muscle performance and endurance; to alter mood, appetite, libido, and attention through psychoactive drugs; to replace body parts with natural organs, mechanical organs, or even tissues derived from stem cells and, quite possibly, to prolong not just the average but also the maximum human life expectancy. And all this in the last fifty years of biomedical research.

Of note, these emerging technologies were not originally developed for the purpose of enhancing human beings. Rather, they were produced largely for the purposes of preventing and curing disease, reversing disabilities, and alleviating suffering. Even the fantastical prospect of machine-brain interaction and implanted nanotechnological devices start with therapeutic efforts to enable the blind to see and the deaf to hear. Novel 'techniques and powers can produce desires where none existed before, and things often go where no one ever intended.'[12] This dual use of technology may be it's double-edged sword, and is not only driven by the ineradicable human urge toward 'improvement', but exploited by commercial interests that already see vast market opportunities for non-therapeutic uses. And no doubt many people seeking a competitive edge in their strivings to get ahead may welcome such enhancement. 'But they reflect the shallowest idea about human life — the sense that more is always better. In fact, it is in our limitations that we find our meaning....(we need) the understanding that as a species we are good enough. Not perfect but not in need of drastic redesign. We need to accept certain imperfections in ourselves in return for certain satisfactions.'[13] The whole spectre of enhancement raises ancient philosophical questions: What is it to be human? And what is a good life?

Should we, then, draw the line between what is feasible and what is desirable or ethical? There is often not enough debate on this, with new technologies being automatically implemented in practice. 'What science creates medicine rapidly dispenses,'[14] commentators warn, and this uncritical acceptance by both doctor and consumer is part of the whole equation. And even if such desires for improvement are justified, could the consequences be worse than what we are trying to improve? After all, our understanding of the human body is far from complete. As Dr Kofi Annan, Secretary-General of the UN, recently cautioned: 'The greatest fear is that we may be trying to 'play God', with unforeseeable consequences, in the end precipitating our own destruction.'[15] Perhaps a species clever enough to discover the double helix could do well to leave it more or less alone.

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Michael Herbert

Biblical and Christian Tradition on Respecting Human Embryos

Texts from the Old and New Testament as well as the early Fathers of the Church and Church teaching down the centuries show that there has been a constant and unbroken teaching on the moral inviolability of human life from conception.

The Bible is *the* Book of Life *par excellence* -- about the origin of human life, the beginnings of human history, how to live in this world, and God's loving plan for human beings to be with Him to enjoy an unending life of happiness. God's revelation in the *Genesis* account of creation of the universe and of Adam and Eve is very enlightening concerning human destiny. Their creation is viewed as very good - a unique divine gift for humans alone, ie being made in the image of God who said:

> Let us make man in our image, in the likeness of ourselves, ...
> God created man in the image of himself,
> In the image of God he created him,
> Male and female he created them[1]

All human beings, not just Adam and Eve, are portrayed as being graciously endowed with an exalted dignity and a lofty destiny. Made male and female in God's image, all humans receive the divine injunction to collaborate in God's ongoing creation by procreating children. As masters, they are to be provident stewards in exercising responsible dominion over fish, birds, plants and animals. This is suggested by the following text:

> Be fruitful, multiply, fill the earth and subdue it. Be masters of the fish of the sea, the birds of the heaven and all the living creatures that move on the earth (Gn 1: 28).

Direct dominion, however, is not given to any human being over the lives of other humans since all human beings belong to God in a special way.[2] Jesus himself endorsed the value and moral inviolability of human life protected by the fifth commandment when a rich young man asked what good he must do to possess eternal life. Jesus replied that he should keep the commandments and immediately said: 'You shall not kill' (Mt 19: 18).

References to human life in the womb throughout the Bible give ample evidence that God is providently involved in the formation of human beings from conception. A few quotations will suffice for this. Job gives eloquent witness to this belief:

> Your hands having shaped and created me, ...
> Did you not pour me out like milk,
> and then let me thicken like curds,
> clothe me with skin and flesh,
> and weave me of bone and sinew?
> In your love you gave me life,
> And in your care watched over my every breath (Jb 10: 8-12).

Likewise Jeremiah:

> Before I formed you in the womb I knew you (Jr 1:4).

The Psalmist also says:

> You created my inmost self
> knit me together in my mother's womb. ...
> Your eyes could see my embryo (Ps 139: 13-16).

Isaiah says the same:

> Thus says Yahweh, your redeemer, he who formed you in the womb' (Is 44:24).

Solomon puts it vividly:

> I too am mortal like everyone else,
> a descendant of the first man formed from the earth.
> I was modelled in flesh inside a mother's womb,
> where, for ten months, in blood I acquired substance --
> The result of virile seed and pleasure, sleep's companion (Ws 7: 1-4).

Here Solomon is showing that he is the same as any other man. The reference is to ten lunar months, the equivalent of nine calendar months. We need to remember that the Bible contains the Word of God and is not a scientific account of the beginnings of human life or of human embryology. It reflects the ancient and Aristotelian view that human life originated from the mixing of semen with menstrual blood which becomes solidified, signifying that conception has taken place ie, the *conceptus is held within* the mother's womb. This is what was meant by conception, the beginning of human life, the formation of the embryo in Greek, ie, 'the one growing within'.[3] As such human life from conception was sacred for the readers of the Old Testament. It was not necessary to condemn abortion because it was 'completely foreign to the religious and cultural way of thinking of the People of

God.' [4]

St Paul warned the Galatians that those who practise 'sorcery' 'will not inherit the kingdom of God' (Ga 5:20). Sorcery involved the use of drugs and 'acquired two pejorative senses: the use of drugs to poison people and (as here) the use of drugs in witchcraft.'[5] In addition to these uses, John Noonan says that drugs were also used for contraception and abortion, and adds that the term Paul chose 'is comprehensive enough to include the use of abortifacient drugs.'[6]

One of the earliest non-biblical Christian writings is the *Didache* which was written in Syria and contains moral instructions for Christians. Some of these Christians would have lived alongside pagans or were formerly pagans themselves before they converted to Christianity. It is known that abortifacients were used in the Mediterranean world when the Christian faith was spreading beyond Israel. Some abortifacients destroy the fruit of conception whilst others expel it.[7] Hence there was a need to instruct Christians who were learning the way of the Lord. Here is a typical list of prohibitions: 'You shall not murder.... You shall not practice magic. You shall not mix poison. You shall not murder a child, whether by abortion or by killing it once it is born.'[8] Another text details the characteristics of people who were on the way to spiritual death, ie, people 'who do not know him who made them, [who are] child murderers, who destroy what God has formed, who turn away from the needy person ... [and people who are] sinners in everything they that they do.'[9]

In the second century Clement of Alexandria had this to say: 'For those women who conceal their sexual wantonness (fornication) by taking stimulating drugs to bring on an abortion wholly lose their own humanity along with the fetus.'[10] Caesarius, Bishop of Arles (503-543) in his sermons says 'No woman may take abortifacient potions, for she should not doubt in the least that she will be tried before the judgement seat of Christ on as many counts as she kills those newly born or just conceived.'[11] Towards the end of the second century and before he became a heretic, Tertullian (160-240) wrote: 'For us, murder is once for all forbidden; so even the child [*conceptum*] in the womb, while yet the mother's blood is still being drawn on to form the human being, it is not lawful for us to destroy. To forbid birth is only quicker murder.'[12] Though many in the Greco-Roman world wavered or approved the use of abortifacients, Christians condemned it. As Noonan says: 'the Christian rule was certain.'[13]

Throughout the following centuries it was unanimously held that it was gravely immoral to destroy a life that had been conceived because it belonged to God in whose image it was made. The canonical penalty for abortion was regularly excommunication after ensoulment was deemed to have occurred, but not beforehand.[14] The Church's *Declaration on Procured Abortion* confirms this about the Middle Ages 'when the opinion was generally held that the spiritual soul was not present until after the first few weeks, a distinction was made in the evaluation of the sin and the gravity of the penal sanctions. In resolving cases, approved authors were more lenient with regard to that early stage than with regard to later stages. But it was never denied at that time that procured abortion, even during the first few days, was objectively a grave sin.'[15] In 1679 the Church condemned the following opinion: 'It is permissible to procure an abortion of a fetus before ensoulment to prevent a pregnant woman (girl), once caught, being killed or defamed.'[16] In 1869 Pope Pius IX changed canon law so that excommunication for abortion applied from conception.[17] This is still the law now. A very authoritative witness to the moral inviolability of the human embryo was given by the Second Vatican Council: 'Life must be protected with the utmost care from conception.'[18] A few years later the Holy See declared 'Human life must be respected absolutely from the moment of conception.'[19]

There is indeed a unique relationship between the Creator and humans compared to the rest of creation. Only human beings are created in God's image and likeness. Human beings alone are told to 'increase and multiply and thereby responsibly collaborate with their Creator to procreate children. It is immoral to use IVF to create human embryos destined for destructive research. However, human embryos ever belong to God even if they are deprived of their natural receptive and nourishing environment of a woman's womb.

The terms 'life' and 'being formed in the womb' abound in the Old Testament. Such texts show the goodness of human life and its formative process from conception. Hence God's special creative involvement makes human life sacred and confers on it unconditional moral inviolability.[20] As John Paul II said: 'the Church has always taught and continues to teach that the result of human procreation, from the first moment of its existence, must be guaranteed that unconditional respect which is morally due to the human being in his or her totality and unity as body and spirit: 'The human being is to be respected and treated as a person from the moment of conception.'[21]

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Norman Ford SDB ✣

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