# Contrasting Ethical Approaches to Organ Transplantation and Xenotransplantation

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## 1. Introduction to the brave new world of organ transplants

The French-Canadian film *Jesus of Montreal* tells the story of a group of young people re-enacting the passion and death of Christ. When the Jesus figure is killed his body is harvested of organs and like Jesus' garment divided up among several recipients; as a result several people's lives are saved. This modern secular retelling of the story of the life-sharing death of Jesus and his resurrection in the lives of other people who share his body, had a more or less happy ending. Pope John Paul II (1991) has drawn a similar parallel with respect to transplantation: "The progress of medical science has made it possible for people to project even beyond death their vocation to love. Analogously to Christ's Pascal Mystery, in dying death is somehow overcome and life restored."

The media is full of good news stories of modern medical miracles and lives saved by transplants. But organ transfers are not always unambiguously good. One recent newspaper report told of a woman whose eighteen-year-old son was the victim of a motor accident. She was pressured to consent to organ harvesting and within twenty-four hours her son had been declared brain dead, his heart, liver, kidneys and eyes had all been removed, and his organs had been transplanted to four different recipients. Nine months later the mother was still suffering nightmares, visions of what she regards as the medical killing of her son and the violation of his body.

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One of the biggest practical difficulties with transplantation today, which leaves in its wake a range of bioethical questions, is the high demand for organs and the relatively short supply. The more successful organ transplantation is, the greater this problem becomes (Martinelli 1993, p. 240). So new sources for organs are constantly being sought or proposed. Meanwhile the international trade in organs is growing apace. The principal donors are, of course, the poor—especially in Asia and the Near East. But such practices also occur in relatively affluent countries: recently a millionaire Harley Street kidney specialist was struck off for taking part in the kidney trade.

Nor are organ seekers always very particular about consent. The organ trade has become a government-sponsored industry in China where the organs of prisoners awaiting execution are put on the market in advance: the prisoners are then killed at military hospitals at a convenient time for the recipient so that their organs will be as fresh as possible when transferred. Meanwhile there are stories of people being kidnapped, sedated and having organs removed without their foreknowledge, let alone consent.

Technological breakthroughs are bringing in their train a whole new generation of biomedical possibilities and bioethical dilemmas. Xenotransplantation—the transfer of animal organs to human beings—is now very much in the media. While the use of valves and other animal parts is increasingly common, it is the major organ xenotransplants such as baboon hearts which make the news. The fight against immunorejection continues not merely through the use of strong drugs, but with experimental efforts to introduce human genes, especially those of the intended organ recipient, into the animal organs so as to trick the recipient's immune system. Even better ways of avoiding immunorejection are on the horizon. A recent article in the *American Journal of Science* proposes that embryos, embryoid bodies and embryonic cell lines might be cultured to grow replacements for any part of the body. By cannibalising embryos who are identical twins of the recipients, these replacement organs would not be rejected by the body's immune system: the body would be fooled into thinking it was its very own organ. Of course embryos would die in the process, but in a world where early human life is cheap this is hardly likely to stand as an obstacle to many scientists.

Meanwhile transplantation surgery is becoming more and more commonplace. Recently medical and nursing staff in some institutions

have been threatened with dismissal if they refuse to take part in organ harvesting on conscientious grounds. Such a thing would be out of the question were transplantation not already regarded as 'mainstream'. And not only is transplantation more and more common, and more and more successful, but the range of transplantable materials is constantly expanding —from almost whole bodies down to parts of the genome and everything in-between, from closely related human beings to distantly-related animals. (In this article I will concentrate on major organ transplants, but it should be kept in mind that much more is or soon will be transplantable.)

Whatever the degree and kind of organ transfer in view, there are always two aspects: every such organ is *for* someone and it has to come *from* somewhere —hence the 'trans' in transplantation. Thus we will consider in turn some ethical issues relating to organ reception and then some with respect to organ procurement.

## 2. Some ethical issues in organ reception

The rationale for organ reception is straightforward: *it is hoped it will help the recipient.* The overall success rate for heart, liver, kidney, lung and other major organ transplants is presently around 60% (Michejda 1997, p. 87). When they work transplants rescue people from death, cure existing illnesses, prevent further ones occurring, alleviate suffering and disability, and improve the patient's so-called 'quality of life' insofar as this is health-related. This is clearly in keeping with the fundamental orientation of healthcare, at least as it is understood in the Hippocratic-Christian tradition.

Transplantation surgery is, however, complex and so requires technical judgments about the most effective and efficient means to achieving the result of transposing an unhealthy organ with a healthy one, ensuring as far as possible that the graft works and that there is no immunorejection. The risks and side-effects must also be taken into account: when a baby receives multiple organ transplants and dies as expected within hours of the surgery, one has to wonder whether the abuse the child suffered could possibly justify the attempt. Likewise xenotransplantation is a cause of considerable concern because of its attendant risks. In "Baby Fae: the 'anything goes' school of human experimentation," George Annas (1985a) likened this case of a baby who received a baboon heart but died soon after to those kinds of pseudo-medical experimentation forbidden in the Nuremberg Code.

Since that famous case there have been several other attempts to transplant porcine and other animal hearts into human adult recipients, all of which have, as far as I know, resulted in violent graft rejection (Michejda 1997, p. 85). But improvements in immunosuppressants and experiments in genetically engineering animal organs which are human enough to fool the human immune system may reduce this objection to xenotransplantation in the near future (*cf.* McCarthy 1996). More problematical are the fears of leading virologists of transspecies contamination with various diseases ordinarily found only in non-human animals (*cf.* DLRM 1998). There is evidence that the terrible influenza epidemic that followed the First World War and the 'Hong Kong flu' of 1957 and 1968 were porcine in origin; HIV has recently been shown to have originated in African chimpanzees; bovine spongiform encephalopathy, the so-called 'mad cow disease', has spread from animals to human beings in Britain in recent years; in 1997 an unrecognised strain of hepatitis E was discovered in pigs in the USA; and various simian, porcine, bovine, equine and other animal diseases periodically present grave difficulties when contracted by humans because our species has not evolved the appropriate immunities. Most of these diseases have been contracted in ways other than organ transfer, but the risks associated with major organ xenotransplantation are clearly great given that the animal organs are generally 'fresh' and the immunoresistance of the recipients is so reduced.

The usual norms of healthcare ethics apply in transplantation as elsewhere. For instance, transplant recipients or their legal guardians have a right to reliable information about their prognosis with and without the transplant, the likely and possible side-effects, the benefits and the risks. If this requirement is satisfied, and without transplantation the prognosis is very poor, then considerable risk-taking is clearly permissible. Heart transplantation surgery was originally highly experimental and predictably fatal, but the goal was always saving the particular patient as well as improving the technique, and with each attempt more and more was learnt; nowadays it is highly successful.

Costs are another concern. Some transplant surgery is very expensive; healthcare resources are finite; spending on such care competes with other health and welfare projects. As a result some places such as the US states of Virginia and Oregon have moved to take transplants off the government-sponsored 'free list'. Health planners are also fearful of an explosion of transplant procedures as donor sources grow,

more and more becomes possible, and more people seek to extend life on earth indefinitely; this could in turn become prohibitively expensive. On the other hand, transplantation such as that of kidneys can ultimately save money (compared with long-term hæmodialysis) and is no more expensive than some other 'mainstream' therapies; the cost of the procedure is also likely to come down as knowledge is gained and skills developed.

A powerful driver of the cost explosion in contemporary healthcare has been the *technological imperative* —the idea that if a thing can be done technically, it should be done (or inevitably will be done). Propagandists of the technological imperative often caricature their opponents as backward 'Luddites' or religious fanatics, fearful of progress and science, while presenting themselves as enlightened and heroic benefactors, indeed leaders, of humanity as it marches into a glorious technological future. Those caught up in this way of thinking may be inclined to brush aside the ethical questions which books like the present one ask with respect to some proposals, resentful perhaps of 'interference' from 'conservative' health professionals, lawyers, ethicists, churchperople, patients' advocates and the like. But it is clearly implausible that everything science can do is intrinsically good, or will 'in the long run' or 'on balance' be for the better and should therefore be pursued. Leon Kass (1997) suggests, on the contrary, that "we must all get used to the idea that biomedical technology makes possible many things we should *never* do." This is as true in the transplant field as elsewhere.

An even more subtle and seductive imperative than the technological imperative is what I call *the rescue imperative*: the ordinarily very proper desire to save the dying. On the face of it this is exactly what medicine is first and foremost about; and 'pro-life' ethicists, at least, should be immediately enthusiastic about any measure so directed. But the Good Samaritan norm of life-saving is not absolute: there is no duty to preserve life 'at all costs', by every possible means, no matter what is required or forgone in the process. On the contrary, a single-minded focus on preserving life (or improving health) can be just as dangerous as any other fanaticism which ignores other goods, other norms, other responsibilities, and the downsides of any choice.

More exotic proposals in organ transplantation are that gonads might be transferred from person to person, or that parts of human or even animal genomes might be transplanted not merely for therapeu-

tic but for enhancement reasons, or that human brains or parts of human brains might be transplanted into the bodies of other human beings or even animals. The Catholic Church opposes such proposals on the persuasive grounds that they undermine personal and procreational identity, uniqueness and dignity (*cf.* Vatican *Charter* §88). How much of this is the realm of pure science fiction and nightmare I am not sure: in these areas science fiction has the habit of becoming science fact rather more quickly than we expect.

Another ethical concern is that organs, like other resources and opportunities in life, should be distributed fairly. Elsewhere I have sought to outline the criteria upon which resources such as organs should be allocated (e.g. Fisher 1996b); I will not rehearse that argument here. Suffice it to say that medical need and ability to benefit should be the principal criteria, not ability to pay, social contribution, quality of life, or whether you have been far-sighted enough to volunteer as a donor yourself (*cf.* Jarvis 1995). But any consideration of justice in the distribution of organs invites us to open up the enormous ethical can of worms of whether any country but especially any poor country, in which far more basic forms of healthcare are not readily accessible to all, should even be considering such high tech and high expense therapies. And that in turn invites us to ask whether the global community should tolerate operations in some countries at a cost of hundreds of thousands of dollars with little prospect of success while other countries go without the most primary of healthcare...

## 3. Different bioethical approaches to organ procurement

Far more ethical issues arise at the organ procurement end of the transplantation process. Controversial questions have included: who can consent and how? Should the law require the consent of a person or their next of kin before their organs can be taken (an 'opting-in' system) or can it presume consent unless otherwise indicated (an 'opting-out' system)? Should relatives, friends or executors be able to veto the express wishes of the deceased regarding organ donation? Should organ salvage always be unpaid (strictly speaking, this is the only genuine kind of organ 'donation') or should people be able to put parts of the themselves up for sale, as labour, sex and blood have been sold for a long time now. Organ procurement, it is sometimes pointed out, like non-therapeutic experimentation, is not even *healthcare*: it is not focussed upon saving or healing the person concerned: strictly speak-

ing, it is more like mutilation. What approaches, principles, models of care and virtues should guide our decisionmaking in this area? How are we to 'balance' the interests of 'donors', their relatives, carers and others affected by the donors' welfare, with the interests of the recipients, their relatives, carers and others affected by the recipients' welfare?

Our answers to these questions, as to all questions in applied ethics, depend crucially upon our ethical perspective or methodology. All too often health professionals operate out of the assumption that there is only one such perspective —that of 'the profession'— or that there are umpteen of them —everyone has her own. But a serious consideration of an issue such as organ procurement from several of the principal approaches recognized in contemporary moral philosophy may help us not only to uncover our own assumptions but also to assess the value of each perspective.

### *3.1 Individualism*

*Individualism* is the name given to those approaches to ethics which give primacy to personal choice over all other values in ethics. Simply put: getting my own way is what matters; as long as I am not hurting anyone else, I should be allowed to 'do my own thing'; governments, professions, churches and others should not interfere too much in people's choices. Writers such as Tristram Engelhardt (1996), Joseph Fletcher (1988) and, to a lesser extent, Beauchamp and Childress (1994), the proponents of the 'Georgetown mantra' in which autonomy ultimately trumps all, have from different angles, proposed a 'do your own thing' bioethics which is especially comfortable in 'liberal' societies such as the US and its cultural colonies. Libertarian, subjectivist and/or situationist approaches remain predominant in mainstream bioethics despite critiques from many quarters in recent years (e.g. Clouser & Gert 1994; Finnis & Fisher 1993).

Applied to the issue of organ procurement, individualism says that it is up to each person to decide whether they want to give or sell any part of their body to anyone else, and there the ethical issues more or less end. Of course there is a great deal packed into the issue of consent here. There are at least ten distinct categories of subjects of organ procurement, and each raises particular questions regarding capacity, freedom and knowledge to consent:

- freely consenting living adults
- non-consenting living adults
- semi-consenting living adults
- living children and mentally incompetent adults
- living unborn children
- cloned human 'embryriod bodies' or 'stem cells'
- deceased adults (commonly called cadaveric donors) who have bequeathed their organs before they died
- deceased adults who specifically refused to bequeath their organs before they died
- other deceased persons who have died without expressing any intentions with respect to their organs
- animals.

For the strict individualist only genuinely competent, free and informed adults can give or bequeath organs; all others (non-consenting adults whether alive or dead, as well as children and mentally incompetent adults) cannot be organ donors and the removal of organs from them is an assault. Family and friends cannot override the express desire of a deceased person to donate his organs; individualists therefore oppose the veto commonly given to next of kin. Problematical for the individualist are people who die 'intestate' with respect to their organs, or those such as children and the insane who cannot do so; *prima facie* no-one else can consent on their behalf; legal guardians can only act in the interests of the deceased, infant or mentally ill person not some potential recipient. An opting-out approach, such as has been adopted in France, Spain, Israel, Sweden and Singapore, would, on this view, be an infringement of human rights and inhibit genuine altruism (cf. Martinelli 1993, p. 245). Whether living unborn children, cloned human 'embryoid bodies' and animals have any rights in these matters depends upon one's view of their moral status; most individualist writers tend to regard them as the property of parents or owners who can do with them as they will, including consenting to the removal of their organs. But if one takes the view that any or all of these categories of potential organ donors are already human persons, as a Catholic would with respect to the first (unborn children) and very possibly the second (human embryoid bodies) but not the third (animals), then they are entitled to the same respect and protection as human children.

A final problematical category for the individualist are what I have called 'semi-consenting' adults, that is, those in desperate medical or financial need who agree to supply an organ in order to receive some other care or financial reward, those who are ill-informed as to the implications of organ procurement, or those who are institutionalised or for some other reason vulnerable to coercion, intimidation or overwhelming reward for supplying an organ. Here the individualist is torn between the desire to leave these matters up to each person to decide for themselves, including their right to treat their own bodies as property, and the fear that the person's autonomy may be so compromised by circumstances as to make the choice less than truly competent, free and informed. Most individualists, however, tip in favour of maximizing freedom here, including the freedom of the poor to sell their organs in order to feed their children or pay the mortgage.

The attractions of the individualist approach to bioethical decisionmaking and its applications to organ procurement are straightforward enough: overt respect for human dignity and especially autonomy and moral pluralism; a reliance upon the good sense and sensitivity of ordinary people to make their own best judgments in their own circumstances; avoiding grand theories and moral rules which fail to respect the complexity of individual situations and differences of perspective. On the other hand this approach can leave people with little or no basis for criticizing their personal prejudices and gives the puzzled individual little help in making decisions. It also allows people to compromise some of our civilisation's most basic values (such as respect for persons, reverence for life, compassion for those who suffer). And it is potentially very anti-social, taking little account of the communities and traditions to which the individual belongs when making personal decisions.

### *3.2 Communitarianism*

*Communitarian* approaches to ethics, in stark contrast to individualist ones, give primacy to our interconnectedness with others. Simply put: living well with others is what matters; building up society and serving the common good is more important than getting your own way; cultures, governments, professions, churches and others should promote an ethos of public service. Contemporary feminist 'nurture ethics', socialist moral philosophies, liberation theologies and other schools emphasize values such as loyalty and compassion in relation-

ships and the rôle of communities and traditions in shaping moral character and responsibilities, rather more than private rights and fulfilments.

Communitarian approaches to organ procurement emphasize the social responsibility to donate organs where this involves little or no burden to the donor. Bernard Teo (1992), for instance, writes: "The distinctive feature of transplantation is that, in contrast to other forms of healthcare, its success depends upon full communal good will and participation." Francis Delmonico (1997, p. 61) likewise writes that "organ donation is a wonderful display of giving to others, of service to others, of love for another, given as one way Christ has taught us to be for others, 'so that others might live'." In principle this would apply not only to consenting adults but also to children, the mentally incompetent and the deceased. Communitarians would support an opting-out rather than an opting-in system of organ procurement: all citizens would be presumed to consent to the taking of their organs after their death unless they make a very clear declaration to the contrary during their lives; even this would require very good reasons. Children, likewise, might be expected to give up organs for others, especially their own siblings, as in cases where parents consent to bone marrow being taken from one child for the sake of another. Criminals, too, might be encouraged to give up surplus organs as a way of making restitution to the community.

If communitarians are in general more enthusiastic about organ procurement than are individualists, they may also be more sensitive to its downsides, such as the grief of the family and carers of cadaveric donors; the complex pressures which might be brought to bear upon organ donors, especially within families or where the prospective donor is poor or their freedom reduced; the problems of commercialisation of the organ transfer process and of the privatisation not only of the donation decision but of the various interventions involved; the challenges which organ procurement and transplant surgery present to communities, especially poorer ones, which cannot afford to provide every potentially life-extending measure to every citizen and must decide who gets what; and so on. (*cf.* Dwyer & Vig 1995; Marshall 1996 and articles therewith)

Communitarian approaches to bioethical decisionmaking and to our question of organ procurement have their attractions: they avoid the asocial, indeed anti-social, tendencies of me-generation moralities;

they recover important values lost in an individualistic, commerce-dominated scientific age; they speak to the modern craving for community in the midst of increasingly alienating and anonymous urban environments. The problem with such approaches is that in emphasising the needs of the group they can lose sight of individual rights and personalities; they can tend towards a cultural relativism in which whatever the group says goes; and they can leave people with little or no basis for criticising the customs and prejudices of those they live and work with.

### *3.3 Deontology*

*Deontological* approaches to ethics emphasize the importance of clear moral norms and responsibilities. Simply put: doing your duty is what matters; there are moral rules and we should conform to them, whatever the particular circumstances, personal motives or foreseen results; we should obey the moral law-giver—whether that is God, the Church, our profession or the structure of rational and autonomous choice. Traditional medico-moral approaches which have focussed upon established sacred texts, the Hippocratic oath and prescribed codes of ethics, and contemporary bioethics such as the 'principlism' of Beauchamp and Childress, are important examples of this kind of approach.

Following the example of Immanuel Kant many contemporary deontological bioethicists insist upon the principle that one may never use people as a mere means but must always treat them as ends in themselves. This has important implications for the question of organ procurement. The unease that many people feel about transplantation seems to arise here: that in the rush to save lives by transplanting organs there is a real temptation to treat potential donors as mere harvest grounds rather than people (or recently deceased people) with their own intrinsic dignity worthy of our respect and care. People are entitled to respect for their personal dignity, bodily integrity and privacy: even if they consent to organ salvage, organ donors do not become mere things to be used up by those who are enthusiastic to take their tissues. Opting-in would therefore be preferred by most deontologists to opting-out, the idea being that the former is less likely to instrumentalize people than the latter. Sale of organs would almost always represent immoral self-instrumentalisation akin to prostitution or selling oneself into slavery. And children and the mentally incompetent, prisoners and the poor and desperate, could not be used as donors.

Another major ethical concern of many deontologists is that cadaveric organ procurement may actually be killing some of the donors. Z R Wolf (1994, p. 981) writes that "the use of the terms brain-dead, dead-dead, living-dead, newly-dead and nearly-dead emphasise only a few of the grey areas that surround the definition of death." I will not rehearse the long debate about determination of death and the various meanings of brain death, arguments for and against it as a valid definition of death, and appropriate clinical criteria. Suffice it here to say that if so-called brain death involves less than loss of total brain function or if it is possibly reversible or if it does not occasion the disintegration of the human organism, then the brain death criterion is deeply suspect. It is troubling that much of the work that was done on brain death since the so-called Harvard criteria were developed has been by those directly concerned with organ procurement and therefore with a strong interest in getting 'fresh' organs. There is likewise a worrying trend at the moment to declaring people dead who are only partially brain dead, such as anencephalic babies and persistently comatose people. Christians and others with a sound philosophy will properly oppose any practice which in the drive to maximize available organs risks killing; they will likewise resist the view that 'the real person' is a person's consciousness and that once consciousness has been irreversibly lost death can be declared or killing permitted. We are still a long way from having an internationally or even a locally agreed standard of death. (*cf.* McCullagh 1993)

No deontological bioethic would support killing people to get their organs, no matter how many people might thereby be saved —whether the 'donors' are unborn children, newborn children with handicaps such as anencephaly, youthful car-accident victims with major brain damage or even consenting adults. Likewise harming a healthy person runs contrary to most deontological bioethics. Recently a Californian prisoner, who had already donated one of his kidneys to his daughter, announced that he wanted to donate his remaining kidney to her also; the man would in turn either die or go on dialysis at a cost of $40,000 per year to the state. The doctors were reluctant and referred the matter to the UC Stanford Bioethics Committee. They too were troubled by the proposal, suggesting that such an operation might violate not only the donor but the surgeon as well. Arthur Caplan, of the University of Pennsylvania's bioethics center was even franker: it would be maiming someone and risking murder. Deontological bioethics forbid both: doctors and nurses may not co-operate in killing, torture or muti-

lation. Killing and mutilating people is contrary to practical reason because it directly attacks a fundamental good (life or health) and contradicts a basic precept of common morality (against harming the innocent); such actions harm not only the victim (whose life, health and physical integrity are always values), but also the perpetrator (who makes himself a killer or maimer), the profession (whose reputation, ethic and relationship of trust to patients present and future is put at risk) and the common good; it sets a dangerous precedent; and it violates established codes of religion, law and profession.

Importantly for the deontologist and contrary to the individualist view, mutilation in the sense of intentionally harming function is unethical even when it is consented to, e.g. to facilitate begging, to preserve a high-pitched voice, to improve one's golf swing, to change one's sex —or to give organs to a loved one. This would not preclude donating organs after death, as there is no function to harm in this situation; nor would it exclude live organ donation where the organ (such as blood or bone marrow) is regenerative or where the removal of the organ does not present any serious risk to function. But it would exclude well-intentioned but ultimately immoral donations such as the American man who wants to give up his only remaining kidney.

Xenotransplantation, especially of whole organs, multiple organs and limbs, presents particular challenges to the deontological perspective on bioethics. Some of these theorists regard animals, or at least higher order animals, as worthy of the same or some parallel kind of respect as human beings. Tom Regan (1985), for instance, objected to the Baby Fae case not because of the use of a child for a high-risk experiment but because he thought it was immoral to sacrifice a baboon for that purpose (*cf.* Nelson 1993). On his account to kill animals in order to use their organs demonstrates an immoral disrespect for the animal and irreverence for the ecology.

We do not have to go all the way with the animal liberation lobby to share their unease with vivisection especially of monkeys and apes. Pope Pius XII, an enthusiast for cornea xenotransplants who would, I suspect, also have supported the use of porcine valves in humans, was totally opposed to gonad xenotransplants, and cautious about other major organs (*cf.* Vatican *Charter* §89). Ancient mythology is full of nightmares of strange hybrids of human beings and animals, and the taboo against bestiality runs very deep through all cultures. Perhaps this revulsion is informative for our present question. In "The Wisdom

of Repugnance" Leon Kass (1997, p. 20) writes that revulsion is not an argument; and some of yesterday's repugnances are today calmly accepted—though, one must add, not always for the better. In crucial cases, however, repugnance is the emotional expression of deep wisdom, beyond reason's power fully to articulate it. Popular abhorrence at incest, bestiality, cannibalism, the desecration of corpses —and here I would include cloning, crossing human and animal species, and non-therapeutic genetic engineering— may well be based on rather more than a fear of the new, whether in science or morality. It may derive from the fact that we intuit and feel, immediately and without argument, the violation of things that we rightfully hold dear.

Because something is beyond reason or words does not mean it is contrary to reason: the analytic dogma that strongly felt awe and deep-seated taboos are merely the worthless remnants of primitive belief systems fails to do justice to the ineffability of the sublime and the unthinkable. Certain things very naturally and properly cause as to pause, indeed sicken and bewilder us. As Kass rightly concludes, 'shallow are the souls that have forgotten how to shudder.'

At the heart of the deontological objection to xenotransplantation there would seem to be a concern not so much about a lack of reverence for animals as about a lack of reverence for the human beings who would be hybridized with animals by xenotransplantation and perhaps a concern about the proper relationship between animals and human beings. Yet if we are willing to eat the organs of even higher animals, when we could get by perfectly well sticking to lower order animals or vegetables, it would be strange to hold that we cannot use those very same organs of those very same higher order animals for something as urgent as saving lives by transplantation. I will return to this question in the last section.

The attraction of deontological approaches to bioethics and to the ethics of transplantation is that they are principled and clear and therefore appeal to the generalised human desire for direction; unlike the two previously considered approaches, deontological ethics yield predictable moral answers and provide some basis for criticising personal prejudices or social mores. Critics note, however, that such ethics rely heavily upon appeal to a particular religious tradition whose authority is contestable, or to a theory of practical reason the alleged self-evidence of which is equally tendentious. Further, it is suggested, deontological approaches bring forth inflexible (and potentially con-

flicting) rules which do not account for complexities and subtleties of moral situations, and can lead to some very troubling conclusions.

### *3.4 Consequentialism*

A fourth example of an influential approach to modern ethics has been *consequentialism*. It comes in many strains, from unsystematic pragmatism to elegantly nuanced utilitarianism, but each starts with the idea of trying to take account of all the good and bad consequences of our options and picking the one which maximizes the net sum of good consequences over bad ones. Simply put: results are what count, indeed all that count; the 'object' (or intention) of the act, the means used, and the motives of the acting person are unimportant. Consequentialist approaches to bioethics have been popularised by utilitarians such as Peter Singer, proportionalist Christian theologians such as Richard M$^{c}$Cormick, and many practitioners in the field whose pragmatism drives much of their decisionmaking.

A consequentialist bioethic is unlikely to have many problems with organ procurement: *prima facie* it will contribute very significantly to promoting the greater good for the greater number of people. The risks and costs both of procurement and of transplantation could be telling consequentialist arguments against too much ebullience concerning organ transfer, but as suggested earlier both downsides are likely to diminish with time and practice and must be weighed against the very great benefit of life-saving. Children, the mentally handicapped, those who wish to sell their body parts for profit, prisoners and the poor, those whose relatives are opposed to organ procurement: all would be potential donors along with consenting adults. Consequentialists will also prefer an opting-out system over an opting-in one (e.g. Hunsicker 1991, p. 72), but they may go further than this, suggesting for instance that no cadaver should go to the grave with useful organs intact. So enthusiastic was the utilitarian John Harris (1975) for organ 'donation' that in the prestigious journal *Philosophy* he proposed that all adult citizens should be enrolled in an 'organ lottery'. Like jury service people they would be chosen at random from the roll; but rather than time and judgment they would be required to give up superfluous organs (blood, kidney, bone marrow) to those who needed them. While this might involve some discomfort and inconvenience for the donors, this would be far outweighed by the lives that would be saved; the greatest good for the greatest number would be served by sharing the organs around.

Michael Green (1979) responded, somewhat tongue-in-cheek, with an even more efficient scheme for organ procurement. Certain people would be chosen, again randomly, to give up *all* their major organs: heart, both lungs, both kidneys, liver, pancreas, bone marrow, corneas, blood. The compulsory organ lottery would now be lethal, of course, but it would save half a dozen people or more at the expense of only one; the greatest good would be served for the greatest number. Harris was forced to admit that this was where his original logic would lead him and at this point in the debate he withdrew his compulsory organ lottery proposal!

This example of the application of a 'results are all that count' ethic to transplantation may seem far-fetched, but it serves as a salutary warning about where enthusiasm in this area can lead us: witness the unseemly haste with which some organ procurers are willing to declare that someone is dead, or that a living donor has had sufficient time and information to give consent. Unfortunately consequentialist approaches to bioethics in general and to transplantation ethics in particular are all the rage (*cf.* Maclean 1993; Oderberg & Laing 1997): they appeal very directly to our benevolent sentiments; they reject attachment to inflexible rules and superstitious taboos against this and that; they incline us to get things done, rather than being paralysed by moral scruples; and they fit well with the modern scientific, economic and 'quality of life' mindsets. The problem is that such approaches require us to compromise some of our most fundamental values such as integrity and fairness, some of our cardinal precepts such as respect for human life, bodily integrity and autonomy, some of our crucial relationships such as that between health professional and patient, and some of our most basic traditions of healthcare practice, all in the name of efficiency and effectiveness. Furthermore, when applied to organ procurement we meet the usual difficulties for consequentialist accounts: it is far from clear what is to count as a benefit and what a loss (the *criterion* problem), how we are to predict all these pros and cons (the problems of *unpredictability*, *probabilities* and *infinities*), how we are then to measure, aggregate and compare them (the problem of *incommensurability*), and how we are to compare the effects on different individuals or populations (the problem of *interpersonal comparisons*). Alluring as it is, consequentialism simply will not do.

### *3.5 Natural law and virtue*

So far I have considered four competing approaches to contemporary secular and religious ethics, each of which seems to capture some important aspects of moral reasoning about organ procurement, but to miss out on others. As we reflect upon each one, we must try to understand its persuasive power as well as its limitations. We may find that we tend to operate more in one mode than another, or that we switch (perhaps incoherently) between approaches depending upon circumstances or the attractiveness of the answers each approach is likely to yield to particular dilemmas. Much more satisfactory, I believe, will be a natural law approach such as has been developed and articulated by many writers within the Catholic tradition and elsewhere.

A natural law morality begins by reflecting upon what it is for the human person to thrive, to be happy, to be fulfilled, what this requires, and so how we are to make sense of the choices people make and the kinds of people they want to become. Applied to our present question a natural law morality will ask: does the organ procurement or transplant proposal aim at securing a genuine good for people? *Prima facie* it does: it seeks to increase someone's participation in the crucial human goods of life and health. But we must be honest with ourselves about the less noble goals that are sometimes sought in such proposals: kudos and profit for health professionals, the lure of technology, the illusory search for indefinite mortal life.

The next question for a natural law ethic is: even if the end is good, are our means of achieving this goal themselves morally reasonable? Organ procurement can, and usually does, seem to satisfy fundamental moral precepts such as showing respect for the dignity of the person and care for particular persons, doing to others what we would want done for ourselves, saving life and promoting health, helping the needy and distressed. But once again we must be careful here, for in our enthusiasm to 'do good' we might forget that we must 'first do no harm'. If organ procurement requires that we kill someone, or carelessly harvest organs from someone we are unsure is dead, then it is homicidal and immoral. Experiments in fœtal tissue transplantation for Parkinson's, Alzheimer's and other degenerative neural diseases, or fœtal bone marrow for blood, metabolic, immunological and malignant diseases almost always involves tissue taken from aborted fœtuses; taking part in such procedures will very likely involve formal or at least immoral material co-operation in the very great evil that is abor-

tion (*cf.* Grisez 1997, pp. 385-88; Keown 1993). Likewise if a proposed organ retrieval procedure requires us to maim people, i.e. to destroy healthy functioning in a live organ donor, or to co-operate in the immoral trade in organs (what John Paul II has called that awful "dispossession or plundering of a body"), we must decline to take any part in it.

A natural law morality will require us, therefore, to seek metaphysically, scientifically and morally defensible procedures for determination of death. So as to avoid any confusion of agendas, those who care for the terminally ill and ultimately determine the withdrawal of treatments and the fact of death should be different people from organ procurement and transplant teams, and make their decisions without concern for the latter's needs (*cf.* Shaw 1993). Ideally determination of death will occur *before* the identification of any likely organ recipient. Removal from ventilation is a medical decision and should therefore be made by the healthcare team after consultation with the family. But even during and after the relative frenzy of organ procurement, it is important for the healthcare team to show respect for the dignity of the person whose body they are now dissecting, never treating it merely as a field for harvest; an operating theatre must never be an abattoir and surgical staff grave-robbers.

There are other moral precepts at issue here too. One is that the relatives and friends of the deceased who is potentially an organ donor should themselves be shown care and respect. It is important that they be given fairly full information, preparation, time and counselling about what is involved in life support, brain death, withdrawal of treatment, organ procurement and transplantation, as well as likely beneficiaries, delays and so, focussing no doubt upon the upsides of organ donation but being honest also about its downsides. The family's veto should be respected, even if the deceased has previously expressed a desire to donate his organs, because it is the family who are the ones who are grieving and might never come to terms with organ harvesting which they oppose; the gift must be theirs too, and so they must be given a real chance to say no and their decision either-way should be supported. If possible the family should be given the opportunity to view the deceased at rest, with the ventilator briefly switched off, before the organs are removed, so that they can see that their loved one has really died; chaplains can help here enormously, perhaps with some kind of 'handing over' ceremony, including special prayers and symbols of the reality of death, the promise of resurrection, and enduring love

and respect in the meantime. There is a very real challenge at the present time to find ways of humanising the practice of organ salvage.

Health professionals themselves commonly report anxiety and distress associated with organ procurement: this may reflect ambivalence about certainty of death or usefulness of organ transplantation, or the difficulty of coming to terms with medical failure —after all, the cadaveric donor seems to have died in the hands of a medical team (Kawamoto 1992, p. 1541; Wolf 1994, p. 971). Medical and nursing staff, as much as grieving relatives, need education, counselling, support. It is also crucial in my view that the organ salvage team and the organ transplant team be distinct so that the care by and of the first is not sacrificed for the interests of the second.

Having considered the goods and norms at stake, a natural law ethicist will next ask: who will be affected and how? Once more, *prima facie* the upsides for the donor and their nearest and dearest, the recipient and their nearest and dearest, the healthcare team, and the community will be considerable and the downsides minimal. But again we must be honest with ourselves. Sometimes the risks or the costs or the alternatives foregone will be so great that we must proceed slowly, if at all.

We must also consider what taking part in organ procurement makes us and says about us. Natural law ethics is not only concerned that people seek what is genuinely good in morally reasonable ways; it also seeks to ensure that people are themselves genuinely good and so (co-) naturally inclined to do good. Again, organ procurement and transplantation can be demonstrations of virtues such as respectfulness and empathy, practical wisdom, courage and patience, moderation and fairness, generosity and mercy, truthfulness and humility. But we must look deep within our hearts to find whether they might also sometimes represent cowardice in the face of human mortality, an intemperate desire for everything that medicine can do at someone else's expense, a false mercy which fails to consider the genuine good of the person and the community.

## 4. Models of organ transfer

How we respond to organ procurement and transplantation depends not only on our moral framework —and the five I have examined briefly today are by no means exhaustive of the variety of these— but

also on how we conceptualize the organ transfer relationship. I will here consider briefly three competing models —organ transfer as transaction; organ transfer as gift; and organ transfer as sharing of life— and conclude by reflecting on how these might pay out for our question of the ethics of xenotransplantation.

The first model is perhaps the most common, especially amongst individualists and consequentialists, though it is unpacked differently by the two. Since organs are, as it were, commodities, the individualist is happy for them to be given, bought, sold or bequeathed, and the consequentialist for them to be redistributed, even by confiscation. But this instrumentalizes people and presumes and encourages an untenable dualist self-concept: the body as mere property of the 'real me' who is not my body (cf. Joralemon 1995; Sharp 1995).

Much Catholic teaching in this area uses instead the gift model, imaging the relationship of organ source and recipient as one of give and take, of (anonymous) donation and grateful reception, and focussing upon free consent (e.g. Vatican *Charter* §90). Yet even this model risks objectifying organs, commodifying the body, so that it is seen not as something that can be sold or confiscated, certainly, but still as something distinct from the giver of the gift. Furthermore, it is hard to see how cadaveric organ donation can be described as a gift unless the deceased actually bequeathed it: our next of kin cannot make gifts on our behalf.

Which leads to my third, and preferred, model of organ transfer: a kind of friendship or communion where one person shares his life with another or one family its life with aother. This too is hinted at in the Pope and the Vatican's documents where they talk not merely of gift-giving but of solidarity, friendship, compassion, a vocation to love to the end (e.g. Vatican *Charter* §§85,90).

This account reinforces a need for greater care that no undue emotional, financial or other pressure is brought to bear upon potential donors or their next of kin, a need for much closer attention to the needs of the grieving families and health professionals such as I have suggested above, and a need for good aftercare for the recipients. It might also imply that there is a case for some kind of ongoing relationship between living donor and recipient or the family of a deceased donor and the recipient, which contrasts with the normally anonymous gift model. And it means that health professionals should see them-

selves not merely as middle-men in a transaction or even as delivery-boys for a gift, but as mediators of a life-giving sacrifice of love.

This shared life model, if it is accepted, has important implications for the question of major organ xenotransplantation, as this clearly *cannot* involve a relationship of solidarity or communion between the organ giver and receiver. Earlier in my paper I noted that some deontological critics of xenotransplantation would seem to be concerned not so much about a lack of reverence for animals as about a lack of reverence for the human beings who would be hybridized with animals by xenotransplantation or perhaps for the proper relationship between animals and human beings. Yet, as I observed, those same writers are probably meat eaters and happily so. There are ontological and psychological differences, however, between using animals for food and using them as parts of us, even if the result for the animal is equally catastrophic. In the first place, meat once eaten is broken down and incorporated fully into the substance of the carnivore, whereas an animal organ, grafted onto a human being, would seem to be both human (in the sense that the human being's soul informs it and it has an organic unity with the rest of the human body) and animal (in the sense that it continues to look non-human and has the genes and teleology of the animal not of a human being). And secondly, we have barely begun to tease out the psychological and social implications of grafting major animal organs to human beings.

Another way of looking at this question would be to ask ourselves why we would oppose animal-human hybridisation *at a genetic level.* Obvious answers about the risks seem to me to limp: there is a deeper abhorrence at stake here, which we might describe as *the indignity concern.* Somehow it demeans the human being to include non-human animal bits in his or her genetic structure, even if this might mean the person could run faster, breathe better or fly through the air. Here I will add a theological argument, though one that is very tentative. For Christians Jesus Christ is the Alpha and the Omega of the entire universe (*Rev* 1:8), the image of the invisible God, the first-born of all creation (*Col* 1:15-29), like us in all things except sin (*Heb* 4:15), the norm or standard of the human race. Albert Moraczewski OP (1994) asks: is Jesus a norm only of our relating and acting, our moral and spiritual lives? Or is he also in some way a norm of our psychosomatic lives? Obviously he is not the latter if we focus merely on his colour, sex, weight or shoe size. But St Paul thought that, without losing our indi-

viduality, our resurrected bodies will in some sense be fashioned after Jesus' glorified body (cf. *Phil* 3:21). By uniting himself to our human nature in the incarnation, the Second Person of the Trinity consecrated and elevated our bodily natures to a dignity and destiny far in excess of that already granted in our creation in the image of God. And that may have implications for how far we ought dare to go in manipulating our bodily natures.

Moraczewski's suggestion, then, is that, if Christ is the perfect exemplar not just of our behaviour but also of our psychosomatic structure, we ought not to do anything that would evolve us into, or generate parallel to us, a distinct species. And for this I have proposed elsewhere some supporting reasons, which I will not rehearse here (Fisher 1996a). Suffice it to say that the basis of our salvation, our universal human respect, and our sense of a common calling and destiny is in large part our shared nature, our being members of one family, one species, with a particular kind of body. And if this is some kind of argument against animal-human hybridization at a genetic level, it might also have some force at the somatic level, at least with respect to more radical forms of xenotransplantation. Major organ transplantation is not merely adding new clothes or a new tool to a person's cupboard: it is much closer to the grafting of two animals.

## 5. Conclusion

My conclusion, then, is that we have much to be cautiously optimistic about when it comes to the brave new world of major organ transplantation and xenotransplantation, but that we must also be optimistically cautious if we are to avoid moral mischief. Much will depend upon our moral perspective in general and the way we image the transplant relationship in particular. In the words of the Church's *Health Care Charter* (1995, §83):

The progress and spread of transplant medicine and surgery nowadays makes possible treatment and cure for many illnesses which, up to a short time ago, could only lead to death or, at best, a painful and limited existence. This "service to life," which the donation and transplant of organs represents, shows its moral value and legitimizes medical practice. There are, however, some conditions which must be observed, particularly those regarding donors and the organs donated and transplanted.

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[Note: There is an abundant bibliography on transplantation, organ transplantation, brain death and related issues: Medline' and 'Bioethicsline' list over 84,000 articles on these matters!]