
Editorial

Sally Woollett

In late 2005, the Hon John Lockhart AO, QC delivered the findings of an independent review of Australia's *Prohibition of Human Cloning Act 2002* and the *Research Involving Human Embryos Act 2002* to the Federal Government. He referred to people's "different and deeply held views" and to the "depth and passion" of submissions. Difference and depth of opinion, as well as ideas about choice, technology and the rights of others, are recurring themes in this bioethics edition of *Issues*.

Hiram Caton at Griffith University opens with a reminder of the role of the science–technology merger and public awareness in the rise of bioethics (p.4). His partly historical account takes us from the first successful organ transplant, performed by Christiaan Barnard in 1967, to the first IVF baby in 1978. In Melbourne in 1980 – in the same year and city as the second IVF birth – the Monash Centre for Bioethics came into being. The centre was headed by Peter Singer, who "propagated the utilitarian belief that replaced sanctity of life ethics by pleasure and pain as the measure of worth or goodness".

Sanctity of life ethics are embedded in the highly controversial issue of euthanasia. Chelsea Pietsch at the Southern Cross Institute of Bioethics says: "A similarity between advocates both for and against euthanasia... is that they seek to show mercy on those who are suffering" (p.8). She describes the difficulties of defining mercy, and believes that its meaning is misconstrued by euthanasia advocates. Her interpretation is one of process rather than outcome.

Human enhancement, sitting opposite euthanasia in some ways, stems partly from advances in medical therapeutics such as pacemakers and cochlear implants. At what point on the therapy–enhancement continuum do these modifications spark an ethics debate?

"As long as we do not harm others we should have the right to any enhancement we want," says John Weckert of Charles Sturt University (p.11). Weckert refers to rigorous education and training as currently accepted means of human enhancement. But in a world where parents can use genetic technologies for the purposes of human enhancement, children may grow up restricted by the earlier choices of their parents.

The therapy–enhancement continuum is similarly applicable to the idea of life extension. Brad Partridge of the University of Queensland explains: "The increases in life expectancy that have occurred during the past century are mostly the result of better sanitation, education, immunisation and developments in treating disease. However, the biggest increases in longevity in the future might come from new technologies that slow, arrest or perhaps even reverse the ageing process" (p.13). Issues of equitable access, overpopulation and sustainability loom large, as does the idea that these developments deny a natural part of human life.

Equity also features in the discussion by Renee Kyle and Susan Dodds on the bioethics of nanotechnology (p.16). These tiny technologies, particularly electroconductive materials, "are increasingly being used in the design and development of bionic devices to achieve better communication between the human body and bionic devices". The authors refer to three of the World Health Organisation's Millennium Development Goals – child health, environmental sustainability and poverty and hunger – to consider whether "the use of the funding for nanobionics is appropriate or fair given competing demands". With the right allocation of resources, nanotechnology can help to address these goals.

Matthew Tieu of the Southern Cross Bioethics Institute introduces the relatively

young field of neuroscience (p.20). Recent cognitive neuroscience, he says, “raises a plethora of ethical issues that have the potential to transform the way we view ourselves as human beings and moral agents”. In line with Weckert’s theme of physical human enhancement Tieu asks: “Should we go beyond restoring function to enhancing all mental functions?” Should technologies such as transcranial magnetic stimulation be used to improve attention span? Neuroimaging technology, which has now moved beyond medical diagnostics to instrumentation such as brain-based lie detection, raises significant mental privacy issues.

The topic of consent is inherent in both clinical and research practice. Paul A. Komesaroff and Malcolm Parker explain that its definition is difficult to pin down (p.24). Competence is key to the idea of consent. This in itself is difficult to determine given its variation with time and situation. Here the authors explain a “functional” approach to competence, similar to Pietsch’s process-over-outcome view, “which emphasises the importance of ensuring the conditions required for free decision-making and then accepts whatever outcomes emerge as a result. This is ethically preferable to an approach that... emphasises the nature of outcomes, basing the assessment of whether someone is competent on the reasonableness of their actual decisions.”

Consider the ethics of consent – by a medical professional – to amputate the limb of a patient with body identity integrity disorder (BIID). “People with BIID are normal individuals who have always felt that some part of them is not truly their own... They feel wrong with their unwanted limb and are usually desperate to become amputees,” explains Christopher Ryan of the University of Sydney (p.31). In 2000 a Scottish surgeon twice amputated the healthy limbs of BIID sufferers, prompting strong ethical and legal opposition. Ryan, however, asks us to consider the parallel and previously controversial condition of gender identity disorder. He also discusses the importance of autonomy and harm minimisation for people with BIID.

Consent and autonomy are not options for the animal subjects of clinical research. Cynthia Burnett of Animals Australia describes the large and growing business of animal

experimentation – mostly in genetic modification and chemical testing programs (p.34). She cites species differences, lack of guarantee of human safety and virtual alternatives as compelling reasons to cease experiments on animals. Guidelines focusing on the well-being of animals used for scientific purposes have this year been released by the National Health and Medical Research Council (NHMRC).

Animals are also used in xenotransplantation – the transfer of animal organs, tissues or cells into humans. This technology is banned in Australia, and thus xenotourism has emerged as patients travel overseas for surgery or treatment. Bob Elliott (p.40) argues against letting technologies, such as the xenotransplanting of pig cells to treat Type 1 diabetes, pass Australia by: “Waiting for other countries to give the all-clear and establish regulatory frameworks, rather than becoming an active partner in developing the appropriate checks and balances on xenotransplantation, will only see the relocation of investment dollars and intellectual property overseas,” he writes.

The NHMRC’s announcement in 2005 that xeno cell treatments would not yet go ahead came in the same year that Lockhart delivered the findings of his review on the 2002 stem cell and cloning legislation. While the NHMRC awaits further medical evidence to support the safety of xenotransplantation, a new generation is learning about the ethics of issues such as stem cell research. Aimee Sanderson of the Australian Stem Cell Centre explains the genesis of the Stem Cell Channel, a visual resource for senior secondary school students and teachers (p.43).

Natalie Seach and colleagues of Monash University (p.46) explore the ethics of stem cell research. “New technologies for [embryonic stem cell] lines are being developed to alleviate the need for embryo destruction,” they explain. Interspecies transfer is also being investigated but is currently not permitted in Australia.

Seach and colleagues’ conclusion on the ethics of stem cell research can be extended to other areas of bioethics, at least in a clinical setting: “The task remains to manage the unquestioned needs of the patients while simultaneously developing the legislative framework for research within sensible and necessary ethical boundaries,” they write.