> came into question. They had to go back to do some tests on the bonding agent. The fixture that was supposed to hold it (the primary mirror) in turned out to be totally unsuitable. And then there were five or six other things in addition to that. Also the roof of the facility, the clean room the mirror was stored in, had leaks . . . So every day you'd call up and try to find out "What's going on?". You would hit another problem. Just one after the other, bang, bang, bang! (p. 299).

Given these problems, it seems to me to be somewhat surprising that, not only has the Hubble space telescope been finally launched, but that it works as well as it does. It is undoubtedly true that a technical fix will be found to the image quality problems in the second-generation imager, and that then, finally, the telescope will revolutionise our understanding of the universe. Robert Smith's book is an extraordinarily well-documented analysis of a high-risk, high-gain, big science project that could have only happened in the United States. This statement is not intended as a criticism. Indeed, without visionary scientists, dedicated engineers, and energetic political lobbyists, an imaginative and innovate pure science project like the Hubble space telescope would have never got past the starting blocks. The climate was right. The ethos that big science is good for industry was already developed. Scientists were respected, and given the liberty to set their own long-term goals for their scientific work. Certainly, Robert Smith's case study of the Hubble space telescope shows that, although the existing mechanisms and organisations may be imperfect for the job, at least things do get done.

Having read the book, I could not help but reflect on the dismal comparison with the Australian experience in space science. Here, current space policy is governed by an economic rationalist viewpoint directed at short-term development of space industry. Space science is seen as an expensive luxury rather than as a tool to focus that development of space industry. Scientists are seen as a cheap renewable resource, whose advice can always be freely obtained, and equally freely ignored. The dead hand of centralised bureaucracy rules supreme to stifle scientific and technical innovation. While that attitude persists, we will never have a viable space program or space industry in Australia. Robert Smith's book should be required reading for all members of the Space Office, but I somehow doubt whether even one of them will ever get round to picking it up.

Michael A. Dopita
The Australian National University

Ethics of New Reproductive Technologies: The Glover Report to the European Commission *by Jonathan Glover and others*
(Northern Illinois University Press, DeKalb, 1989), pp. ix + 159, ISBN 0-87580-147-1.

The phrase 'New Reproductive Technologies' refers to a range of mainly medical techniques aimed at assisting human reproduction. Two techniques are central: artificial insemination, and *in vitro* fertilisation. As the title of the book suggests, this monograph is the result of collaboration by a Working Party established to advise the European Commission on the possibility and desirability of arriving at a common set of European Communty goals and public policies on the ethical use and further development of these technologies.

The introductory chapter of this report notes several prior national inquiries and debates within the European Community, some of which had resulted in legislation. It then clearly sets out how the Working Party chose to interpret what it saw as its 'open-ended remit' from the Commission: *not* to duplicate the work of the national inquiries; *not* to investigate discrepancies between the policies of the members countries. Instead, it decided its most useful contribution would be to uncover the "fundamental questions of value these technologies raise", and suggest ways of thinking about the conflicts of interest that arise between various groups of stakeholders. This clarity of purpose, along with the exceptionally clear and beautiful style of writing, are among this book's chief virtues.

The report is divided into six parts: Introduction; Parents, Donors and Children; Surrogate Motherhood; The Unborn and Research; Deciding Who will be Born; and Summary of Conclusions. The four central parts are divided into several chapters, each of which canvasses the important issues with exemplary economy: An approach to the problems; Donor recruitment and anonymity; Parents and children; The family; Surrogacy in practice; The ethics of surrogacy; Having children and the market economy; The unborn; Research and transplants: the possible benefits; The ethics of research and transplants; Monitoring; Handicap; and Gene therapy, genetic engineering and sex selection.

For at least two reasons, the first chapter, 'An approach to the problems', is the most important, particularly for readers familiar with similarly-intentioned reports coming from Australian inquiries: the National Health and Medical Research Council (NHMRC), and the National Bioethics Consultative Committee (NBCC). First, it is brief but explicit in addressing the two major ways in which public policies in democracies are designed to address conflicts of interest: the utilitarian and the 'rights' approaches. Such a clear discussion is sadly lacking in most of the Australian reports. Second, it frankly notes difficulties with both of these approaches, and concludes with this useful statement of the one it adopts:

> We do not have a prior commitment to the idea that simply summing utilities will give the best answers. But nor do we feel committed to the view that any of the parties has rights which may never be overridden. In this way our approach is somewhere in the middle ground shared by sophisticated versions of utilitarianism and of rights theory, from both of which we have borrowed something. Perhaps one way of mapping that middle ground is to look in detail at such particular conflicts as we are concerned with here. If intuitively acceptable resolutions of them can be found, these may in turn help us to evaluate claims made on behalf of more general theoretical views (pp. 30-31).

This approach is thus more comprehensive than that adopted by the NHMRC in its discussion of the ethics of medical research on *in vitro* fertilisation and embryo transfer (unchanged since 1982) or the NBCC in its 1989 draft report on surrogacy.[1] The latter organisations provide the only institutional expressions of a national perspective on the ethics of medical and health research and services in Australia. They have tended, unquestioningly, to adopt 'rights' language and a concomitant endorsement of methodological individualism in their justificatory arguments for their views. It is thus of interest that the Glover report openly addresses, and then argues against, the frequent invocation of the 'right to procreation' and its supposed derivation from the United Nations *Universal Declaration of Human Rights* or the *European Convention on Human Rights* (pp. 44).

There are other ways in which this report is interesting and to some extent novel. For example, its discussion of changes in the family indicates an awareness of class differences, and of the dialectical or reciprocal relationship between social values and the development of science and technology (p. 54). However, there is at least one contradictory lapse from its early stance of opposition to technological determinism, when it takes a permissive attitude towards the prospective development of 'do-it-yourself' methods of sex selection (p. 145).

Another serious lapse I noted was the contradictory way in which the report dealt, in three different chapters, with the supposed interests of the child who can only be born through the intervention of one or more of these technologies (pp. 74-5, 98, also 129-133). The last discussion, which canvasses the comparison between a handicapped existence and non-existence, is also one example of the most serious omission I found in the report: its neglect of the economic concept of opportunity costs. That concept offers a mechanism for going beyond the more individualistic interests of parents, donors and children which are the major focus for this Working Party, to a consideration of wider societal interests. This neglect can explain why there is no discussion of the ethics of resource allocation, or of global considerations, to be found in this report. There is also mention of the World Health Organisation's criteria for public health policy design, implementation and evaluation, such as those of equity, appropriate technology, and empowerment of minorities.

These are absences found also in most of the NHMRC's and NBCC's thinking to date. Together they indicate the minimalist notion of the State which dominates political thinking and public policy-making in Europe, the USA and Australia today: the most important presumption is individual liberty, with State intervention only to prevent possible harm to other individuals. There is, on the whole, little acceptance of a role for the State in promoting and encouraging a particular common good through policy incentives, or enforcing penalties for research and individual behaviours which erode such a good.

Despite this reservation the Glover Report is an important book, not only because it is a key reference to recent institutional thinking within the European Community. It provides illuminating contrasts between positions taken so far in Australia and the USA on a variety of issues such as commercialistion of surrogacy, access to these technologies by single people, lesbians and homosexuals, and mechanisms for regulation of these techniques. As such, it is a significant addition to the international and national debate on public policy for the new reproductive technologies.

1. National Health and Medical Research Council, *Ethics in Medical Research*, Australian Government Publishing Service, Canberra, 1985; National Bioethics Consultative Committee, *Surrogacy*, Report 1, Draft, September 1989.

Romaine Rutnam
University of Sydney