F W GUEST MEMORIAL LECTURE 1988

THE EDGES OF LIFE

P D G SKEGG*

Francis William Guest, MA, LLM, was the first Professor of Law and the first full-time Dean of the Faculty of Law in the University of Otago, serving from 1959 until his death in 1967. As a memorial to Professor Guest a public lecture is delivered each year upon an aspect of law or some related topic.

Almost exactly thirty years ago, on 12 June 1958, the Academic Board of the University of New Zealand recommended the establishment of a Chair of Law in this University. Two months later the Council of the University of Otago set up the Advisory Committee which in due course recommended the appointment of Professor Guest as this University's first Professor of Law.

For those of us in this University with an interest in law and medicine, or in criminal law, another significant event occurred thirty years ago, for it was also in 1958 that Faber published Professor Glanville Williams' important book *The Sanctity of Life and the Criminal Law.*

Professor Frank Guest and Professor Glanville Williams were born within a few months of each other in 1911, but Professor Williams has already outlived Professor Guest by more than two decades. Professor Williams' continuing stream of academic publications provides a reminder of how much this Faculty, as well as Professor Guest's family and friends, lost in consequence of his premature death.

There are relatively few academic lawyers who, like Professor Guest, come to the teaching of law with a postgraduate degree in philosophy as well as one in law. There are even fewer who bring to the teaching of law, as he did, long experience both as a legal practitioner and as a part-time lecturer in philosophy. Professor Williams has not been a lecturer in philosophy, but he was for some years a Professor of Jurisprudence, and his writings demonstrate that combination of legal and philosophical ability that must have been familiar to Professor Guest's pupils.

In this lecture I propose to examine what Professor Williams had to say, thirty years ago, about some of the legally and ethically relevant edges of human life. I also propose to examine the way in which the debate has developed in the years since Professor Williams' book was published and Professor Guest was appointed to the Chair of Law in this University.

* Professor of Law, University of Otago. This lecture was delivered at the University of Otago on 15 June 1988.

There is one point I would like to stress at the outset. This is that in this lecture I am not primarily concerned with the law and ethics of abortion or of euthanasia. Some of what I have to say may have implications for these issues, but there are a great many other considerations that must be borne in mind when it comes to evaluating the ethics of abortion or euthanasia, or in deciding on the desirability of any particular form of legislation on these matters.

I THE FINAL EDGE

I have two reasons for starting with the final, rather than the initial, edge of life. One is that the important changes that have affected the way in which we regard the final edge of life may well affect the way in which we come to regard the initial edge of life. The other is that this is where Professor Williams' book commenced.

Glanville Williams wrote: "We have lately become aware that death is a process,"[1] and he continued:[2]

> The medical difficulty of deciding whether a person is dead has long been known; what has more recently become appreciated is that the problem lies not merely in the interpretation of symptoms, but in deciding what we mean by death.

Glanville Williams was the first legal writer to make this point, and it continues to be overlooked by the many doctors and lawyers who say that in law a person is dead when a doctor says that the person is dead.

In most cases such a view causes no difficulty, for we are all agreed that if certain facts are established a person is rightly regarded as alive, or dead. For example, if there is an irreversible cessation of heartbeat, breathing, and brain function, we are all agreed that a person is dead. However, the view that in law a person is dead when a doctor says that the person is dead, and the related view that "Death is what and when the doctor says it is",[3] contain an oversimplification which in borderline cases is seriously misleading. They fail to distinguish between the medical "facts" about the patient's condition and the separate issue of whether, given those facts, the patient should be regarded as alive or dead.[4] For example, whether someone is in an irreversible non-cognitive condition is an exclusively medical issue. But whether a patient in this condition is to be regarded as alive or dead is also an ethical and legal issue, on which there is no obligation to defer to the view of the doctor who signs, or refuses to sign, a death certificate.

In his first chapter Glanville Williams mentioned the means that had come to be used to restart a patient's heart, and also the then new practice of stopping a patient's heart for a time during cardiac surgery. He pointed

1 Glanville Williams, *The Sanctity of Life and the Criminal Law* (Faber and Faber, 1958) 17 (cited as Williams, *Sanctity*).
2 Ibid 17-18.
3 Editorial, "The Recognition of Brain Death" (1975) 82 New Zealand Medical Journal 349.
4 I have provided a fuller discussion of this and other matters relating to the final edge of life in *Law, Ethics, and Medicine* (Clarendon Press, Oxford, 1984) ch 9.
5 Williams, *Sanctity* 18.

out that this medical practice raised a novel problem of definition, and set himself the following problem:[5]

> [S]uppose that when a rich man's heart stops, and as the physician is about to attempt to revive him, his heir plunges a dagger into his breast in order to make sure that he is not restored to life. In such an act the murder of a living man, or a mere unlawful interference with a corpse?

Glanville Williams pointed out that the answer to this question depended upon the legal definition of death. He asked whether it was death in law when the heart stopped beating, but observed that if this were so there could be life on earth after death. He then suggested that perhaps death did not occur until "the heart stops beating beyond the known limit of medical recall".[6] On this view, he said, "we cannot tell whether a man is dead or merely in a state of suspended animation, until such time has elapsed as puts revivification out of the question".[7]

Professor Williams' response to the problem he posed is of interest in two ways. One is that he immediately went on to say that the question was at present more of a legal curiosity than an ethical or social problem. He was, after all, writing before cadaveric organ transplantation became a reality and there was pressure to remove organs before they suffered ischaemic damage. The other interesting thing about his response is that he did not discuss the possibility of using the absence of brain function as a criterion of death.

It was not until the year after the publication of Williams' book that two French neurologists described the clinical and electroencephalographic findings in 23 cases of what they called a state beyond coma, which later came to be called brain death.[8] And it was not until ten years after the publication of his book that there appeared the influential "Report of the Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death".[9] That report set out agreed criteria for identifying brain death, and recommended its acceptance as "a new criterion of death".[10]

The two decades since the publication of the Harvard Report have seen the widespread acceptance of its "new criterion of death".[11] In many countries the new approach is reflected in statutory definitions of death;[12] in

6 Idem.

7 Ibid 18-19. For his more recent view, see Glanville Williams, *Textbook of Criminal Law* (2nd ed, 1983) 282 n 6.

8 P Mollaret and M Goulon, "Le Coma Dépassé (Memoire Préliminaire)" (1959) 101 Revue Neurologique 3-15.

9 H K Beecher et al, "A Definition of Irreversible Coma" (1968) 205 Journal of the American Medical Association 337-340.

10 Ibid 337.

11 See eg *A Code of Practice for Transplantation of Cadaveric Organs* (Department of Health, Wellington, 1987) 5-7. In a lecture delivered at the Conference on Biomedical Ethics and the Law, Christchurch, October 1987, Associate Professor J B Morton of the Department of Surgery, Christchurch School of Medicine, said that from 1972 to 1979 he and his colleagues in Christchurch did not remove kidneys until death had occurred according to conventional criteria, but that since 1980 they have removed kidneys from "brain-dead heart-beating cadavers".

12 Eg Human Tissue Act 1982 (Victoria), s 41; Vital Statistics Act 1983 (Manitoba), s 2.

TABLE: FOUR CATEGORIES OF LIFE AND DEATH

	Breathing (Respiration)	Heart-beat (Circulation)	Capacity for consciousness
1 Normal living person	+	+	+
2 Irreversible non-cognitive condition	+	+	−
3 Brain death	(+)	(+)	−
4 Normal corpse	−	−	−

Category 2 patients are sometimes described as having suffered neocortical (or cognitive) death, and include those who are sometimes referred to as being in a persistent vegetative state.

Category 3 patients are unable to breathe spontaneously, but in consequence of the provision of artificial ventilation, respiratory and circulatory activity can continue for a time.

others, including New Zealand,[13] it has found a measure of judicial acceptance.

Although there has been some controversy about the adequacy of the tests used to determine brain death, there has been extraordinarily little controversy about the equation of brain death with the death of a human being. This is in striking contrast to the continuing controversy about the beginning of life. I believe that a major reason for the lack of debate has been the failure to recognise the distinction I have already mentioned, between the medical facts about a patient's condition and the separate issue of whether, given those facts, the patient is rightly regarded as alive, or dead.

The acceptance of brain death as a criterion of death represents a significant shift from past understandings about this edge of life. In the past, if a person had died that person's body could be described as dead.[14] A "beating-heart cadaver" would have been a contradiction in terms. But once brain death has occurred, in a body that is maintained on a ventilator, the body will still be very much alive. The heart will still be pumping blood around the body, and other bodily functions will be continuing as before. These bodies can develop illnesses, such as pneumonia.[15] Once artificial ventilation is withdrawn the heart may continue to beat for a time, and

13 *Police* v *Hodge* (1977) 14 MCD 167. See also *Joe* v *Joe* (1985) 3 NZFLR 675, esp 683. Cf Beattie J, "The Right to Life" [1975] NZLJ 501, 515.

14 Cf Crimes Act 1961, s 150 ("any dead human body"); Human Tissue Act 1964, s 2(1) ("a dead human body").

15 R W Summers et al, "Acute Hepatic Coma Treated by Cross Circulation With Irreversibly Comatose Donor" (1970) 214 Journal of the American Medical Association 2297, 2300 ("The donor developed pneumonia, and ultimately, septicemia.")

spontaneous movements of limbs will sometimes occur.[16] These bodies are not, in the usual sense, dead.[17]

The Harvard Report offered extraordinarily weak arguments for equating brain death with the death of a human being, but some later reports have provided better reasons. However, the reasons offered are often not ones for distinguishing between brain dead patients (Category 3 in the accompanying table) and those who continue to breathe spontaneously but are in an irreversibly non-cognitive condition (Category 2 in the accompanying table). Take for example the most recent report to provide a justification for accepting brain death as a criterion of death. This is the report of the working party established by the British Medical Association to review that association's guidance on euthanasia. The report says it seems that[18]

> by accepting brain death as a criterion for the end of life we have indicated that it is the distinct functions provided by the human brain that make human life of unique ethical importance. Where an individual can no longer have the experiences of a human being and never will again we think that the functions that remain are of no further value to that individual.

I agree with this statement. But it is not simply a reason for regarding brain dead patients as dead. This consideration applies equally to patients who can breathe spontaneously but whose brains are damaged to such an extent that they have lost all capacity for consciousness (Category 2).

A recent New Zealand case has indicated that patients in an irreversible non-cognitive condition are alive for legal purposes,[19] and New Zealand doctors do not in practice certify them as dead.[20] However, the recently arrived Senior Lecturer in Medical Ethics in this University — who is a neurosurgeon as well as an Oxford D Phil in philosophy — has written that such patients are no longer "in any ethically interesting sense, alive".[21] In the coming years there will be pressure to regard such patients as already dead.[22] It is partly for this reason that I favour the enactment of a statutory definition of death. I do not believe that such matters can be satisfactorily resolved in the course of a judicial hearing, or that they should be left to the medical profession to determine.

16 Eg A H Ropper, "Unusual Spontaneous Movements in Brain-Dead Patients" (1984) 34 Neurology 1089-1092, and subsequent letters to the editor, (1985) 35 Neurology 1082 and 1260.

17 See also eg G M Hall et al, "Hypothalamic-Pituitary Function in the 'Brain-Dead' Patient" [1980] 2 Lancet 1259; R C Wetzel et al, "Hemodynamic Responses in Brain Dead Organ Donor Patients" (1985) 64 Anesthesia and Analgesia 125-128.

18 *The Euthanasia Report* (British Medical Association, 1988) para 36. See also paras 37-44.

19 *Joe* v *Joe* (1985) 3 NZFLR 675.

20 Ibid 680.

21 G R Gillet, "Why Let People Die?" (1986) 12 Journal of Medical Ethics 83, 85. For the debate that followed, see J M Stanley, "More Fiddling with the Definition of Death?" (1987) 13 Journal of Medical Ethics 21-22; G R Gillett, "Reply to J M Stanley: Fiddling and Clarity" (1987) 13 Journal of Medical Ethics 23-25.

22 For a powerful statement of the case for regarding such patients as dead, see K G Gervais, *Redefining Death* (Yale University Press, 1987). Cf D Lamb, *Death, Brain Death and Ethics* (Croom Helm, 1985). For Lamb's response to *Redefining Death,* see his review of the book in The Times Higher Education Supplement, 17 July 1987, 21.

In dealing with the final edge of life, we are currently constrained by the fact that for legal purposes we have only two categories: alive or dead. If we have to draw a line somewhere, there is at present much to be said for drawing it between patients who have only lost higher brain function but who continue to breathe spontaneously (Category 2) and brain dead patients (Category 3). However, patients who continue to breathe spontaneously, but whose higher brain function has irreversibly ceased, are very different from most other living persons. Similarly, brain dead bodies that are maintained on ventilators are very different from other corpses. It can be argued that these two categories of patients, or bodies, have more in common with one another than they have with either ordinary living persons, or ordinary corpses. We may in future require a special legal and ethical regime if we are to deal adequately with people, or bodies, in these states.

To summarise, we can say that in terms of the final edge of life there has been a significant shift in the past thirty years. The emphasis is increasingly on the irreversible loss of some or all brain function, rather than on the cessation of heart function. But the situation remains fluid, for now that it is accepted that some people are dead although their bodies are kept alive by artificial ventilation (Category 3), there is likely to be increasing pressure to treat as dead those patients who can breathe spontaneously but whose brains are damaged to such an extent that they can never return to consciousness (Category 2). Others would like us to go further still, and to exclude from the category of living persons those whose brains will never permit more than a very limited degree of cognitive function.

II THE INITIAL EDGE

In *The Sanctity of Life and the Criminal Law,* Professor Williams referred to four stages which were, or had been, of legal significance at the beginning of human life. They were fertilisation, quickening, viability, and birth.

One of these four has never been of significance in New Zealand law. This is quickening, which occurs when a mother first feels the child move within her. This used to be thought the stage at which the fetus became alive, or was animated. Blackstone, in a volume first published in 1765, wrote that "Life . . . begins in contemplation of law as soon as an infant is able to stir in the mother's womb",[23] in other words, at quickening. But by the late eighteenth century it was being pointed out that the stage was not of medical or ethical significance, and that the fetus was very much alive before then. However the stage of quickening remained of some significance in English law until 1837, when the distinction in penalty for abortion before and after quickening[24] was abolished by the Offences

23 1 Bl Com 129.

24 Lord Ellenborough's Act 1803 (43 Geo III c 58), ss 1, 2; Lord Lansdowne's Act 1828 (9 Geo IV c 31), s 13.

against the Person Act.[25] The 1837 Act applied in New Zealand from the beginning of the colonial era.

Since quickening ceased to be regarded as of any ethical or legal significance, increasing attention has been given to the issue of viability. I have not found any evidence that the term was used of fetuses before the nineteenth century.[26] There is still no one agreed definition of viability, but for the most part it is accepted that a fetus is viable if its life could be continued indefinitely outside the womb, whether by natural means or by the use of artificial life-supportive systems.

Viability depends in part on the state of medical technology, and the time of viability has been creeping back in the course of this century. Eventually it may be possible to maintain embryos or fetuses outside a human body for all of the first nine months of life. There would then cease to be any distinction between pre-viable and viable fetuses.

It is not obvious to me why this distinction, which depends so much on the state of medical technology, should be regarded by many as of such ethical significance.[27] However, the distinction between pre-viable and viable fetuses is now important when it comes to the degree of protection afforded to life before birth.[28] It first became important in English law by virtue of the Infant Life (Preservation) Act 1929,[29] but it was probably not of significance in New Zealand until the abortion law reforms of 1977.[30] "Viability" is not expressly mentioned in connection with the grounds for legal abortion,[31] but the concept appears to lie behind the distinction that the legislation draws[32] between the grounds for abortion in the case of a pregnancy of not more than 20 weeks of gestation, and the grounds for abortion after that time.[33]

25 Offences against the Person Act 1837 (7 Will IV & 1 Vict c 85), s 6. See also *R* v *Wycherley* (1838) 8 C & P 262; Sentence of Death (Expectant Mothers) Act 1931 (UK), s 2(5).

26 The *Oxford English Dictionary* (1933 re-issue), Vol 10, 169; Supplement, 306 (2nd ser), does not give any pre-nineteenth century examples of the use of "viability" or "viable" in the English language, and no earlier examples are given in the *Supplement to the Oxford English Dictionary* Vol 4 (1986), 1155.

27 See N Fost, D Chudwin and D Wikler, "The Limited Moral Significance of 'Fetal Viability' " (1980) 10 Hastings Center Report (6) 10-13.

28 The distinction is of considerable importance in the United States, in consequence of the decision of the Supreme Court in *Roe* v *Wade* (1973) 410 US 113.

29 *C* v *S* [1988] QB 135. See also Abortion Act 1967 (UK), s 5(1).

30 However, given the opportunity, a court might have held (and might yet hold) that until a fetus is viable it is not a "child that has not become a human being" for the purpose of s 182 of the Crimes Act 1961. On "child", in that context, see *R* v *Woolnough* [1977] NZLR 508, 516.

31 But note the references to "a fetus believed to be viable" in the Contraception, Sterilisation, and Abortion Act 1977, ss 2, 44(2)(b), and in the Crimes Act 1961, s 182A (inserted by s 3 of the Crimes Amendment Act 1977).

32 See Crimes Act 1961, s 187A(1), (3), (inserted by s 6 of the Crimes Amendment Act 1977).

33 See *Contraception Sterilisation and Abortion in New Zealand: Report of the Royal Commission of Inquiry* (1977), 275-276 (cited as Royal Commission). See also ibid 321, 323, 418.

The stage of birth is, of course, important in law, as it is then that the child acquires legal personality[34] and full legal protection is conferred. New Zealand has a clear statutory provision which makes it clear when a child is first protected by the law of homicide. The Crimes Act provides that:[35]

> A child becomes a human being within the meaning of this Act when it has completely proceeded in a living state from the body of its mother, whether it has breathed or not, whether it has an independent circulation or not, and whether the navel string is severed or not.

Although there are practical reasons why the stage of birth should be of great legal significance, it is not apparent to me why some people think that there is an ethically important distinction between killing a child of 34 weeks' gestation that is still within its mother's body, and killing a child of 34 weeks' gestation that has been born prematurely and is being cared for in a special care baby unit.[36]

I turn now to the very earliest stage of life. The offence of procuring a miscarriage that was provided in our Crimes Acts of 1908 and 1961 was similar to that in English law. Hence it is of interest that Glanville Williams accepted that the English offence applied from the time of fertilisation. In one passage he said:[37]

> At present . . . English law . . . regard[s] any interference with pregnancy, however early it may take place, as criminal, unless for therapeutic reasons. The foetus is a human life to be protected by the criminal law from the moment when the ovum is fertilized.

He also wrote:[38]

> When . . . Parliament extended the law of abortion to cover the embryo before quickening, it made not merely a legal pronouncement but an ethical or metaphysical one, namely that human life has a value from the moment of impregnation.

John Keown's recent studies[39] leave me in no doubt that Glanville Williams was right in thinking that the offence of procuring a miscarriage was intended to protect life from the time of fertilisation.[40]

34 *Dehler* v *Ottawa Civic Hospital* (1979) 101 DLR (3d) 686, 695-699; (1980) 117 DLR (3d) 512; *Medhurst* v *Medhurst* (1984) 9 DLR (4th) 252, 256-257; *C* v *S* [1988] QB 135, 140. See also *Paton* v *BPAS Trustees* [1979] QB 276; *Wall* v *Livingston* [1982] 1 NZLR 734; *A-G (Qld) (ex rel Kerr)* v *T* (1983) 46 ALR 275.

35 Crimes Act 1961, s 159(1).

36 For an attempt to defend the moral significance of birth, see M A Warren, "The Moral Significance of Birth" (1988) 7 Bioethics News (2) 32-44.

37 Williams, *Sanctity* 141. For Professor Williams' later explanation of this passage, see his Letter to the Editor, The Times, 13 April 1983, 11.

38 Williams, *Sanctity* 206. See also ibid 196, 208.

39 See eg I J Keown, " 'Miscarriage': A Medico-Legal Analysis" [1984] Criminal Law Review 604-614.

40 For recent debate in Victoria about the time at which fertilisation can be said to have occurred, and an embryo brought into being, see eg S Buckle and K Dawson, "Individuals and Syngamy" (1988) 7 Bioethics News (3) 15-30.

Glanville Williams was presumably well aware that five to seven days after fertilisation the fertilised ovum, or embryo, commences to implant itself in the uterine wall, and that implantation is usually complete by about twelve days following fertilisation. But there was nothing in his book, or indeed in any publication that I know of from thirty years ago or earlier, to suggest that the stage of implantation was of any legal or ethical importance.[41] However, since 1977 the stage of implantation has undoubtedly been of considerable legal importance in New Zealand.[42]

The definition of abortion provided in the Contraception, Sterilisation, and Abortion Act 1977, and the definition of miscarriage provided in the Crimes Amendment Act 1977, both draw the line at implantation. They provide that "abortion", or "miscarriage", means:[43]

> (a) The destruction or death of an embryo or fetus *after implantation;* or
> (b) The premature expulsion or removal of an embryo or fetus *after implantation,* otherwise than for the purpose of inducing the birth of a fetus believed to be viable or removing a fetus that has died.

The Contraception, Sterilisation, and Abortion Act 1977 also provides that for the purpose of its provisions "contraceptive" means "a substance or device or technique intended to prevent contraception *or implantation*".[44]

The New Zealand Parliament is the only legislature in the English speaking world that has drawn the line at implantation, although the legislatures of West Germany[45] and Liberia[46] have also done so. It might have been expected that the reason for drawing the line at this stage would have been explained to Parliament, and perhaps even been the subject of some debate there. But it was not even mentioned in the parliamentary debates.[47]

The Report of the Royal Commission of Inquiry on Contraception, Sterilisation and Abortion, which preceded the legislation, contained two statements which might have been relied upon as providing reasons for drawing a line at the stage of implantation.[48] The Commission said that:[49]

> While life begins at conception, external proof of pregnancy dates only from implantation . . . . Moreover it is only after implantation has occurred that menstruation is suppressed and the woman herself will know that she is pregnant.

41 The first publication of which I am aware that suggested abortion could take place only after implantation was *Human Reproduction* (British Council of Churches, 1962) 44-45.

42 In 1966, in the first LL B (Hons) research paper that I wrote as a student at the University of Auckland, I suggested that "in view of the widespread use of [IUDs] many judges would, in the highly unlikely event of a case coming before them, probably attempt to restrict the definition of abortion to the termination of pregnancy after implantation".

43 Contraception, Sterilisation, and Abortion Act 1977, s 2 ("abortion"); Crimes Act 1961, s 182A, inserted by s 3 of the Crimes Amendment Act 1977 ("miscarriage"). Emphasis added. See also Contraception, Sterilisation, and Abortion Act 1977, s 44(2) ("miscarriage").

44 Contraception, Sterilisation, and Abortion Act 1977, s 2. Emphasis added.

45 Federal Republic of Germany, Penal Code, s 219d (1974), noted in (1976) 27 International Digest of Health Legislation 562, 565.

46 Liberia, Penal Law, s 16.3.6 (1976), noted in (1979) 30 International Digest of Health Legislation 818.

47 I am grateful to Kensie Baines for examining the relevant volumes of the New Zealand Parliamentary Debates for me.

48 See also Royal Commission, op cit n 33, 269.

49 Ibid 190. See also ibid 269, but see now "Morning after pregnancy test on way", Otago Daily Times, 23 July 1987, 20.

This is an important consideration in countries such as Scotland, where the law on abortion requires proof that the woman was pregnant. But it was not a relevant consideration in New Zealand, as our law did not require proof that the woman was pregnant.[50] The New Zealand law, like the English one,[51] made it an offence to do certain things with intent to procure a miscarriage, whether the woman was pregnant or not.

The other passage in the Report which might explain why the line was drawn at implantation is where the Commission says that:[52]

> From implantation to birth, changes which take place in the unborn child are of a developmental nature only . . . . There is no point between implantation and birth of a biological kind which enables a particular point of time between implantation and birth to be accepted as the one at which the status of the unborn child is changed.

The Commission was here highlighting the difficulty of drawing any line between implantation and birth, but this does not establish that the stage of implantation is itself of any ethical importance.[53] (In fact the passage could well be rewritten with the word "fertilisation" substituted for "implantation", so that, for example, it commenced: "From fertilisation to birth, changes which take place . . . are of a developmental nature only . . .".)

I have little doubt that the major reason why the legislation draws the line at implantation was that by the 1970s intra-uterine devices (IUDs) and other means of preventing implantation were widely used in New Zealand. IUDs became a well-established form of birth control before it was generally known that they operated to prevent implantation, rather than fertilisation. Many people who used IUDs would have resented any suggestion that they were procuring a very early abortion. Even if the Royal Commission or the Government had wished to prevent the use of IUDs and other means of preventing implantation — and there is no reason to believe that they did — there would not have been any likelihood that they would have succeeded in doing so.

Even more surprising than the lack of debate about implantation in 1977 is the way in which the so-called "pro-life" lobby has accepted what is now the status quo. The matter is not discussed in the book on the abortion law debate by Marilyn Pryor,[54] a prominent member of the Society for the Protection of the Unborn Child (SPUC), and that society's pioneering Status of Unborn Children Bill provided that " 'Unborn child' means the embryo or fetus of the biological species *Homo sapiens* at any time after implantation".[55]

50 See ss 183-185 of the Crimes Act 1961, as they were prior to the Crimes Amendment Act 1977.

51 Offences against the Person Act 1861 (UK), s 58.

52 Royal Commission, op cit n 33, 190.

53 But see A J P Kenny, *Reason and Religion: Essays in Philosophical Theology* (Basil Blackwell, 1987) 153-166.

54 M Pryor, *The Right to Live: The Abortion Battle in New Zealand* (Harlen Books, 1986). But see ibid 6, 76-77, 98, 104, 115, 215.

55 Ibid 274.

Thus far we have touched upon the four stages at the beginning of life that Glanville Williams identified thirty years ago as being, or having been, of legal significance. We have also examined implantation, which Glanville Williams did not appear to consider to be of either legal or ethical significance. Glanville Williams did, however, raise the possibility of brain function becoming of legal significance at the beginning of life.[56] This was a particularly interesting suggestion, given that brain death was not then being used as a criterion for the death of a human being.

Now that the irreversible cessation of brain function is regarded as of crucial importance at the end of life, many writers have suggested that the commencement of brain function is of crucial importance at the beginning of life. One of the first writers to take this view in the early 1970s was the Roman Catholic moral theologian Bernard Häring.[57] Drawing on the writings of other Catholics, Häring stated that personal life manifests itself through consciousness, self-reflection, thought and free decision, and that human consciousness "has an indispensable substratum in the cerebral cortex".[58] After reviewing evidence about the development of the cerebral cortex, he wrote:[59]

> I think it can be said that at least before the twenty-fifth to fortieth day [after fertilisation], the embryo cannot yet (with certainty) be considered as a human person; or, to put it differently, that at about that time the embryo becomes a being with all the basic rights of a human person.

Since Häring wrote, many others have also argued that brain function is of crucial importance in relation to commencement of the life of a human person. But reliance on brain function can result in lines being drawn at a great range of places. We will look first at examples from two ends of that spectrum: fourteen days after fertilisation, and some months after birth.

One development in recent years that has required renewed thought about the beginning of life has been the practice of fertilising human ova outside the body, either for the purpose of placing the embryos within the mother's body, or for the purpose of carrying out experiments on them. The latter practice has led to widespread discussion about embryo experimentation, and many reports[60] have recommended that such experimentation should be regulated during the first 14 days of development, and prohibited after that time. One of the reasons given for drawing the line at 14 days is that until this stage there is no sign of even the very beginnings of the nervous system, but that soon after this stage early features of the nervous system begin to appear.

The beginnings of the brain, and brain function, develop gradually in the weeks and months following implantation, and the process is by no

56 Williams, *Sanctity* 210.
57 B Häring, *Medical Ethics* (St Paul Publications, 1972) 81-85.
58 Ibid 82.
59 Ibid 84.
60 See L Walters, "Ethics and New Reproductive Technologies: An International Review of Committee Statements" (1987) 17 Hastings Center Report (3) Special Supplement 3, 4, 6-7.

means completed by birth. Hence reliance on brain function can lead to lines being drawn after, as well as before, birth.

As there is no reason for believing that new-born humans possess a current capacity for thought, or for self-consciousness, or for rational deliberation, some have suggested that newborn children should not be regarded initially as persons. On the basis of what is known of a child's mental capacities in the months following birth, it has been suggested that a human infant should not be regarded as a person for at least three months, and probably twelve months, after birth.[61]

Brain function, it is all too apparent, will not provide any easy answers in relation to the beginning of life. But in recent years the debate has become yet more complicated with the emergence of an explicit concept of "brain birth", by way of analogy with brain death.[62] The analogy is not a particularly satisfactory one, for if a person is brain dead that person has no capacity for consciousness in the future, whereas before brain function commences it can often be said that the embryo has a capacity for consciousness in the future, if left undisturbed in a supportive environment.

However, quite apart from the problems inherent in the concept of brain birth, there are other difficulties about relying on the analogy with the end of life. One is that as there is some disagreement about where the line should be drawn at the end of life, that analogy does not provide an agreed starting point for considering the beginning of life. Another is that it is not easy to compare the gradual process of brain development at the beginning of life with the irreversible cessation of some or all brain function at the end of life.

Despite these difficulties, I believe we should welcome the attempt to provide some consistency in the way we regard the different edges of life. It seems to me that approaches that focus on brain function have more to commend them, conceptually, than the approaches that New Zealand law currently adopts, which give decisive weight to the current state of medical technology, or to the physical location of the embryo, fetus or child.

The Professor of Anatomy in this University, Gareth Jones, is one of the very few writers on medical ethics who is also a neuroanatomist. In consequence, his discussion of fetal brain function in his recent book *Manufacturing Humans* is particularly valuable.[63] Professor Jones is critical of the concept of brain birth, but says that if the concept is adopted he would very tentatively place brain birth at about 24 to 28 weeks of development.[64] He says that to place it much earlier would be to utilize criteria quite unlike those employed for brain death.

Professor Jones writes that if brain birth is to be used as the demarcation point between non-personhood and personhood "we are left with what,

61 For a full discussion, see M Tooley, *Abortion and Infanticide* (Clarendon Press, Oxford, 1983).

62 See eg G B Gertler, "Brain Birth: A Proposal for Defining When a Fetus is Entitled to Human Life Status" (1986) 59 Southern California Law Review 1061-1078.

63 D G Jones, *Manufacturing Humans: The Challenge of the New Reproductive Technologies* (Inter-Varsity Press, 1987) ch 4.

64 Ibid 123.

to most people, is an embarrassingly late point".[65] But 24 to 28 weeks is a much earlier stage than that at which legal personality is currently conferred, and it might well be welcomed by those who wish to permit at least some late abortions but to prohibit infanticide.

I will not be at all surprised if brain function, and perhaps even the concept of brain birth, come to play an important part in the law relating to the initial edge of life. But I come back to the point I made earlier that once brain death has occurred there is no capacity for consciousness in the future, whereas before there is any brain function it can usually be said that the embryo or fetus has the capacity for consciousness in the future.

III Some Other Edges

Up until now we have been considering entities that could in the normal course of events become ordinary human beings, or which were once ordinary human beings. But in his book Professor Williams also discussed the so-called "monsters" to which people sometimes give birth.[66] He asked whether it was not permissible, both morally and legally, so to define a human being as to exclude what he referred to as "the grosser sports of nature".[67] He found support for this view in Blackstone's statement that:[68]

> A monster, which hath not the shape of mankind, but in any part evidently bears the resemblance of the brute creation, hath no inheritable blood, and cannot be heir to any land . . . .

Citing Bracton, who in the thirteenth century wrote the first systematic work on English law, Blackstone went on to say: "This is a very ancient rule in the law of England; and its reason is too obvious, and too shocking, to bear a minute discussion." Blackstone was here alluding to the long-held belief that these "monsters" had been fathered by animals.

Although Blackstone was concerned solely with questions of inheritance, Bracton had expressed himself in more general terms. Glanville Williams favoured the adoption of the view that a monster is not a human being, saying "It is true that they" – that is, Bracton and the other institutional writers – "give or imply the wrong reason for it; but the same rule might be approved for a better reason".[69]

I propose to examine two borderline cases, the first of which has long been with us, but the second of which has only become a possibility in recent years.

The first borderline case is that of anencephalics. These human offspring lack the top of the skull, and the cerebral hemispheres of the brain are either completely missing or else reduced to small masses attached to the base of the skull. There is therefore no possibility of their exercising any higher brain function, and most of them die very soon after birth.

65 Idem.
66 Williams, *Sanctity* 31-35.
67 Ibid 32.
68 2 Bl Com 246.
69 Williams, *Sanctity* 33.

If it were accepted that patients in an irreversible non-cognitive condition were dead for legal purposes, there might be difficulties about regarding anencephalics as living human beings. However, as we have seen, other patients in an irreversible non-cognitive condition are not currently regarded as dead. Even if they were, it would not necessarily follow that anencephalics should be regarded as dead human beings.[70] Most other patients in an irreversible non-cognitive condition were once ordinary human beings, and have now lost the personal identity they once had. But anencephalics, as we have seen, have never had and never will have higher brain function. They have not lost the identity they once had, and hence in that sense died.

I mentioned earlier the difficulty that arises from our having no intermediate category at the end of life. The same applies to anencephalic neonates.[71] They do not fit entirely satisfactorily into any of our legal and ethical categories. But until such time as statute law provides a special legal regime to deal with living bodies which have lost, or will never have, higher brain function, I believe we should treat them as members of our moral and legal community. I understand that they are in fact treated in this way in New Zealand hospitals.

In recent years human semen has often been used to fertilise hamster eggs. This has been done to test the penetrative quality of the spermatozoa, in the course of the investigation of infertility. I am not aware of any discussion of the legal and ethical status of the resultant embryos, which are not able to develop beyond a very early stage, but the practice does raise the question of cross-species fertilisation. This is related to the second borderline case I wish to discuss, which concerns the legal and ethical status that would be conferred on part-human chimeric or "mosaic" hybrids.[72]

Chimeras can be formed by fusing together embryos at an early stage of development: the resultant embryo is then implanted in the host parent, where it can grow to term. By this means it is possible to use genetic material from more than two parents. The first mosaic mouse, which was born in 1965, had four genetic parents.

It is possible to compact early stage embryos from two closely related species, to produce a chimeric or "mosaic" hybrid. This has been done with sheep and goats, and the animal which is born is a patchwork or "mosaic" of the two cell types. These animals – which may be called either shoat, or geep – are different from ordinary hybrids. Some parts of their body are wholly sheep-like, others goat-like. They may, for example, have the head of a sheep and the reproductive organs of a goat. Such a shoat, or geep, would reproduce as a goat, and its offspring would look like any other goat. But which species is represented in which part of the body cannot at present be determined in advance.

Humans are sufficiently close to a number of primates, such as baboons, chimpanzees, and gorillas, to make human/primate hybrids entirely feasible.

70 See M B Green and D Wikler, "Brain Death and Personal Identity" (1980) 9 Philosophy and Public Affairs 105, 128.

71 For a helpful discussion, see A M Capron, "Anencephalic Donors: Separate the Dead from the Dying" (1987) 17 Hastings Center Report (1) 5-9.

72 I am indebted to Dr D P L Green, of the Faculty of Medicine, University of Otago, for information about chimeric hybrids.

An early stage human embryo and an early stage gorilla embryo could be compacted in vitro, and then transferred to one of its mothers or to a host mother. In due course the chimeric or "mosaic" hybrid would be born. In one case much or all of its head might be that of a human, in another that of a gorilla, and in both cases the rest of its body would be a seemingly random mix, part human, part gorilla.

I very much hope that this development is not permitted to occur, but if it did it would be necessary to determine the status of the resultant being. If it had a human head, and human brain function, I suspect it should be regarded as a human being for legal and ethical purposes, even though some other parts of the body would be like those of a gorilla. But if it did not have a human head I would not be inclined to regard it as a human being for legal and ethical purposes, even if, given the opportunity, it would reproduce as a human.

It should now be apparent that difficult questions about the edges of human life arise not merely at the very earliest stages of human development, or at the end of life. Some of the other borderline cases have long been known, although Glanville Williams is one of the few twentieth century legal writers to have discussed them. But scientific developments in the past thirty years have raised a new range of possibilities, which require our ethical deliberation and also, I believe, legal regulation.

IV Concluding Remarks

Since Professor Williams' book was published there have been some important shifts in the focus of debate about the edges of life. The new emphasis on the significance of brain function has found widespread acceptance in relation to the final edge of life, and is finding increasing support in relation to the initial edge of life. However, in neither case does it provide any easy answers as to where lines should be drawn.

Similar changes have taken place in many countries around the world. In some cases changes have been recognised or effected by statute, in others they have resulted from acceptance by medical and legal opinion, without statutory intervention. In New Zealand, as we have seen, we have statutory definitions relating to the beginning of life but we still lack a statutory definition of death. The long-awaited Crimes Bill will provide an opportunity to make good that omission.

It would be a mistake to give the impression that the shifts that have taken place have been brought about as a result of ethical deliberation. Medical developments in the areas of organ transplant surgery, birth control, and in vitro fertilisation, have been a major factor. Ethical justification has often followed, rather than preceded, practice.

At the time of its publication Glanville Williams' book was regarded by some as provocative, even shocking.[73] But in one respect it now seems almost conservative. This is because Glanville Williams took for granted

73 See eg C B Daly, *Morals, Law and Life: An Examination of the book The Sanctity of Life and the Criminal Law* (Clonmore and Reynolds, 1962).

the general principle of the sanctity of human life and simply argued for exceptions to it. He wrote that:[74]

> Even the modern infidel tends to give his full support to the belief that it is our duty to regard all human life as sacred, however disabled or worthless or even repellent the individual may be.

And, perceptively, he continued:[75]

> This feeling, among those who do not subscribe to any religious faith, may sometimes be in fact a legacy of their religious heritage.

Although judges continue to speak of the sanctity of human life,[76] some prominent philosophers have gone well beyond questioning whether the doctrine of the sanctity of human life need have some of the implications claimed for it.[77] In philosophical circles the doctrine of the sanctity of human life is now on the retreat, and the new orthodoxy proclaims that there is nothing of special ethical significance about all human life, as compared with the life of other members of the animal kingdom. If accepted, this approach may have far-reaching effects on our law and ethics. Of course, at this stage these views are not widely held, but the views of prominent philosophers of one generation often become part of the general currency of popular thought a generation or two later.

A year after the publication of Professor Williams' book, Lord Devlin spoke of how a particular institution of marriage had become the basis of English family life, and so part of the structure of English society. He said:[78]

> It has got there because it is Christian, but it remains there because it is built into the house in which we live and could not be removed without bringing it down.

He might well have said the same, thirty years ago, about the belief that there is something uniquely significant, indeed sacred, about human life. But I am far from certain that belief in the sanctity of human life will continue as an infusing principle of our society, in the absence of a reaffirmation of the theological foundations on which it was based.

The next thirty years will require at least as much discussion and decision-making as the last thirty about the edges of human life, and the preservation or termination of life. More important still, both for our medical law and ethics, will be the views adopted about the significance of human life itself.

74 Williams, *Sanctity* 30-31.
75 Ibid 31.
76 Eg *Joe* v *Joe* (1985) 3 NZFLR 675, 684; *R* v *Howe* [1987] AC 417, 444.
77 See eg H Kuhse, *The Sanctity-of-Life Doctrine in Medicine: A Critique* (Clarendon Press, Oxford, 1987).
78 P Devlin, "The Enforcement of Morals" (1959) 45 Proceedings of the British Academy 129, 137, reprinted in P Devlin, *The Enforcement of Morals* (Oxford University Press, 1965) 9.