AT THE BEGINNING OF LIFE

Until recently, controversies about the beginning of human life had been largely restricted (at least in the law) to the context of the law relating to the termination of pregnancy. In Singapore, the boundaries of the law in this area are fundamentally defined by the Termination of Pregnancy Act (Cap 324, 1985 Rev Ed), and of the Penal Code (Cap 224, 2008 Rev Ed). But with the rise of new biomedical technologies such as human embryonic stem cell research, the issue of the beginning of life is receiving new attention. Fresh perspectives on the question are being brought to bear by the advent of new possibilities and procedures in biomedical research. In Singapore, this question was brought into sharp focus by the debate over whether human embryonic stem cell research involving the use of stem cells derived from the destruction of human embryos ought to be permitted, and if so, on what terms, and why. This article examines that debate, focusing in particular on the differing responses from the various and diverse religious and cultural communities that make up Singapore, and examines the process or ways in which the law may find a forward in an area where there is such fundamental disagreement in a plural society, and assesses the possible implications for other similarly plural societies in Asia. The article also considers the implications of this newly re-emergent debate in the context of other new biomedical technologies such as genetic testing and screening, and artificial reproductive technologies.

KAAN Sheung-Hung Terry*
LLB (National University of Singapore), LLM (Harvard);
Advocate & Solicitor (Singapore);
Associate Professor, Faculty of Law, National University of Singapore.

I. Scope

1 The single and restricted objective of this article is to examine some of the different ways in which legislative history and social experience past and present may inform and shape any future debate as to when human life begins in the law – or more specifically, when the

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state of legal personhood commences. No wider scope is intended, for beyond lies the danger of hubris. In recent years, the law has arrived at a universal statutory definition of the end of life for all purposes.[1] But the definition of the beginning of life has proved much more elusive. Different imperatives move the law to such definitions, but despite the fact that life and death might be considered as but obverse aspects of the same phenomenon, they do not necessarily apply at all to each other, or in the same force to these different aspects.

II. Life and death in the law

2 To any casual student of the law, it soon becomes apparent that life and death are two of the most central preoccupations of the law. One of the oldest statutes on our books is the Penal Code,[2] and there in that most exhaustive and compendious of our criminal statutes we find ample references to matters of life and death,[3] and a vastly greater number still in the general body of statutes. The fact of any given mortal existence and of its specific term is of such central importance to the law that, for example, it matters considerably to the law when someone is or is not or is not already *en ventre sa mere* at a given relevant time, even though he may still be unborn.[4]

3 Yet, until relatively recently, the law did not concern itself with inquiries as to *exactly* when life began, and when life ended. Although seeming terms of art such as *en ventre sa mere* and "quick with child"[5] find expression in our statutes, they, like the Snark, melt quite away on closer examination, leaving the legal scholar or the judge none the wiser: the convenient assumption of the law seems to be that these are states of common knowledge that need no definition.

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1 Interpretation Act (Cap 1, 2002 Rev Ed) s 2A.

2 Cap 224, 2008 Rev Ed, originally Ordinance 4 of 1897, and adapted from the Indian Penal Code 1860 (Act No XLV of 1860).

3 A search for terms such as "die", "death", "kill", "deceased", "murder", "homicide" and their cognate expressions in the Penal Code (Cap 224, 2008 Rev Ed) alone returns over 100 references, while a similar search for "life", "alive" and "living" returns about 109 references for the *entire* database of statutes.

4 In the context of Singapore and Malaysia, see, for instance, *Mariyayee v Nadarajan* [1975] 2 MLJ 267; *Re Will and Codicil of Tan Tye, deceased* [2004] 3 SLR(R) 123; and references thereto in statutory provisions which preserve the old English common law principle of treating persons *en ventre sa mere* on the footing that they are lives in being for the purposes of inheritance, *eg*, Conveyancing and Law of Property Act (Cap 61, 1994 Rev Ed) s 69A (repealed), Inheritance (Family Provision) Act (Cap 138, 1985 Rev Ed) s 2, and s 31 of the Civil Law Act (Cap 43, 1999 Rev Ed).

5 See Penal Code (Cap 224, 2008 Rev Ed) ss 312 and 313 and the discussion of these two sections below.

4 In some cases, such as in the case of *en ventre sa mere*, it is clearly a mere legal device which confers on the courts discretionary room for substantive justice in giving effect to the wishes of a testator: the law is not concerned here with an inquiry of when a particular life actually began, but whether or not a particular person (who is subsequently and most undoubtedly alive) is entitled in succession.[6] So it is that for the most part of our legal history, despite the generous references to life and death and all their cognate expressions, the law has been remarkably reticent with defining these terms, and has generally not been concerned to enter into a careful definition of these concepts, contenting itself to leave such inquiries to the realm of the metaphysical.

5 For the most part, this was a pragmatic and practical approach. Given the state of medical science and knowledge, it was generally a straightforward matter to determine whether someone was alive or was dead if one waited sufficiently long enough. The legal inquiry was always in the form of an *ex post facto* inquiry when the fact of existence of the putative life in question was already ascertained: claims by someone claiming to have been *en ventre sa mere* at the relevant time, or actions in relation to a person who eventually succumbs to his injuries a year and a day after being attacked.

6 Substantive justice did not generally require an inquiry into the exact timing of the occurrence of an event. Non-existence, life and death were all conditions which were patent and readily ascertainable, although there might be uncertainty about the precise timing of the transition from one state into another. To put it at its simplest: if one waited long enough, there would be no uncertainty whether life had begun or not[7] – a person would be born, or he would not. Likewise, if one waited long enough, there would be no uncertainty as to whether a person was dead or not. In all these cases, there might be some uncertainty about the timing of the event, but for most intents and purposes, this was not of essence to or the concern of the law.

7 In Singapore, as elsewhere, nothing disturbed this fluid approach until advances in medical knowledge and science began to expose the inadequacies of the existing law. For one, medical technology now enabled physicians to maintain, at least for a time, the physical functions so fundamentally associated with the existence of human life, such as heartbeat and respiration, in persons who were clearly never going to come back from the brink, and who were (as was most delicately and carefully put by the famous Ad Hoc Committee of the Harvard Medical School tasked to investigate the then-novel notion of

6 Most famously, in *Occleston v Fullalove* [1873–74] LR 9 Ch App 147.

7 Subject to the complications canvassed in the discussion following.

brain death) in a state of "irreversible coma".[8] For another, it became possible to give new leases of life to people with end-stage renal failure (or less successfully, other kinds of organ failures) through the transplantation of cadaveric organs from people who had died. For such transplants to be lawful, it was critical for the law to recognise that the organ donors be dead, even if their heartbeat and respiration were artificially maintained, at least for a while beyond their natural cessation, until such time when their organs were harvested for the purposes of transplantation.

8 So for the first time, the exact *timing* of the transition from life into death came into focus as a substantive legal issue. In Singapore, astonishing as it may appear to some in retrospect, there was no clear legal definition of death beyond the general English common law definition of death in terms of cardiovascular death (cessation of heartbeat and respiration) until the introduction of a limited definition of death in terms of brain death for the purposes of human organ transplants with the enactment of the Human Organ Transplant Act in 1987.[9] This, however, specifically defined death in terms of whole brain death only for the purposes of legalising the taking of organs from brain dead patients who might have been maintained on artificial "life support". Controversially, it was not until 1998 that a universal statutory definition of death (in terms of *either* "traditional" cardiovascular death, *or* whole-brain death) was enacted in the form of s 2A of the Interpretation Act.

9 In between, the courts in England and in Singapore have had to grapple with the question of when a person is dead in the common law. The response has been generally to leave this as a finding of fact to the medical profession according to the accepted standards of the day.[10] In recent years, the debate about life and its limits have moved beyond mere timing to issues such as the interface between the principle of personal autonomy of the patient and his or her right to self-determination, and by extension, the right to die, *ie*, the right to determine the timing and modality of one's exit from this life.[11] The common engine driving all these fundamental changes in the last three

8 Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death, "A Definition of Irreversible Coma" Journal of the American Medical Association ("JAMA") 1968 (5 August); 205: 337–340.

9 Human Organ Transplant Act (Cap 131A, 1988 Rev Ed) s 3, since repealed by Act 22 of 1998, which replaced it with a new s 2A of the Interpretation Act (Cap 1, 2002 Rev Ed).

10 See, *eg*, *R v Malcherek* (1981) 73 Cr App R 173 (CA, Crim Div) and *PP v Othman bin Hussain* [1991] SGHC 168. For a full examination and treatment of these issues, see T Kaan, "The End of Life: Defining Death in Singapore" (1992) 4 SAcLJ 310.

11 P S Toh & S Yeo, "Decriminalising Physician-assisted Suicide in Singapore" (2010) 22 SAcLJ 379.

or four decades has been the frenetic pace of advances in medical knowledge and technology, and the new possibilities and quandaries that it raises for those involved in the clinical care of patients, and for patients themselves, at the end of life.

10 The simplest and most accurate definition of life (if a tautologically circular one) is the absence of death. And so *vice versa*. Although it might seem a trite observation that life and death are but obverse aspects of each other, so that the one cannot be defined without also defining the other at least in some measure, it is probably true to say that the pressure to define has not been the same at different ends of the continuum of life. If nothing else, there is not the same pressure and urgency at the beginning of life as is posed by the demands of clinical practice at the end of life. The general proposition may be put forward that in law and in clinical practice, there is generally no urgency (or indeed point or purpose at all) to ascertaining exactly when a life comes into being.[12] Eventually, a child will be born, or he will not. And when he is, the fact of his existence is made patent and incontrovertible, and the issue settled there and then.

11 To this general proposition, there were until recently but just two important classes of exceptions, both well defined by statute. In the next part of this article, these two classes of exceptions will be examined, and their implications for the future definition of the commencement of life discussed.

III. The worth of a life: The historical perspective

12 Lord Macaulay (Thomas Babington Macaulay, First Baron Macaulay), the principal architect and draughtsman of both the Penal Code of India and the Singapore Penal Code, clearly distinguished between the worth of different states and stages of human life. For him, and under the Penal Code,[13] the taking of some kinds of life was culpable homicide, and presumptively the crime of murder, which was and is punishable with death. Yet for the taking of life (undeniably human) at other stages, the penalty was much less – in some cases, to the maximum of three years, *or* a fine, or both. This raises questions about the kind of inferences that may be drawn about the measure of the worth assigned by the law to human life at its various stages.

12 The *en ventre sa mere* doctrine excepting, and the statutory provisions in the Penal Code (Cap 224, 2008 Rev Ed) and the Termination of Pregnancy Act (Cap 324, 1985 Rev Ed) discussed below.

13 Cap 224, 2008 Rev Ed.

13 Sections 312 and 313 of the Penal Code[14] provide as follows:

> Causing miscarriage
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> 312. Subject to the provisions of the Termination of Pregnancy Act (Cap. 324), whoever voluntarily causes a woman with child to miscarry, shall be punished with imprisonment for a term which may extend to 3 years, or with fine, or with both; and if the woman is quick with child, shall be punished with imprisonment for a term which may extend to 7 years, and shall also be liable to fine.
>
> *Explanation*.—A woman who causes herself to miscarry is within the meaning of this section.
>
> Causing miscarriage without woman's consent
>
> 313. Whoever commits the offence defined in section 312, without the consent of the woman, whether the woman is quick with child or not, shall be punished with imprisonment for life, or with imprisonment for a term which may extend to 10 years, and shall also be liable to fine.

14 In modern terms, these two provisions establish the offence of procuring an illegal abortion. Section 312 deals with the situation where the abortion is carried out on a woman with her consent, while s 313 deals with the situation where the abortion is carried out against the will of the pregnant woman. Of the two provisions, s 312 is the straightforward one: abortion is an offence under the Penal Code, whether or not it is done with the consent of the woman, or (as the Explanation makes clear) done by the woman herself.

15 Section 313 is different: in principle, if the intent of the statute was directed only at the protection of women against such unwanted physical interference and violation of her body, there would be no particular need for a specific provision establishing such a crime, as such an act would be covered under the provisions in the Penal Code relating to causing hurt[15] among others if the woman survives the attack, and specifically under s 314 if the woman does not. Clearly, then, the thrust of the section is aimed not only at the protection of the woman against physical interference, hurt or the violation of her bodily integrity but also at the protection of the unborn child within her. In other words, the common thrust of both ss 312 and 313 is for the protection of an unborn child. And unlike the certainty in the situation of a child *en ventre sa mere* in which the claimant must at least demonstrate his entitlement by being born alive, ss 312 and 313 offer protection to an entity that has no assurance of being born alive – only a likelihood, even if it is for most intents and purposes a very high one.[16]

14 Cap 224, 2008 Rev Ed.

15 See Penal Code (Cap 224, 2008 Rev Ed) ss 319–338.

16 In the context of modern medicine, and not necessarily so in Macaulay's day.

16 So the first inference that may be drawn from these two sections is that the law assigns *some* kind of special worth to the unborn child, which sets the unborn child apart in a fundamentally different class from other parts of the woman's body, such as, say, her left thumb or her right eye. The Penal Code[17] does not say why.

17 At the same time, the draughtsman of the Penal Code[18] clearly did not consider such an unborn child to have the same legal status as or being entitled to protection in the same degree as a child who had already emerged into the world and assumed a life of its own independent of that of its mother. Notably, although ss 312 and 313 are grouped together with offences such as culpable homicide, murder, hurt, wrongful restraint, criminal force and assault, kidnapping, abduction, slavery and forced labour, and sexual offences in ch XVI under the broad title of "Offences affecting the human body", ss 312 to 318 are carefully separated out from the heading of "Offences affecting life"[19] and placed under their own special heading of "Causing miscarriage; injuries to unborn children; exposure of infants; and concealment of births".

18 Significantly, neither s 312 nor 313 of the Penal Code[20] uses the word "kill" or any of its cognate expressions, as are freely used in the definition of the crimes grouped under the preceding heading. The reasonable inference might then be that in the eyes of the law, the unborn child, although deserving of some degree of protection, does not qualify as a "life" (in the sense of a life falling to be protected under the previous heading of "Offences against life").

19 But even for the Penal Code,[21] the line between "life" and "not yet life" is not as clean as it may appear: even in the "not yet life" state of the unborn child, the distinction is made between an unborn child that is "quick", and that which is not. So both ss 312 and 316 make a reference to a pregnant woman who is in the state of being "quick with child", and a pregnant mother who is not. In s 312, the distinction is made between the two conditions in order to impose a higher maximum sentence for procuring an abortion on a woman who is quick with child (seven years) instead of the base presumption of three years for a woman who is not. In s 313, the section makes clear that the prescribed maximum penalty applies whether the woman is quick with child, or not.

17 Cap 224, 2008 Rev Ed.
18 Cap 224, 2008 Rev Ed.
19 Which covers the offences of culpable homicide, murder, attempt at suicide, and the very special circumstances of infanticide carried out by a mother suffering from post-natal depression.
20 Cap 224, 2008 Rev Ed.
21 Cap 224, 2008 Rev Ed.

20 The Penal Code[22] does not define what it means by being "quick with child". A further complication is that a third state of existence for an unborn child is mentioned in the Penal Code: that of an unborn child who is "capable of being born alive". So in relation to the offence of child destruction,[23] s 315(2) provides that "evidence that a woman had at any material time been pregnant for a period of 28 weeks or more shall be prima facie evidence that she was at that time pregnant of a child capable of being born alive".

21 The result is that under the Penal Code,[24] there are at least the following states of being for the unborn child: the unborn child *simpliciter* (so to speak); the unborn child of a woman who is "quick with child"; and finally, the unborn child "capable of being born alive". Presumably, it is possible for the last two states to overlap at least in part. While the limits of the state of "capable of being born alive" is lent certainty by the statutory presumption in s 315(2), the state of being "quick with child" is open to interpretation, for there is no juridical definition of what is meant by "quick with child" in the Penal Code or in Singapore or Malaysian jurisprudence.[25]

22 But this uncertainty becomes irrelevant in the face of the fact that, notwithstanding all these complications, the Penal Code[26] is absolutely clear as to when a full human life begins: a child must be born alive into an existence independent of its mother before it is vested with the legal attributes and protections of a full human life.

23 Until then, the taking of that life in being cannot amount to culpable homicide or murder (or any of the offences grouped under the heading of "Offences against life" in ch XVI), but must find its remedy under one of the miscellany of lesser offences grouped under the second heading ("Causing miscarriage; injuries to unborn children; exposure of infants; and concealment of births").

24 This view has the deepest foundations in English common law. So Blackstone makes the point that it is murder to kill an alien or an outlaw "as much it is to kill the most regular-born Englishman" because they are beings "under the king's peace and protection". The caveat is that "the person must be '*a reasonable creature in being, and under the king's peace*' at the time of the killing" [emphasis in original]. An unborn

22 Cap 224, 2008 Rev Ed.
23 See discussion below.
24 Cap 224, 2008 Rev Ed.
25 The Oxford English Dictionary defines "quick" as being "characterized by the presence of life" or "pregnant with a live foetus; spec at a stage of pregnancy when movements of the foetus have been felt", noting that this usage is archaic or rare.
26 Cap 224, 2008 Rev Ed.

child did not qualify:[27] "To kill a child in its mother's womb, is now no murder, but a great misprision; but if the child be born alive, and dieth by reason of the potion or bruises it received in the womb, it seems, by the better opinion, to be murder in such as administered or gaveth them." Until the child is born, he is *not* a person in law.[28]

25 This fundamental distinction is made most clearly in the Penal Code[29] in the provisions of s 315, which provides as follows:

> Child destruction before, at or immediately after birth
>
> 315. (1) Subject to the provisions of the Termination of Pregnancy Act, whoever, with intent to destroy the life of a *child capable of being born alive*, by any wilful act causes a child to die before it has an existence independent of its mother or by such act causes the child to die after its birth, shall, unless such act is immediately necessary to save the life of the mother, be punished with imprisonment for a term not exceeding 10 years, or with fine, or with both. [emphasis added]

26 As a matter of interpretation, it seems reasonable to assume that the "child" variously referred to in the body of s 315(2) is necessarily a "child capable of being born alive" as defined in s 315(2) (from the 28th week of gestation). The offence is framed so that it covers an act that causes "the child to die *after* its birth" [emphasis added], although the reasonable interpretation in this situation seems to be that the act causing the death of the child after its birth must have been committed *before* the occurrence of the live birth and first breath.

27 Lord Hale made clear the ancient common law position:[30]

> If a woman be quick or great with child, if she take, or another give her any potion to make an abortion, or if a man strike her, whereby the child within her is *killed*, it is not murder nor manslaughter by the law of *England*, because it is not yet *in rerum natura*,[31] tho it be a great

27 4 Bl Com 197–198. Blackstone's authority is Sir Edward Coke, in Co Inst, Pt III, ch 7 at p 50: see *Attorney-General's Reference (No 3 of 1994)* [1998] AC 245 at 254.

28 This is not inconsistent with the *en ventre sa mere* doctrine discussed earlier, for in order for the *en ventre sa mere* to operate, a life must have come into being by being born alive – the doctrine merely confirms the personhood of the person born alive *ex post facto* to the putative time of his or her conception for the purposes only of the vesting of property rights. The doctrine of *en ventre sa mere* would have no application if the unborn child was ultimately aborted, miscarried or otherwise failed to achieve live birth.

29 Cap 224, 2008 Rev Ed.

30 1 PC 433 (Hale, *Historia Placitorum Coronae: The History of the Pleas of the Crown* (Emlyn, Stokes & Ingersoll edition) (Philadelphia, 1847) vol 1 at p 433)).

31 In *Re A (Children) (Conjoined Twins: Surgical Separation)* (2001) Fam 147, the English Court of Appeal considered the controversial case involving an application for the surgical separation of the conjoined twins "Mary" and "Jodie". It was not disputed that there was near certainty that "Mary" would die as a result of the surgical separation. The basic premise of the application was that if the conjoined

(*cont'd on the next page*)

> crime, and by the judicial law of *Moses* was punishable with death, nor can it legally be made known, whether it were killed or not … so it is, if after such a child was born alive, and baptized, and after they die of the stroke given to the mother, this is not homicide. [emphasis in original; footnote added]

28 In modern times, this rule has been reaffirmed by the highest courts in cases such as *Attorney-General's Reference (No 3 of 1994)*,[32] where the House of Lords discussed the genesis of this ancient common law principle and affirmed its application in the modern law. This case concerned a pregnant woman who was stabbed by the father of her unborn child. Some 17 days after the incident, a child was subsequently born alive but very prematurely, and died after 121 days. The Reference was brought before the courts by the Attorney-General on the court at first instance directing an acquittal essentially on the grounds that the foetus was not a live person at the time of the stabbing. The question before the House of Lords was whether the perpetrator could be charged with manslaughter or murder. It was held that a while a foetus was not a distinct person separate from its mother, it was "a unique organism",[33] and that the perpetrator was liable to a charge of manslaughter, but not of murder within the English concepts of those offences. At the time of the stabbing, the unborn child was somewhere between the 22nd and 24th week of gestation.[34] The House affirmed the proposition that "[e]xcept under statute an embryo or foetus *in utero* cannot be the victim of a crime of violence. In particular, violence to the foetus which causes its death *in utero* is not a murder", with the comment that "[i]t is unnecessary to look behind this statement to the earlier authorities, for its correctness as a general principle, as distinct from its application to babies expiring in the course of delivery or very shortly thereafter, has never been controverted".[35]

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twins were not separated, both twins would eventually die, whereas if they were, then Jodie might be saved, albeit at the expense of Mary. The application was approved and the twins were separated: Mary died. The Court of Appeal had occasion to consider (at 213) the argument that a medical "monster" (in the teratogenic sense) might not qualify as a "reasonable creature, *in rerum natura*", but quickly rejected that line of argument, firmly holding that Mary and Jodie were indeed full lives in the law.

32 [1998] AC 245.

33 *Attorney General's Reference (No 3 of 1994)* [1998] AC 245 at 257, *per* Lord Mustill.

34 Note that under the Singapore Termination of Pregnancy Act (Cap 234, 1985 Rev Ed), a woman may demand an abortion without having to give any reason so long as the unborn child has not advanced beyond the 24th week of gestation: see the discussion of the Termination of Pregnancy Act above. In this case, a child was born alive that might have been lawfully aborted at the sole discretion of the mother in Singapore, if it could be ascertained that the child was barely in the 22nd week of its gestation.

35 *Attorney-General's Reference (No 3 of 1994)* [1998] AC 245 at 254.

29 In that case, Lord Hope[36] observed that: "There is no doubt also that he would not have been guilty either of the murder or of the manslaughter of the child if the child had been stillborn. Until she had been born alive and acquired a separate existence she could not be the victim of homicide …". So any charge of homicide which might be preferred against the assailant is inchoate until and conditional upon the birth and legal coming into existence. Effectively, the unborn child is retrospectively conferred the protection and rights which a full human person is entitled to in the law *only* if it survives to live birth. A child that dies in the womb of injuries inflicted is not entitled to the same degree of protection.

30 To summarise: to kill an unborn child *in utero* is not homicide because a child, until it is born and has an existence independent of its mother, is not a recognised legal person in its own right before the law. Until then, the child is part of its mother. It is not even homicide if a child is born alive but dies shortly thereafter as a result of unlawful acts inflicted on it (and necessarily also its mother) *before* its birth.[37]

31 The reasonable conclusion may be then that at least for the purposes of the criminal law, a person comes into being as a legal person only when it is born alive, and achieves an existence independent of that of its mother.[38]

IV. The lawful taking of the unborn life

32 The Termination of Pregnancy Act[39] came into force on 27 December 1974. It effectively legalised abortion on demand in Singapore, provided it is carried out pursuant to the Act's regulatory framework. It appears to be modelled on the UK Abortion Act 1967,[40] but with some differences. The Termination of Pregnancy Act makes it clear that a lawful abortion may be procured on the *sole* request of the

36 *Attorney-General's Reference (No 3 of 1994)* [1998] AC 245 at 267.

37 This is the position in Singapore, for the reasons given above in the discussion of ss 312, 313 and 315 of the Singapore Penal Code (Cap 224, 2008 Rev Ed) (especially the explicit wording of s 315), although the present law in England may be different: the finding of the House of Lords for liability in manslaughter in the case of *Attorney-General's Reference (No 3 of 1994)* [1998] AC 245 probably has no application in Singapore as there is no statutory equivalent of s 315 of the Penal Code in England.

38 Note that s 315 of the Penal Code (Cap 224, 2008 Rev Ed) specifies "*has* an existence independent of its mother" [emphasis added], not "having the capacity for an existence independent of its mother".

39 Cap 324, 1985 Rev Ed.

40 Abortion Act 1967 (c 87).

pregnant woman, and no other:[41] thus neither the father of her unborn child, nor any other member of her family, has any say in whether or not the abortion should or should not be carried out. Notably, the Termination of Pregnancy Act does not appear to impose any lower age threshold of consent on the pregnant woman, so it is that even parents of minors are excluded from the decision, which is the woman's, and the woman's alone. The only requirement is that she is a citizen of Singapore (or the wife of one), or the holder (or the wife of one) of a work pass,[42] or simply that she has been in Singapore for at least four months preceding the proposed abortion.[43]

33 As in the UK Abortion Act,[44] the term limit for abortions is set at 24 weeks of gestation, with abortions between 16 and 24 weeks requiring the attention of a specialist surgeon or obstetrician.[45] Abortions can only be carried out in an "approved institution",[46] which is not necessarily a hospital, but may be a medical clinic licensed under the Termination of Pregnancy Act,[47] unless the abortion does not involve surgery and can be procured only through the administration of drugs.[48]

34 But as in the UK Abortion Act,[49] the term limit is lifted completely if the abortion is deemed to be "immediately necessary to save the life or to prevent grave permanent injury to the physical or mental health of the pregnant woman".[50] In theory at least then, a woman may request the termination of her pregnancy (using this phrase most carefully) at any time right up to the moment that she is due to deliver her child alive, if she can demonstrate that the termination of her pregnancy is "immediately necessary", for instance, to "prevent grave permanent injury" to her mental health. The most obvious scenario is the woman who is pregnant as a result of having been raped, or of an incestuous relationship.[51]

41 Termination of Pregnancy Act (Cap 324, 1985 Rev Ed) s 3(1): "… acting on the request of a pregnant woman and with her written consent." See also s 5, which frames the offence of coercion and intimidation in relation to an abortion.

42 Issued under the Employment of Foreign Manpower Act (Cap 91A, 2009 Rev Ed). Curiously, while it mentions work pass holders, it does not include permanent residents as a class.

43 Termination of Pregnancy Act (Cap 324, 1985 Rev Ed) s 3(2).

44 Abortion Act 1967 (c 87).

45 Termination of Pregnancy Act (Cap 324, 1985 Rev Ed) s 4.

46 Termination of Pregnancy Act (Cap 324, 1985 Rev Ed) s 3(2).

47 Termination of Pregnancy Act (Cap 324, 1985 Rev Ed) s 2.

48 Termination of Pregnancy Act (Cap 324, 1985 Rev Ed) s 10.

49 Abortion Act 1967 (c 87).

50 Termination of Pregnancy Act (Cap 324, 1985 Rev Ed) s 4(1)(*a*).

51 But note that in either case, the pregnant woman herself must ask for the abortion, and give her consent in writing.

35 The relevance of these provisions to the present discussion is obvious. Firstly, there is a clear statement that the continuation of the life of the unborn child is in the *absolute* discretion and autonomy of the mother, at least until 24 weeks of gestation. She alone has the right to decide the fate of the developing life within her. She is not required under the Termination of Pregnancy Act[52] to give any reason or justification if she should decide to ask for an abortion.

36 Secondly, from the 24th week of gestation, there is a rebalancing of the weight of the competing interests of the unborn child and that of its mother. The law starts to offer an increased level of protection, but as the discussion of the Penal Code[53] provisions above shows, this level of protection never rises to the point where the law treats the unborn child as a creature *in rerum natura* worthy of protection as a legal person. Moreover, the Termination of Pregnancy Act[54] makes clear that when push comes to shove, the life of the unborn child, regardless of its state of development and the imminent capacity for an independent life, count for nothing as against the *health* (including mental health) of the mother.

37 Even more clearly than the Penal Code,[55] the Termination of Pregnancy Act[56] makes clear that the unborn child is not entitled to the same kind of protection as a person who has emerged into this world into an existence independent of its mother. Apart from requiring women in a more advanced state of pregnancy (beyond 16 weeks) to seek the services of a surgeon or obstetrician with the prescribed qualifications, the Act unlike the Penal Code makes no distinction between any particular stage of development of the foetus between the onset of pregnancy (the Act does not use the word "conception") and abortion, miscarriage or live birth, as the case may be.

38 At its starkest, the balance is not between the life of the unborn child and the life of the mother, but between the life of the unborn child and the *likelihood* of "grave permanent injury to the physical or mental health" of the mother. This established a legal principle which was to have far-reaching influence and consequences in shaping the social and legislative debate on the status of the embryo in research many decades later. That principle is that the continued existence of an unborn child is at the sole and absolute discretion and sufferance of the mother, who may lawfully put an end to its existence at any time within 24 weeks of gestation, for any reason, or for no reason. And even after 24 weeks, the

52 Cap 324, 1985 Rev Ed.
53 Cap 224, 2008 Rev Ed.
54 Cap 324, 1985 Rev Ed.
55 Cap 224, 2008 Rev Ed.
56 Cap 324, 1985 Rev Ed.

physical and mental health of the mother comes first, in the balance of interests between a mother and the life developing within her. In essence, the rule was established that the absolute discretion (up to 24 weeks) of the mother or her physical or mental health (without limit) trumps all.[57]

39 The bluntness of the language[58] and of the thrust of the substantive provisions of the Termination of Pregnancy Act[59] may be unsettling to some, but is best understood in the social context of the time when it was enacted: it is as much a creature of history as is the Penal Code.[60] It was enacted at a time when uncontrolled population expansion was a pressing social, economic and political concern. In 1970, the Total Fertility Rate ("TFR") was 3.07 *per* female. By 2008, the TFR had halved, falling below replacement levels to 1.28, and the earlier concerns were stood on their heads.[61] Notwithstanding this sea-change in demographic trends, however, the provisions of the Act remain substantially untouched into the present time.

40 Beyond the simple objective of legalising abortions, the greatest significance and impact of the Termination of Pregnancy Act[62] may lie in its articulation and defence of the principle of personal autonomy and choice, thus anticipating by many years the full development of the doctrine by decisions such as *Airedale National Health Trust v Bland*[63] ("*Airedale*") which effectively affirmed personal autonomy as the paramount consideration in the care of competent patients, and those who have stated their wishes in advance of becoming incompetent.

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57 There is of course the inconvenient possibility of a legal and moral quandary if a lawful late-term abortion should result in the unexpected live birth of a child instead of the intended induced still-born foetus, but this situation does not appear to have come before the courts.

58 Although unlike its putative English model, it notably avoids the use of the word "abortion", preferring in its place "termination of pregnancy". Here the use of the blunter term might have averted a difficulty. In the case of a multi-foetal pregnancy where a woman is pregnant with more than one foetus, the mother may for economic, social, emotional or medical reasons decide to bring only one of the foetuses or a lesser number of the foetuses in her to term. In such case, a foetal reduction procedure will have to be carried out, *ie*, one or more of the foetuses will have to be aborted. But because the Singapore statute uses the word "termination of pregnancy", it does not seem to cover foetal reduction; arguably, it is a case of all or nothing because a woman is pregnant (whether with one or many), or she is not. The question has not as yet come before the Singapore courts.

59 Cap 324, 1985 Rev Ed.

60 Cap 224, 2008 Rev Ed.

61 The Singapore Department of Statistics, Ministry of Trade and Industry, *Yearbook of Statistics Singapore, 2009* (2009) Table 3.2 ("Vital Rates") at p 24.

62 Cap 324, 1985 Rev Ed.

63 [1993] AC 789.

41 In the wake of the *Airedale* decision[64] came cases such as *St George's Healthcare NHS Trust v S*[65] in which the court was asked specifically to consider the balance of interests between a mother and her unborn child of 36 weeks. The mother had refused the advice of her healthcare givers, and her caregivers took the view that her refusal would thereby put at risk both the lives of the woman and her unborn child. In consequence, her caregivers had her admitted to a mental hospital against her will, and subsequently the woman was delivered of a healthy child by Caesarean section, again against her will. The English Court of Appeal upheld her claims, and affirmed the principle of the primacy of the mother in the balance of interest between her and her unborn child, observing that:[66]

> In our judgment while pregnancy increases the personal responsibilities of a woman it does not diminish her entitlement to decide whether or not to undergo medical treatment. Although human, and protected by the law in a number of different ways set out in the judgment in *In re MB (An Adult: Medical Treatment)* [1997] 2 FCR 541, an unborn child is not a separate person from its mother. Its need for medical assistance does not prevail over her rights. She is entitled not to be forced to submit to an invasion of her body against her will, whether her own life or that of her unborn child depends on it. Her right is not reduced or diminished merely because her decision to exercise it may appear morally repugnant. The declaration in this case involved the removal of the baby from within the body of her mother under physical compulsion. Unless lawfully justified this constituted an infringement of the mother's autonomy. Of themselves the perceived needs of the foetus did not provide the necessary justification.

42 The key statement here is: "Although human, and protected by the law in a number of different ways … an unborn child is not a separate person from its mother." This is an exact echo of the principles laid down in the statutory law in Singapore so many years ago in the Penal Code,[67] and in the Termination of Pregnancy Act.[68] More than a quarter of a century was to elapse after the enactment of the Act before Parliament had cause to revisit (if somewhat obliquely) the issue of the definition of the beginning of life in the law in the provisions of the Human Cloning and Other Prohibited Practices Act.[69] The catalyst for this fresh examination of the issue was prompted by the rise of a discipline which Macaulay, from the distance of more than a century

64 [1993] AC 789.
65 [1999] Fam 26.
66 *St George's Healthcare NHS Trust v S* [1999] Fam 26 at 50.
67 Cap 224, 2008 Rev Ed.
68 Cap 324, 1985 Rev Ed.
69 Cap 131B, 2005 Rev Ed.

and a half ago, could not ever have imagined: human embryonic stem cell research.

V. Fast forward: The human embryonic stem cell debate in Singapore

43 In December 2000, the Bioethics Advisory Committee ("BAC") was appointed by the Cabinet "to examine the ethical, legal and social issues arising from biomedical research and development in Singapore, and to recommend policies to the Ministerial Committee for Life Sciences on those issues".[70] In this, the "fundamental approach" of the BAC "in addressing these issues [was] to balance two ethical commitments: to protect human life, and to advance human life by curing disease".[71] For some years preceding the establishment of the BAC, ethical, legal and social issues arising in relation to medical research had been addressed to the Ministry of Health's National Medical Ethics Committee, but with the decision of the Government to develop the biomedical sector as one of the main engines of the Singapore economy, the need for a separate body dealing with the ethics of biomedical research (as opposed to the ethics of medical or clinical practice) became obvious and pressing.

44 The first project undertaken by the BAC was a report on human cloning, and on the use of human embryos in human stem cell research. Cloning and stem cell research had burst into the public consciousness a few years earlier with the much-publicised announcement of the advent of Dolly the Sheep.[72] At least in theory, it seemed now within the reach of science to clone any mammal through the somatic cell nuclear transfer ("SCNT") technique – presumably including humans.

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70 The author served as a member of the Bioethics Advisory Committee ("BAC") from its establishment in 2001 until 2006. During this term, he was also concurrently the Chair of the BAC's Human Genetics Subcommittee. The author wishes to make clear that the views and opinions expressed in this article are the author's personal views and opinions entirely, and should not to be taken as reflecting that of the BAC.

71 *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) at 1. The full text of all reports (complete with their appendices and the record of all representations received by the BAC) and Consultation Papers released by the BAC are available online from the BAC website <http://www.bioethics-singapore.org> (accessed 15 October 2010).

72 Wilmut *et al*, "Viable offspring derived from foetal and adult mammalian cells" Nature 1997 (27 February); 385(6619): 810–813.

45 In embarking on this project, the BAC acknowledged that:[73]

> [E]thical questions predominate, and are the fundamental matters to be grappled with. On the critical ethical issues, social norms, theological and philosophical perspectives form important considerations. In turn, the stance taken on these ethical concerns would shape the ambit of and create the foundation for the necessary laws and regulations.

46 It noted that there was "no comprehensive legal framework in Singapore governing research on human embryos", although there were existing guidelines for clinics and hospitals in Singapore providing assisted reproductive services (in essence, fertility and assisted reproductive technology, or "ART", treatments) to married couples who had difficulties in having a child. While the guidelines[74] were appropriate and adequate for the operation and governance of such hospitals and clinics in the provision of a clinical service, they did not really address the quite different issues raised by the proposed application of human embryos for human embryonic research.

47 The relevance of fertility clinics, of course, is that they are the source of most "supernumerary" (surplus) human embryos that are potentially available to researchers. *In vitro* fertilisation procedures commonly require the fertilisation of a far greater number of eggs than will be ultimately implanted in the womb: this is in part because unfertilised eggs cannot be reliably frozen without affecting their integrity, whereas experience has shown that embryos can. The result is that fertility clinics around the world find themselves saddled with far more human embryos than they will ever implant.[75]

48 The difficulty of course is that once it is fertilised, an egg is no longer an egg, but an embryo. In genetic terms, an embryo is chromosomally diploid, possessing a full complement of genes derived from its parents, as opposed to the chromosomally haploid gametes (eggs or sperm). If implanted in the womb, that embryo has the

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73 *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) at 8 (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

74 The then "Guidelines for Private Healthcare Institutions Providing Assisted Reproductive Services" – these guidelines had regulatory force as they were issued pursuant to statutory authority under the Private Hospitals and Medical Clinics Act (Cap 248, 1999 Rev Ed). Under this Act and the regulations made pursuant to it, hospitals and clinics intending to carry out *in vitro* fertilisation procedures were required to obtain a licence: compliance with the guidelines formed a term of the licence.

75 See the explanation and recommendations in ch 10 (entitled "The Freezing and Storage of Human Semen, Eggs and Embryos") of the Warnock Report of 1984, *Report of the Committee of Inquiry into Human Fertilisation and Embryology* (London: HMSO, 1988) (Cmnd 9314).

potential to develop into a foetus, and ultimately be born alive as a full human being. The essential question, then, is what is ethics, law and society to make of the status of such an embryo – even if it will never be implanted?

49 The choices for the ultimate fate of such supernumerary embryos are stark; they cannot be stored in cryogenic deep freeze indefinitely, to do so is merely to postpone the moral and legal decision. Ultimately they will have to be used by being implanted, destroyed or otherwise discarded. Instead of destroying them outright, why not donate them to science? For the biomedical researcher, the main attraction of human embryos is their attribute of *pluripotency*: the ability of the cell or cells making up the embryo to grow and divide and differentiate into other kinds of cells. At its earliest stages, when it comprises just one or a small number of cells, the embryonic cell or cells – called stem cells – is or are effectively and necessarily *totipotent*: it has the ability, as it must if it is to grow into a full human being, to make from these first or first few stem cells all the myriad other kinds of differentiated or specialised cells that will eventually make up the adult human body.

50 The main difficulty, from the religious, ethical and social point of view, is that the embryo has generally to be destroyed in order to carry out human embryonic stem cell research, particularly if the objective is to produce lines of *pluripotent* human stem cells through the SCNT procedure.[76]

51 The basic questions which the BAC wanted to put to the Singapore public for input were: (a) should whole reproductive human cloning be permitted; (b) should human stem cell research be permitted; and more specifically (c) should the use of human embryos for human embryonic stem cell research be permitted, on the footing that the use of such human embryos in such research would involve

76 For a lay primer to the science of human embryonic stem cells, see Appendix E of the *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)), particularly the Commissioned Paper by A Bongso, "Human Embryonic Stem Cells – Science & Ethics" at E3-1 to E3-19. The National Institute of Health's 17-page primer entitled *Stem Cell Basics* available in PDF format online is a particularly good lay person's guide to stem cell technology: <http://stemcells.nih.gov/staticresources/info/basics/StemCellBasics.pdf> (accessed 15 October 2010). A fuller treatment of the same themes may be had from the National Institute of Health, *Regenerative Medicine 2006*, a fuller and authoritative collection of articles with many clear and useful illustrations detailing the science of human embryonic stem cell research, how they are derived, and their promise in the field of regenerative medicine, also available online at <http://stemcells.nih.gov/info/scireport/2006report.htm> (accessed 15 October 2010).

their destruction; and finally (d) if the creation of human embryos through the SCNT procedure or "therapeutic cloning" as was used for Dolly the Sheep should be permitted for the purposes of research, again on the footing that such artificially created embryos would be destroyed for the purposes of such research.

52 On 9 November 2001, a paper entitled "Human Stem Cell Research Consultation Paper" ("the Consultation Paper")[77] was released by the BAC to 39 "religious and professional organisations" with an accompanying request for their views or representations in writing on the matters set out in the paper. These organisations were also invited to attend "dialogue sessions" with the BAC; 25 of them also sent in written submissions giving their views on the Consultation Paper. The Consultation Paper was also subsequently made available to the public at large on the BAC's website amidst much publicity coverage in the media following its release at several press conferences.[78]

53 The recommendations the BAC advanced in the Consultation Paper on each of these questions were a clear "no" to the first question on permitting whole reproductive cloning; a qualified "yes" to the second question about allowing human stem cell research generally; and a highly restricted "yes" to the final two questions as to whether human embryos should be used in research, and if so, if they might be artificially brought into being for research purposes.

54 The first question was not difficult to answer, nor was it controversial: the BAC and all who sent in their representations in response to the paper made clear their objection to what appeared to be universally a repugnant proposition. On the second question, there was generally agreement that human stem cell research should be permitted on principle, but there was deep divide between those who would draw the line at using adult stem cells derived only from consenting competent adults or from umbilical cord blood, and those who would allow such research to extend to the use of human embryos, or to material derived from the destruction of human embryos. This

77 The Bioethics Advisory Committee of Singapore, "Human Stem Cell Research Consultation Paper" (8 November 2001) (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)). The Consultation Paper is also published as Annex F to the *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

78 *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) at 12–13 (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

essentially focused and narrowed the debate into one on the status of the embryo.

55 The BAC did not underestimate the immensity of the task before them in defending its recommendations, particularly in relation to allowing human embryos to be used (and destroyed) in biomedical research, and to allowing through "therapeutic cloning" the creation of embryos purpose-made for research:[79]

> It is recognised that that the fundamental ethical concern of human stem cell research is that of deriving ES cells from human embryos. As mentioned earlier, there are two important ethical commitments: to protect human life and to advance human life by curing disease.
>
> Some argue that the human embryo requires no particular moral attention whatsoever. However, most would agree that human embryos deserve respect as a form of human life; disagreements arise regarding both what form such respect should take and what level of protection is required at different stages of embryonic development.
>
> Within the latter view, some hold that, as a moral principle, the use of any embryo for research purposes is unethical and unacceptable on the grounds that an embryo should be accorded full human status from the moment of its creation. Others accept the special status of an embryo as a potential human being, yet hold that the respect due to the embryo increases as it develops and that this respect, in the early stages in particular, may properly be weighed against the potential benefits arising from the proposed research. They recognise an essential need for careful regulation of the proposed research, with clear principles to govern the development and use of the techniques of such research together with barriers that must not be crossed, some limits fixed, beyond which such research must not be allowed to go.

56 On the point of the use of surplus or supernumerary human embryos, the BAC acknowledged that it:[80]

> … recognises that ethical opinion on the use of embryos no longer needed for infertility treatment as a source of stem cells is divided. The BAC does not agree with the view that the human embryo deserves no particular moral attention whatsoever. However, while the BAC recognises the special status of an embryo as a potential human being, it accepts that it is justified to use early embryos, not more than 14 days old, for serious research, which may benefit others.

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79 The Bioethics Advisory Committee of Singapore, "Human Stem Cell Research Consultation Paper" (8 November 2001) at 3–4 (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

80 The Bioethics Advisory Committee of Singapore, "Human Stem Cell Research Consultation Paper" (8 November 2001) at 5 (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

57 Of greater concern, however, was the creation of purpose-made human embryos through "therapeutic cloning" procedures or SCNT for use in research:[81]

> The BAC is also concerned with what has been termed human 'therapeutic cloning'. This is research which involves the creation of embryos by cell nuclear transfer. Human therapeutic cloning has the potential of creating a human embryo for reproductive cloning. This potential must not be allowed to be realised under any circumstances. … Provided that the necessity of using embryos created by cell nuclear transfer is clearly demonstrated, on a case to case basis, with proper consent of the donors and under appropriate governmental oversight, the BAC is prepared to support it. Again, the embryos used must not be more than 14 days old.

58 At this point, it may be appropriate to observe that the BAC's rationale for its insistence on the 14-day rule, quite apart from following the practice and statutory precedent set by the UK Human Fertilisation and Embryology Act 1990,[82] appears to be based on the idea that there is no possibility of the embryo or foetus (if the embryo is implanted) having the capacity to feel or experience pain at that stage:[83]

> Human embryos which are less than 14 days old have no pain or sentience since only at the 14th day does a primitive streak appear and develop into the nervous system.

59 We shall return to a discussion of this rationale later in this article.

60 Ultimately, the views expressed by the BAC (on the use of surplus or supernumerary human embryos for human embryonic stem cell research, and for allowing under very restricted circumstances, the creation of purpose-made human embryos for research) were carried forward into the final recommendations when the BAC published the Cloning and Stem Cell Report.[84] It is beyond the ambit of this article to examine all or even a broad selection of the issues canvassed by the BAC in its Consultation Paper and its Cloning and Stem Cell Report, but one

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81 The Bioethics Advisory Committee of Singapore, "Human Stem Cell Research Consultation Paper" (8 November 2001) at 5–6 (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

82 Human Fertilisation and Embryology Act 1990 (c 37), most recently as amended by c 22 of 2008.

83 The Bioethics Advisory Committee of Singapore, "Human Stem Cell Research Consultation Paper" (8 November 2001) at 4 (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

84 *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) ch 7, at 21–35 (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

specific inquiry, which emerged into prominence in the debate that ensued is of direct relevance: the question of the beginning of life.

VI. On the beginning of life: Community responses

61 From the perspective of the international comparative scholar in the field of bioethics, the recommendations set out by the BAC in its Cloning and Stem Cell Report are generally unremarkable: they follow in essence the rules and practice that are already in place in the UK. The enduring legacy of the Cloning and Stem Cell Report may lie not in the recommendations themselves, but in the verbatim record of the written representations received by the BAC, which are published in the Annexes to the report. It is this record which provides the comparative scholar a unique and valuable insight into the responses of a very plural Asian society with many cultures, ethic groups, languages and dialects, and religions to a most fundamental question that cuts across all divisions: when does life begin?[85]

62 The BAC received submissions[86] from representatives of all the major faiths in Singapore. Interestingly, there were no submissions received from any organisation on an ethnic or cultural platform (*eg*, Chinese dialect clan associations), as opposed to a religious or professional one.

63 Not surprisingly, the submission from representatives of the Roman Catholic Church[87] made clear their absolute objection in the strongest terms to the destruction of the embryo for research:[88]

85 The written submissions received by the Bioethics Advisory Committee in response to the "Human Stem Cell Research Consultation Paper" (8 November 2001) are set at in Annex G of the *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

86 In some cases submitted to the Bioethics Advisory Committee through the Inter-Religious Organisation of Singapore.

87 These included submissions from the Consultor of the Pontifical Council for Inter-religious Dialogue and Catholic Archdiocesan Representative to the Inter-Religious Organisation of Singapore (at G-3-10 to G-3-11 of Annex G of the *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)) and the Catholic Medical Guild of Singapore (at G-3-34 to G-3-62).

88 From "a statement published in the *Catholic News* dated 28th October 2001", a copy of which was attached to and referred to in the written submission of Sr Theresa Seow, the Consultor of the Pontifical Council for Inter-religious Dialogue and Catholic Archdiocesan Representative to the Inter-Religious Organisation of Singapore, at G-3-11 of Annex G of the *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning:*

(*cont'd on the next page*)

> On Aug 25 last year [2000], the Church issued a new document entitled, Declaration on the Production and the Scientific and Therapeutic Use of Human Embryonic Stem-cells[89] which again stated that it is morally wrong to produce or use living human embryos for the preparation of embryonic stem-cells for the following reasons:
>
> > 1. The human embryo, from the moment of conception, has a right to its own life, and therefore every intervention which is not in favour of the embryo is an act which violates that right.
>
> [footnote added]

64 From the perspective of the Catholic Church, life began from the very moment of conception. For the Church, therefore, the embryo acquired from conception the full moral rights and attributes of every human being – the doctrine of "immediate hominisation"[90],[91]:

> On the basis of a complete biological analysis, the living human embryo is – from the moment of the union of the gametes – a human subject with a well defined identity, which from that point begins its own coordinated, continuous and gradual development, such that at no later stage can it be considered as a simple mass of cells … [quoting Professor Jerome Lejeune]: 'Life has a very, very long history but each individual has a very neat beginning, the moment of its conception'. The two moments of real discontinuity in the life of an individual are to be found in the acts of fertilization and of death.
>
> …
>
> The human being is to be respected and treated as a person from the moment of conception; and therefore from that same moment his rights as a person must be recognized, among which in the first place is the inviolable right of every innocent human being to life. … Therefore, the ablation of the inner cell mass (ICM)[92] of the blastocyst, which critically and irremediably damages the human embryo curtailing its development, and is a gravely immoral act.

A Report from the Bioethics Advisory Committee, Singapore (21 June 2002) (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

89 The Pontifical Academy for Life of the Holy See, *Declaration on the Production and the Scientific and Therapeutic Use of Human Embryonic Stem Cells* (25 August 2000).

90 See Haldane & Lee, "Aquinas on Human Ensoulment, Abortion and the Value of Life" Philosophy 2003; 78: 255–277.

91 The Catholic Medical Guild of Singapore (at G-3-35 and G-3-36 of Annex G of the *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002)) (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

92 The critical step in the process of deriving stem cells from an intact human embryo in which the growing ball of pluripotent cells (the ICM) within the hollow blastocyst is removed from the outer "shell" of cells.

> …
>
> In the same vein, every type of therapeutic cloning, which implies producing human embryos and then destroying them in order to obtain stem cells, is immoral.
>
> …
>
> We … conclude by stating our unequivocal objection to research that entails the destruction of human life at any stage, because we know that at the end of our lives, we will have to account for what we have done to others at the beginning of theirs.
>
> [footnote added]

65 The responses from other Christian churches outside the Roman Catholic tradition were similar. The Life Sciences Study Group appointed by the National Council of Churches, Singapore ("NCCS"), representing "the mainline Protestant denominations and other member churches and Christian organisations in Singapore", "to study the ethical issues related to the life sciences"[93] expressed the following views:[94]

> The doctrine of the Incarnation tells us that the Second Person of the Trinity was incarnated in human flesh at conception. At conception, the zygote is already the incarnation of the Eternal Son of God, thereby giving credence to the view that human life begins at birth.
>
> …
>
> We affirm that the embryo from conception is already a human person and are not persuaded that it undergoes any metaphysical change after the fourteenth day that renders a non-human pre-embryo into a human embryo.

66 In short, it was clear from the submissions that there was absolute objection to the idea of using human embryos for research, or to creating purpose-made human embryos through SCNT to be destroyed for the same end. Both Catholic and Protestant groups alike made clear that they did not object to human embryonic research *per se*, and urged instead that research should be conducted on adult stem cells derived from competent consenting adults or from umbilical cord blood, as neither source would involve the destruction of human life.

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93 At G-3-63 and G-3-64 of Annex G of the *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

94 At G-3-64 of Annex G of the *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

67 Here it may be useful to present some statistics about the distribution of religious belief amongst Singaporeans. The most recent data for this is from the Singapore Census of 2000 (which coincidentally was carried out in the year just before the release of the Consultation Paper):[95]

Resident Population 15 years and Older By Religion	% in 1980	% in 2000
Buddhism	27.0	42.5
Taoism	30.0	8.5
Islam	15.7	14.9
Christianity	10.1	14.6
Hinduism	3.6	4.0
Other Religions	0.5	0.6
No Religion	13.0	14.8
	100	100

68 Taken together, the two traditional religions of the majority Chinese population in Singapore account for more than half of the population of 15 years and above, with a dramatic shift between 1980 and 2000 in favour of Buddhism at the expense of Taoism. Islam was the third most predominant religion at about 14.9%, with Christianity coming fourth at 14.6%. In the category of Christians, the census data does not distinguish between Roman Catholics and Protestants or any other denominations.

69 The exact position of the Taoists is not entirely clear from the brief two-page statement in Chinese submitted on behalf of the Taoist Mission, Singapore. The statement does, however, say in the last paragraph (in translation) that "Taoism is not supportive of research that goes against the teaching of Taoism, that goes against nature, and that involves the killing of another life, eg using embryos for research".[96] The inference from this statement is that the Taoist view is that embryos are human lives, but this point is not elaborated upon in the statement.

95 Singapore Department of Statistics, "Singapore Census of Population, 2000 Advance Data Release No 2: Religion" (November 2000) at <http://www.singstat.gov.sg/pubn/papers/people/c2000adr-religion.pdf> (accessed 15 October 2010).

96 At G-3-5, in translation at G-3-9, of Annex G of the *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

Does this mean, for example, that Taoists are also opposed to fertility treatment procedures that necessarily result in a surplus of embryos?

70 The only submission received from a Buddhist group, the Singapore Buddhist Federation, was even shorter. In a letter of a single page, the Federation wrote to express the view that it "would support research on human stem cell that will benefit mankind as a result, but are definitely against human cloning" (it did not specify whether the objection related to whole reproductive cloning, or therapeutic cloning, or to both).[97] It was effectively silent on the issue of the beginning of life from the Buddhist perspective.

71 The submission on behalf of Muslims was submitted by the Majlis Ugama Islam Singapura (the Islamic Religious Council of Singapore). The Majlis is a statutory body constituted under the Administration of Muslim Law Act,[98] and has the statutory authority and responsibility, *inter alia*, for advising "the President of Singapore in matters relating to the Muslim religion in Singapore"; administering "matters relating to the Muslim religion and Muslims in Singapore"; and administering "all mosques and Muslim religious schools in Singapore".[99] The request by the BAC to the Majlis for feedback was referred to the Majlis's Legal (*Fatwa*) Committee. The Fatwa Committee ruled that:[100]

> … the opinion of the Bioethics Advisory Committee to use stem cells from embryos below 14 days old for the purpose of research, which will benefit mankind, is allowed in Islam. This is with the condition it is not misused for the purpose of human reproductive cloning, which would result in contamination of progeny and the loss of human dignity.

72 The Majlis included with its submission the text and the English translation of the actual ruling of the Fatwa Committee.[101] Most interestingly, the Fatwa Committee directly addressed in its ruling the

97 At G-3-33 of Annex G of the *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

98 Cap 3, 2009 Rev Ed.

99 Administration of Muslim Law Act (Cap 3, 2009 Rev Ed) s 3(2).

100 The submission of the Majlis Ugama Islam Singapura to the Bioethics Advisory Committee, at G-3-71 of Annex G of the *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

101 At G-3-72 to G-3-77 of Annex G of the *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

specific question of the beginning of life and of the status of the embryo in Islamic law:[102]

> The Fatwa Committee is of the view that Islam does not place any judgement on an embryo, which is not fully formed. An embryo is only considered as a human life after it is 4 months old as in Islam, it is believed that a soul is introduced into the embryo when it is 4 months old. This is the view of most jurists based on the *hadith* (Tradition) narrated by Abdullah bin Mas'ud which means:
>
> > Verily the creation of each one of you is brought together in his mother's belly for forty days in the form of a seed, then he is a clot of blood for a like period, then a morsel of flesh for a like period, then is sent to him the angel who blows the breath of life into him and who is commanded about four matters: to write down his means of livelihood, his life span, his actions, and whether happy or unhappy …
> >
> > Related by Bukhari and Muslim.

73 So from the Muslim perspective, the answer is clear: human life does not begin at conception. Support for the stand that human life does not begin at conception came also from the submission offered on behalf of the Jewish Welfare Board, which offered as part of its submission an article entitled "Stem Cell Research in Jewish Law" by Daniel Eisenberg.[103] Dr Eisenberg is careful to note that there are many strands and traditions in the broader community of the Jewish faith, but observes that on the authority of some sources there "is reason to argue that prior to forty days gestation, the foetus lacks 'humanity'", and that therefore "a foetus prior to forty days gestation is not considered to be an actual person and [that] we might extrapolate that destruction of such a foetus is not forbidden by Jewish law". He adds, however, that other sources disagree, in holding that an embryo is protected by the prohibition against murder.[104]

74 Although the Jewish tradition of 40 days may sound very far apart from the immediate hominisation view expressed by the Roman Catholic Church, it has been argued that in fact theological opinion

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102 The official English translation by the Majlis at G-3-76 of Annex G of the *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

103 At G-3-20 to G-3-32 of Annex G of the *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

104 At G-3-25 of Annex G of the *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

within the Roman Catholic Church has not always hewn to the current view that human life begins at conception. As observed by the House of Commons Select Committee on Science and Technology:[105]

> This position [that the human embryo is a full human life from the moment of conception] dates from 1869 when Pope Pius IX abolished the distinction between early and late abortions. Previously, St Thomas Aquinas favoured a later ensoulment: at 40 days for the male foetus and 90 days for the female foetus. Advocates of this view are not necessarily associated directly with the Catholic Church.[106] …
>
> 26. The gradualist approach is favoured, among religious perspectives, by the Church of England and the Jewish faith. Dr Michael Nazir-Ali, the Bishop of Rochester, argued that the gradual emergence of a person was often the approach in Christian tradition until 1869. It draws on distinctions between the unformed and formed foetus in the definition of homicide. Augustine wrote:
>
> > If what is brought forth is unformed (*informe*) but at this stage some sort of living, shapeless thing (*informiter*), then the law of homicide would not apply, for it could not be said that there was a living soul in that body, for it lacks all sense, if it be such as not yet formed (*nondum formata*) and therefore not yet endowed with its senses.
>
> [footnote added]

75 At the end of the day, the BAC was left in a situation where it had to work out a position in the face of insurmountably contradictory but deeply held convictions and perspectives.

VII. The BAC response and the 14-day rule

76 In its Cloning and Stem Cell Report, the BAC acknowledged the diversity of views on the status of the human embryo. It observed that at one end of the spectrum, there was the immediate hominisation doctrine which took the position that human life began from the

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105 The House of Commons Select Committee on Science and Technology, *Fifth Report* (Session 2004–2005: 14 March 2005) ch 3 ("The Embryo") at paras 25–26 (at <http://www.publications.parliament.uk/pa/cm200405/cmselect/cmsctech/7/702.htm> (accessed 15 October 2010)). The House of Commons Select Committee on Science and Technology also recorded the evidence of the Office of the Chief Rabbi that "'the embryo is not a person, but must be treated with the respect due to a form of human life'. This respect is generally based on the potentiality of that embryo to become human life. Thus, while the gradualist approach accepts that the embryo of the human species is morally significant, it does not afford it the rights that would be conferred on it following live birth." (at para 27).

106 For a different perspective, see Haldane & Lee, "Aquinas on Human Ensoulment, Abortion and the Value of Life" Philosophy 2003; 78: 255–277 and M C Shea, "Ensoulment and IVF Embryos" Journal of Medical Ethics 1987; 13: 95–97.

moment of conception. At the other end, there was the position that the human embryo was but a mere collection of cells, no different from that of any collection of cells in an adult body or of the mother. If the first position was to be accepted, it would mean that no human embryo could be made available for research, nor any human embryo created through therapeutic cloning procedures for the purpose of research. The logical consequence of the second position would be that there would be "no objection to any form of human embryonic stem cell research, including therapeutic cloning".[107]

77 In between, however, a "moderate approach accepts that a human embryo deserves respect, with, however, a range of views on the form of such respect, the purposes for which human embryos should be created, and what protection should be accorded to the human embryo at different stages of embryonic development".[108] This was the approach that the BAC ultimately chose to investigate and adopt.

78 In coming to its view that an "moderate approach" should be adopted, the BAC argued that:[109]

> [I]n any ethical discussion on the exploitation of science and technology, two broad guiding principles would probably be accepted by most responsible societies, that the results must be both just and sustainable. 'Just' refers to the obligation to respect the common good, that there must be fair sharing of the costs and benefits. 'Sustainable' refers to an obligation to respect the needs of generations yet unborn. The principles include the concepts of beneficence and nonmaleficence, that of encouraging the pursuit of social benefits while avoiding or ameliorating potential harm.
>
> The BAC adopts these broad principles as a conceptual framework. In addition, in a multi-racial, multi-religious and pluralistic society like Singapore, public policy has to be based on a considered weighing and balancing of the spectrum of views held by various sectors.

79 Despite the appeal by the BAC to the twin rationales of justice and sustainability, it does not in the Report clearly articulate the

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107 *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) at 9 (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

108 *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) at 9 (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

109 *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) at 21 (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

connection between these two concepts and its basic recommendation that research involving human embryos should be permitted, subject to the caveat that it is not allowed to proceed past the 14th day of the embryo's development.[110]

80 This argument of the BAC is perhaps better addressed in its two separate parts. Clearly, what the BAC was arguing was that the twin considerations of justice and sustainability advocated the taking of a moderate position: the human embryo at conception was neither a full human life, nor a simple ball of undifferentiated cells.

81 The stand of the BAC is clearest in the Consultation Paper, when it speaks of "the special status of an embryo as a potential human being, yet holds that the respect due to the embryo increases as it develops, and that in this respect, in the early stages in particular, may be properly weighed against the potential benefits arising from the proposed research".[111] This concept of the embryo as having this kind of "special status" has a pedigree dating back to the work of the Warnock Committee[112] which shaped the substance of the UK Fertilisation and Embryology Act.[113] In the words of the BAC, this "special status" means that as "an embryo develops … the level of respect and protection accorded must increase".[114]

82 The link between the twin justifications of justice and sustainability and the specific time limit of 14 days of development is perhaps more tenuous, and difficult to understand. Again, the invisible hand of the Warnock Committee[115] may be seen to be at work, through the consequent adoption of this rule in the UK. The Warnock Committee considered a diverse range of opinions on the issue of developmental time limits for embryos to be used in research, and came to the conclusion that a conservative approach should be preferred, and that the time limit should be set at 14 days before the appearance of the

110 *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) Recommendations 3 and 4, at 30 (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

111 The Bioethics Advisory Committee of Singapore, "Human Stem Cell Research Consultation Paper" (8 November 2001) at 3 and 4 (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

112 *The Report of the Committee of Inquiry into Human Fertilisation and Embryology* (London: HMSO, 1984) Cmnd 9314 ("The Warnock Report").

113 Fertilisation and Embryology Act 1990 (c 37).

114 *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) at 29 (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

115 *The Report of the Committee of Inquiry into Human Fertilisation and Embryology* (London: HMSO, 1984) Cmnd 9314 ("The Warnock Report") at 64–66.

primitive streak and the first signs of neural development in the embryo. In other words, the public should have the assurance that the embryo sacrificed to research should not have the capacity to feel pain.[116]

83 This appears to be the main justification advanced by the BAC for the 14-day rule, although it does confuse the matter somewhat with the statement that "pain is but one factor in relying on the 14-day mark" and that the more important consideration is that "before the 14-day mark, the cells of the embryo are not yet undifferentiated into tissues, in that there is no organised development".[117]

84 One obvious weakness of such an approach may be that the impression of scientific precision and certainty is lent where in fact there is none. Another equally obvious one might to be to delegate and abdicate to science responsibility for what is ultimately a human, social, and moral inquiry. Before the Warnock Committee, the Royal College of Obstetricians and Gynaecologists "suggested that embryos should not be allowed to develop in vitro beyond a limit of seventeen days, as this is the point at which early neural development begins".[118]

85 So the Warnock Committee thought it was safe to set the limit at 14 days. It was not to know that, a quarter of a century later, in March 2010, the Royal College would publish a Report which advanced the view that the foetus does not develop the capacity to feel pain before the 24th *week* (*ie*, *168* days as opposed to 14 days) of gestation![119] If the issue of developmental limits were to be revisited now, the 14-day limit may well be thrown into doubt in the light of current scientific knowledge, and the BAC's tentative appeal to the fact of undifferentiation instead of capacity for pain now seems more prescient as a better rationale for setting the limit as it did.

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116 *The Report of the Committee of Inquiry into Human Fertilisation and Embryology* (London: HMSO, 1984) Cmnd 9314 ("The Warnock Report") at 64–66.

117 *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002), at 30 (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)).

118 *The Report of the Committee of Inquiry into Human Fertilisation and Embryology* (London: HMSO, 1984) Cmnd. 9314 ("The Warnock Report") at 65.

119 The Royal College of Obstetricians and Gynaecologists, *Fetal Awareness Review of Research and Recommendations for Practice: Report of a Working Party* (London, March 2010) (the "Fetal Awareness Report"). The College notes in the Summary of the Report (at p 11) that: "The lack of cortical connections before 24 weeks, therefore, implies that pain is not possible until after 24 weeks. Even after 24 weeks, there is continuing development and elaboration of intracortical networks. Furthermore, there is good evidence that the fetus is sedated by the physical environment of the womb and usually does not awaken before birth."

VIII. The proper path of the law

86 In the light of the legislative paths taken in jurisdictions such as the UK and Australia with which Singapore has not only strong traditions of commonality and links in both the law and in the standards and practice of medicine and biomedical research, the course of the "moderate position" advocated by the BAC is unremarkable. Indeed, to take a position otherwise would be to place Singapore out of step legally and scientifically with these jurisdictions, as well as to certainly derail some of the hopes that it has for the development of itself as a global centre for biomedical research.[120]

87 A fuller articulation and fleshing out of the justifications of justice and sustainability in relation to the advocacy of the "moderate position" generally, and specifically in the justification for the 14-day rule, would have been interesting. Between the two ends of the spectrum of possibilities of the status of the embryo, there is an infinite expanse of ground to choose from in picking the path of moderation.

88 But in what terms is moderation to be *conceptually* defined, other than in terms of the rejection of either extreme? Increasingly, the 14-day rule may prove to be an illusory anchor for the path of moderation, for ultimately developmental milestones in the life of the embryo is not *conceptually* defensible. From the logical viewpoint, what difference is there between choosing from the 14-day limit (based on the consideration of the possibility of perception of pain), and a particular stage of completion of the development of its brain? (What if the brain fails to develop normally to this stage, as in the acephalic or anencephalic foetus?) The Fetal Awareness Report[121] demonstrates the vulnerability of such an approach.

89 Instead of the 14-day rule, might it have been better to draw the *conceptual* bright line at implantation of the embryo into the womb, *both for surplus or supernumerary embryos, as well as for research embryos created through therapeutic cloning*? In its Recommendation 7, the BAC recommended that there should be a complete ban on the implantation of research embryos into a womb.[122] In such an approach, the 14-day

120 For an account of these economic ambitions, see K C Yeoh, "Singapore's biomedical sciences landscape" Journal of Commercial Biotechnology (April 2008); 14(2): 141–148.

121 The Royal College of Obstetricians and Gynaecologists, *Fetal Awareness Review of Research and Recommendations for Practice: Report of a Working Party* (London, March 2010).

122 *Ethical, Legal and Social Issues in Human Stem Cell Research, Reproductive and Therapeutic Cloning: A Report from the Bioethics Advisory Committee, Singapore* (21 June 2002) at 31 (available at <http://www.bioethics-singapore.org> (accessed 15 October 2010)). This recommendation was enacted into law in s 5 of the

(*cont'd on the next page*)

mark could be retained, but its nature would be much clearer: it would not be a conceptual definition of a condition of the embryo, but merely a flexible operational criteria which could be adjusted and calibrated in the light of scientific knowledge to match the "level of respect and protection" which the developing embryo is entitled to, in all its aspects, and not just the possibility of the perception of pain.

90 Equally, the BAC could have had recourse to history, and included in its arguments the implications and relevance of the existing law in the form of the Penal Code[123] and the Termination of Pregnancy Act[124] to the debate. If the principle of the absolute autonomy of the woman as regards abortion on demand before the 24th week is accepted as a base parameter, then it would seem that, at least from the legal perspective, the immediate hominisation position must necessarily be rejected, without having to resort to the more uncertain considerations of justice and sustainability.

91 To put it bluntly, if a woman has the right to abort a foetus *already implanted in her* in her absolute discretion at any time before 24 weeks, consistency demands no higher protection from destruction for the purpose of research than consent by the people who contributed genetically to the embryo within the same time frame. This is particularly so if there is no reasonable possibility that the supernumerary embryos will ever be implanted:[125] the choice is then between destruction by thawing and subsequently disposal as waste tissue, or donation to research. For those who hold to the doctrine of immediate hominisation, the reality is that objection must lie at a much earlier stage than at the stage of deciding whether or not to donate supernumerary embryos for research: the objection must be to fertility techniques which result in the creation of an excess of supernumerary embryos which will never be implanted.

92 There is a further complication in relation to *unimplanted* embryos, as opposed to implanted foetuses. There does not seem to be any provision in the body of primary legislation in Singapore that explicitly sanctions the destruction of unimplanted embryos. The

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Human Cloning and Other Prohibited Practices Act (Cap 131B, 2005 Rev Ed) on 1 October 2004. Section 8 of the same Act also specifically prohibits the development of an embryo outside the body of a woman beyond 14 days, so that the 14-day rule is now hard-wired into legislation and cannot be readily changed or adjusted to reflect current scientific knowledge.

123 Cap 224, 2008 Rev Ed.

124 Cap 324, 1985 Rev Ed.

125 For example, if the embryos had been in storage for too long to be safely implanted without risk of genetic defects occasioned by the freezing, extended cryogenic storage, and thawing; or if further fertility treatment and attempted implantation had been abandoned by the mother.

Termination of Pregnancy Act[126] clearly deals only with implanted foetuses, because it speaks of termination of pregnancy, although it can be reasonably argued that it is lawful to destroy unimplanted embryos because it is implied by established practice and by the licensing of fertility clinics under the Private Hospitals and Medical Clinics Act,[127] because fertility clinics inevitably produce supernumerary embryos which have to be destroyed. It may also be implied from the provisions of the Human Cloning and Other Prohibited Practices Act,[128] which effectively make it an offence to allow an embryo to develop outside the body of a woman for beyond 14 days. But how far can such a power be implied, and what are its limits? Already technology is pushing the boundaries of this issue through the availability of procedures such as Pre-implantation Genetic Diagnosis ("PGD"), in which human eggs are fertilised *in vitro* with a view to selecting for implantation the ones with either desired characteristics, or the ones free of a serious genetic disorder that one or both parents may carry.[129] PGD presupposes the willingness of the parents, as well as the sanction of the law, to the destruction of embryos that are necessarily sacrificed in the procedure. In this procedure, embryos are created with the express purpose of selecting between them.

93 Ultimately, too, the BAC could also have used the Penal Code[130] and the provisions of the Termination of Pregnancy[131] both to justify as well as to calibrate its sliding-scale path of moderation. Long before the "special status" of the Warnock Committee, there was Coke, Hale, Blackstone and Macaulay. All were of one mind in agreeing that an unborn child did not fall to be protected in the law as a full human being. But equally, they agreed on the notion that in the more advanced stages of development, greater protection should attend than in the earlier stages: their own version of the sliding scale. But they did not find it necessary to go beyond any conceptual definition other than to hold simply that a foetus in the womb (much less an unimplanted embryo *in vitro*) was not a creature *in rerum natura* until it was born.

94 And finally it may be argued that in a constitutionally secular society such as Singapore, it is probably irrelevant and inappropriate *for the law* to engage or take part in any metaphysical inquiry such as on the

126 Cap 324, 1985 Rev Ed.

127 Cap 248, 1999 Rev Ed.

128 Cap 131B, 2005 Rev Ed. Particularly ss 7, 8 and 11.

129 The Bioethics Advisory Committee considered the issue of Pre-implantation Genetic Diagnosis ("PGD") in its report entitled *Genetic Testing and Genetic Research* (25 November 2005) at 31–36. It recommended that PGD should be permitted where the purpose is to avoid the transmission of serious genetic disorders.

130 Cap 224, 2008 Rev Ed.

131 Cap 324, 1985 Rev Ed.

moment of ensoulment, for the law can only deal with the manifestly corporeal things and rights of this mortal world. Even it were right or minded to do so, the mortal machinery of the law cannot divine the attribute and moment of ensoulment, but can only confidently recognise the corporeal manifestation of a live birth.

95 To this end, the BAC's consideration of justice could have lent force to the argument of maximising the common space in the commonweal of a constitutionally secular society. Singaporeans cannot agree on everything, and there will always be some issues on which there are unbridgeable differences of conscience and conviction. Yet it would not be practical, nor is it legislative practice, to legislate according to the lowest denominator in prescribing a rule that will satisfy all (assuming that such is at all possible). In particular, it is especially difficult to take into account every religious perspective.

96 In matters where the needs of the law and society require a universal answer to things that affect or come to all sooner or later (for example, determining when a person is dead,[132] or whether people ought to be taxed, and how), the law seeks a path for the necessary universal law which reflects the prevailing sentiment of the majority, taking into account *where possible* the minority view. But there are also areas of human conduct which only affect people if they choose to carry out such business, and here the law has perhaps greater latitude. For example, the law allows abortion, and advance medical directives (or "living wills").[133] Nobody is obliged to have an abortion, or a living will, if one is opposed to such things: participation, unlike death and taxes, are purely optional.

97 Further, the law does not compel any person to assist in or to carry out any abortion or advance medical directive if to do so is against his or her personal beliefs, for the law also makes provision for conscientious objection.[134] It may therefore be argued that in respect of optional conduct, the better path for the law to take is that which maximises the common space, instead of one that restricts it, so long as the law does not in so doing compel anyone to do anything which is against his or her religious beliefs.

98 The argument for a "special status" for the embryo is also problematic. It has never really been satisfactorily articulated by the BAC, and it is not a concept that admits of easy and clear definition. If "life" is difficult enough to define, "special status" is necessarily even

132 Interpretation Act (Cap 1, 2002 Rev Ed) s 2A.

133 Pursuant to the Advance Medical Directive Act (Cap 4A, 1997 Rev Ed).

134 Termination of Pregnancy Act (Cap 324, 1985 Rev Ed) s 6, and Advance Medical Directive Act (Cap 4A, 1997 Rev Ed) s 10.

worse, because it posits a status *outside* of the assumed reference point of "life". It may be argued that this concept of "special status" is not only entirely unnecessary, but also muddles the admirable confidence and clarity of the English common law in drawing the clear bright line between the born and the unborn: this is precisely the confidence and clarity that the law (both in the body of the common law and legislation) will need in strength and measure in the future to meet future challenges in defining the limits of life and humanity.

99 Similarly, equally profound questions relating to *identity* may arise in the future. Yes, it is true that whole reproductive cloning has been outlawed in Singapore: but the law cannot reverse reality if a criminally-minded scientist should bring about intentionally or otherwise a whole reproductive clone of another person. What is the legal *identity* of such a clone? Or that of an embryo which has received a cytoplasmic or ooplasmic epigenetic boost from a donor third (literally, in this case) party?

100 However fundamental a concept and reality it may be to arguably the vast majority of Singaporeans, the word "soul" is not mentioned anywhere in our statutes.[135] For only at birth is there certainty of full and independent humanity in the law. Such questions do not lie in the proper province of the law, but in the higher realm of private belief and individual conscience.

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135 As noted above, less than 15% of Singaporeans 15 years and above in the 2000 Census chose to characterise themselves as not holding to any religion.