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**An analysis of the arguments underpinning UK embryonic stem cell legislation on the embryo's status**

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**Abstract**

With the passing of the Human Fertilisation and Embryology (Research Purposes) Regulations 2001, the United Kingdom of Great Britain and Northern Ireland became the first country to pass legislation in support of embryonic stem cell research and research on embryos created by somatic cell nuclear transfer. While the UK legal stance and framework on embryo research are well-known and have attracted significant attention from those with an interest in the ethics of embryo research both in the UK and elsewhere, the arguments on the status of the embryo that were expressed by the members

of Parliament and the main advisory bodies involved in this legal debate are less well-known. This article examines the entire range of arguments expressed in support of the Regulations. When the Human Fertilisation and Embryology (Research Purposes) Regulations 2001 were passed, the UK had already established a legal framework on embryo research. Since this new legal stance must be understood against the background of these earlier developments and discussions on the status of the embryo, this article will also sketch the legal history of embryo research in the UK, documenting in particular how this legal history has been influenced by the Committee of Inquiry into Human Fertilisation and Embryology's arguments on the status of the embryo. While I argue that the validity of all the arguments can be questioned, I argue also that, as long as people have irreconcilable values, no case either for or against granting full moral status to the early embryo can be made that will convince everyone. At the same time, by clarifying my own position on the status of the early embryo, I hope to throw some light on why I believe embryonic stem cell research should not be carried out. Therefore, this article will be of interest to all who have an interest in the ethics of embryonic stem cell research.

## **Introduction**

The aim of this article is to provide a critical analysis of the arguments that have been produced on the status of the early human embryo by members of the UK Parliament and its main advisory bodies in the historical development of legislation on embryo research in the UK.<sup>1</sup> The primary focus of my article is to identify and examine the entire range of arguments expressed in support

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<sup>1</sup> The term 'embryo' will be used to refer to the 'human embryo'; and the term 'early embryo' to refer to an embryo not older than 14 days.

of the Human Fertilisation and Embryology (Research Purposes) Regulations 2001, when the debate was centred mainly on the issue if early embryos should be used for embryonic stem cell research and cloning by somatic cell nuclear transfer. While my analysis is restricted to the arguments used in the UK debate, there is no doubt that the arguments discussed here have influenced legal debate elsewhere. As the UK legal framework, because of its relatively early development, has been and is affecting policy debates about embryo research elsewhere, the arguments which underlie this framework are in urgent need of ethical analysis. More generally, this article will be relevant to everyone who has an interest in exploring the ethics of embryonic stem cell research.

### **Embryo research before 1990**

For many years, embryo research took place without being regulated. The first major breakthrough in embryo research which gathered unprecedented media attention took place in 1978, when - after many years of research into in vitro fertilisation (IVF) - Louise Brown, the first human baby conceived outside the womb, was born in Oldham Hospital, England. While this event stimulated embryo research in the UK and elsewhere, many UK citizens expressed opposition and demanded legal debate and a clear legal stance.

In 1982 the Department of Health and Social Security of the UK Government decided to set up a Committee of Inquiry into Human Fertilisation and Embryology, chaired by the philosopher Mary Warnock. The Committee came to be known as the 'Warnock Committee'. Apart from a moral philosopher, the Committee included one theologian, two social workers, three legal professionals, and nine people working in a range of medical disciplines. The Committee's remit was to 'examine the social, ethical, and legal implications

of recent, and potential developments in the field of human assisted reproduction', and published the 'Warnock Report' in 1984.[1]

Before making its recommendations about research on embryos, the Committee examined the legal status of embryos in the UK, referring mainly to the Offences Against the Person Act 1861 and the Abortion Act 1967. These pieces of legislation make abortion a criminal offence unless any of the grounds specified in the latter Act apply. The Committee therefore concluded that, while 'the human embryo *per se* has no legal status', these statutory provisions do offer some protection.[2] Accordingly, the Committee took the view that, while the embryo should not be granted 'the same status as a living child or an adult' (henceforth: 'moral status'), the embryo should be given a 'special status' and be 'afforded some protection in law'.[3] The need for 'protection', however, was not considered to be incompatible with the use of the embryo for research, and therefore with embryo destruction. The Committee thought embryo research can be justifiable, subject to a number of conditions. One condition is what could be called a 'last resort' principle. This is the view that embryo research would be justifiable only when the research could not be done with 'other animals or in some other way' and when they are not 'frivolously or unnecessarily used'.[4] Other conditions are that informed consent is obtained from the gamete donors 'whenever this is possible' and that research is licensed and monitored, which is why the Committee recommended the creation of a new statutory agency to license all embryo research.[5]

The Warnock Report does not provide a clear explanation why the embryo should not be granted moral status. In the introduction to her publication of the Report, Warnock states that the majority of the Committee supported what has become known as the 'gradualist' view, or the view that the embryo's status increases as he or she develops.[6] 'One argument' amongst a 'wide range of opinion' is referred to as 'the strictly utilitarian view' or the view that the

question of whether or not to use embryos for research must be settled by ‘the balance of benefit over harm, or pleasure over pain’.[7] In this view, ‘as long as the embryo is incapable of feeling pain’, his or her ‘treatment does not weigh in the balance’.[8] Warnock has identified this view as a contributing factor to the majority of her Committee’s support for embryo research.[9]

This view is subject to two criticisms. A first problem is how we can know if early embryos are incapable of feeling pain. The Committee refers to the presence of the ‘beginnings of the central nervous system’.[10] While we rightly conclude that those who possess a central nervous system normally possess also the capacity to feel pain, this does not rule out the possibility that the capacity to feel pain may be present also where there is no central nervous system. We should be careful not to construe absence of evidence of sentience (the capacity to feel pain) as evidence of absence of sentience. Second, and more importantly, even if we assume that early embryos are incapable of feeling pain, it is not clear why this should matter morally.<sup>2</sup> Anaesthetised children, for example, may not be able to feel pain, but many, if not most people would agree that this does not justify their destruction for research. I suspect that the reason why we believe it is not right to kill children for research, therefore, does not relate to the question if they feel pain, but to the question if it violates their interests in life. By analogy, many people think that it is *prima facie* wrong to cut down trees not because trees might suffer, but because trees have an interest in life. Since it can be argued that early embryos also have an interest in life as – like trees – they sustain themselves and have an orientation towards growth, the *prima facie* wrongness of destroying embryos does not consist in the fact that the act of destruction might cause them pain (as it may not), but in the fact that it destroys their lives. This does

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<sup>2</sup> See also Deckers J. (in press) Why Eberl Is Wrong. Reflections on the Beginning of Personhood, *Bioethics*.

not imply that sentience is morally irrelevant. In the unlikely scenario where we are given the choice, *ceteris paribus*, between killing a human being with the capacity to feel pain and killing a human being without this capacity, we should opt to kill the latter. However, this need not imply that the latter has less value than the former. This point can be clarified as follows. Imagine (only for the sake of my argument) being given the choice between scenario A where you are being asked to kill someone while he or she is anaesthetised, and scenario B where you are being asked to kill that same person without that person being sedated first. While scenario A must be preferred, it is obvious that the reason why this scenario must be preferred does not relate to a difference in value between the person considered for destruction in scenario A and the person considered for destruction in scenario B, given that the same person is being considered as the object of killing in both scenarios. Therefore, while the killing of those who cannot feel pain must be preferred, *ceteris paribus*, to the killing of those who can feel pain, this need not imply that those who lack the ability to feel pain are any less valuable. I conclude, therefore, that this ‘argument from sentience’ is unconvincing.

Having considered the argument from sentience, the Committee then moves on to recommend that the embryo should not be ‘kept alive’ or ‘used as a research subject beyond fourteen days after fertilisation’, excluding ‘any time during which the embryo may have been frozen’.[11] The relevant paragraph, however, does not contain a reference to the argument from sentience. Instead, the early embryo is described as ‘a potential human being’.[12] Attention is now drawn to ‘the formation of the primitive streak’, which in an earlier paragraph is identified as ‘the latest stage at which identical twins can occur’.[13] The Committee now expresses the view that this is the moment which ‘marks the beginning of individual development of the embryo’.[14] No other arguments are provided by the Warnock Committee in support of its gradualist position.

What is problematic about this account is that the view that the early embryo is not a human being, but merely a potential human being, is implausible. Presumably, the Committee arrives at this view on the basis of the view that, as long as the early embryo still has the potentiality to become more than one individual, it cannot be a human individual already. This ‘argument from individuality’ has had long-lasting appeal in the debate on embryo research in the UK. One of its chief advocates has been the influential Walton of Detchant, a member of the House of Lords, former Dean of Medicine at the University of Newcastle, and past President of the British Medical Association, the Royal Society of Medicine and the General Medical Council. A few years after the publication of the Warnock Report, when embryo research was being discussed in UK Parliament, Walton wrote an article against the views of the Roman-Catholic Cardinal Basil Hume explaining, as a member of the ‘Methodist Church’, the benefits of embryo research for IVF and the development of pre-implantation genetic diagnosis for the ‘prevention’ of inherited disease, and claiming that its rejection would be a ‘devastating blow ... to that fundamental Christian ethic of aiding those less fortunate than ourselves’.[15] Walton asserted that Hume had ‘fallen into the trap of perpetuating several errors of argument and logic which are being regularly advanced by opponents of research’, but failed to provide an example to demonstrate why this should be the case.[16] Another Roman-Catholic, however, the Australian Salesian priest Norman Ford, who had just published a book with the title ‘When Did I Begin?’, was hailed by Walton as ‘that eminent (...) scholar’.[17,18] Walton cited Ford and others as ‘strongly’ supportive of ‘the view that individuation of the human embryo (that is, the earliest evidence of the existence of a human individual) cannot be thought to arise until the appearance of the primitive streak’, a view which he expressed also in the House of Lords at that time, and again more than a decade later



when the House debated the draft Human Fertilisation and Embryology (Research Purposes) Regulations.[19,20]

The problem with this argument is that the assumption that, as long as something can still become more than one, it cannot be one already, is logically flawed. A flatworm, for example, can divide and reconstitute itself into more than one individual. Yet we do not conclude from the fact that a flatworm can still become more than one individual that it is not an individual already, or that it is only a potential flatworm. This was clear already to Aristotle, who wrote that for plants and insects that can multiply by division, before division, there is ‘actually one’, but ‘potentially many’ souls.[21] Therefore, it is not clear why we should conclude that embryos cannot be individuals as long as they can still divide into more than one individual. Since embryologists describe the early embryo as an individual in his or her own right, rather than as part of the female body, describing an early embryo as a potential human being is inappropriate. Without making the assumption that early embryos are human beings, rather than body parts, it seems difficult to explain why they manage to develop in a petri dish, an environment so different from the environment provided by the female body. A plausible view is that they sustain and develop themselves, as human beings in their own right, rather than that external principles direct their development. They are living beings, rather than parts of living beings. Therefore, the Warnock Committee’s contention that they merely have a ‘potential for life’ is flawed.[22]

The Warnock Report’s text (as well as Walton’s text) could, however, be interpreted in a different way. Even if it were granted that early embryos might be individuals already, it may be the case that what is expressed is the view that what matters morally is whether or not one is an indivisible or irreversible human individual. On this interpretation, early embryos would lack moral status because they might still become more than one human individual. A

first problem with the validity of this ‘argument from twinning’ is that some early embryos might not have the potential to divide and become twins, unless they are forced to divide artificially. Therefore, a distinction in moral value should be made between those early embryos with the potential to divide on their own account and those who lack such potential. In other words, it would not provide support for the view that all early embryos lack moral status. A second, more significant problem is that no argument is provided for why being an indivisible human individual, rather than simply being a human individual, should be what matters morally.

While the Warnock Report’s support for embryo research met with strong opposition in UK Parliament, six years went by before the UK Government finally decided on the issue. During this time, support for the recommendations of the Warnock Report increased. The sociologist Michael Mulkey has reported that this may be related partly to the decision, made by the Medical Research Council and the Royal College of Obstetricians and Gynaecologists, to create a Voluntary Licensing Authority (VLA) in 1985, later renamed the Interim Licensing Authority, to regulate embryo research in the absence of statutory provisions. Since the existence of this Authority was mentioned occasionally in Parliament, some members of Parliament might have become convinced that, provided a regulatory authority existed, embryo research was not much of a concern. Mulkey also mentions the influence of ‘Progress’, a pro-research organisation formed shortly after the creation of the VLA to block the passage of the Unborn Children (Protection) Bill (the ‘Powell Bill’) which aimed to prohibit embryo research and to make it a criminal offence to fertilise an egg outside the womb unless permission had been given by the Health Secretary and the embryo was destined for implantation.[23] While it would be interesting to examine the arguments on the status of the early embryo expressed by members of UK Parliament in the

first major Parliamentary debate on embryo research, such an examination is beyond the scope of this paper.

### **The introduction of the Human Fertilisation and Embryology Act 1990**

Eventually, supporters of the the Unborn Children (Protection) Bill were defeated, and six years after the publication of the Warnock Report, the Human Fertilisation and Embryology Act 1990 was passed.[24] In accordance with the recommendations of the Warnock Report, the Act stipulated that the Human Fertilisation and Embryology Authority (HFEA) be established, materialising in 1991, to license and monitor the use of embryos in UK fertility clinics and research institutions, and to monitor and review abortion services.[25] Its members are appointed by the Secretary of State for Health, to whom it is accountable. The Act also enshrined the Warnock Report's focus on the primitive streak as the cut-off point: 'a licence cannot authorise ... keeping or using an embryo after the appearance of the primitive streak', where 'the primitive streak is to be taken to have appeared ... not later than the end of the period of 14 days beginning with the day when the gametes are mixed, not counting any time during which the embryo is stored'.[26] By using the words 'not ... keeping or using', the Act avoids referring to the positive acts of destroying or killing which would be required should embryos ever be able to develop beyond that stage outside the womb. The fact that destruction is intended may also be downplayed where the Act states that after the normal statutory storage period of five years cryopreserved embryos 'shall be allowed to perish'.[27]<sup>3</sup>

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<sup>3</sup> Incidentally, Walton used similar language whilst discussing PGD, asserting that those embryos 'carrying abnormal genes will simply be allowed to degenerate naturally'. See Walton of Detchant. (1990) Embryo Research –

The Warnock Report's concern that early embryos should not be used for trivial research purposes is accommodated by the paragraph that no licence should be granted 'unless the Authority is satisfied that any proposed use of embryos is necessary for the purposes of the research'.<sup>[28]</sup> The question must be asked if this is consistent with the Act's apparent lack of consideration for embryo destruction resulting from the widespread availability and use of what is erroneously called the combined 'contraceptive' pill and other 'contraceptive' techniques with the potential to block implantation. While the Act amends the 1967 Abortion Act, the use of such 'contraceptive' techniques is exempted from the requirement to satisfy any of the legitimate grounds for pregnancy termination.<sup>[29]</sup> This is so because the Act stipulates that a woman is not deemed to be 'carrying a child', or to be pregnant, until the embryo has implanted so that a termination of pregnancy cannot occur before implantation.<sup>[30]</sup> Since embryologists might define conception as the moment when pregnancy starts, this crafty piece of legal tinkering is questionable. This apparent lack of consideration for pre-implantation embryos conceived inside women's bodies appears to sit uncomfortably with the Act's interest in ensuring that any proposed research project on embryos who would normally be conceived outside women's bodies pursues goals deemed sufficiently worthy in relation to reproduction and congenital disease (or - in the words of the Act - is 'necessary or desirable for the purpose of (a) promoting advances in the treatment of infertility, (b) increasing knowledge about the causes of congenital disease, (c) increasing knowledge about the causes of miscarriages, (d) developing more effective techniques of contraception, or (e) developing methods for detecting the presence of gene or chromosome

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Why the Cardinal is Wrong, *Journal of Medical Ethics*, 16, 185-186, p. 186. See also Nuffield Council on Bioethics. (2000) Stem Cell Therapy. The Ethical Issues. London. Nuffield Council on Bioethics: par. 21.

abnormalities in embryos before implantation, or for such other purposes as may be specified in regulations).’[31] The apparent inconsistency need not necessarily be understood in terms of a contradiction, though. The Act might have equal regard for all early embryos, irrespective of whether or not they are used for research, but simply regard any destruction of pre-implantation embryos by ‘contraceptive’ pills to be sufficiently worthwhile, thereby obviating the need to make a distinction between more and less worthy causes in relation to ‘contraceptive’ technologies.<sup>4</sup>

### **The debate about embryonic stem cell research and cell nuclear replacement**

In the late 1990’s, however, it became possible to extract embryonic stem cells from early embryos, and many scientists became convinced that these might be used to cure a wide range of disease. Also, research carried out at the Roslin Institute in Edinburgh, which led to the creation of Dolly the sheep, raised the hope that even better therapies might be produced from the combination of embryonic stem cell research and cloning by somatic cell nuclear transfer or cell nuclear replacement. In this context, the UK Government established an Expert Group led by the Chief Medical Officer (including nine people working in medicine or genetics, one person working in veterinary medicine, one ethicist, one specialist in medical law, one theologian, and the Government’s Chief Scientific Advisor), charged with

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<sup>4</sup> The question if embryo destruction can be justified to achieve goals not related to research is addressed in Deckers J. (in press) Why Two Arguments from Probability Fail and One Argument from Thomson’s Violinist Succeeds in Justifying Embryo Destruction in Some Situations, *Journal of Medical Ethics*.

assessing the anticipated benefits, risks, and alternatives of new areas of research using embryos, and to advise Government on whether new research purposes should be added to the list approved by the 1990 Act. The Act had authorised the Secretary of State for Health to produce secondary legislation to extend this list.[32] Such an extension had already been recommended in reports issued by two other groups, a report published jointly by the HFEA and the Human Genetics Advisory Commission (the latter provided advice to UK Government on ethical issues related to human genetics before merging with other bodies into the Human Genetics Commission in 1999), and a report by the Nuffield Council on Bioethics (an independent organisation which reports on ethical issues related to biology and medicine).[33,34] The group led by the Chief Medical Officer, Liam Donaldson, then produced a report with the title ‘Stem Cell Research: Medical Progress with Responsibility’, also known as the ‘Donaldson Report’.[35] The Expert Group advocated an extension, and agreed with the gradualist position on the issue of the embryo’s status adopted by the Warnock Committee, or the view that the ‘respect owed to developing human life is regarded as increasing in proportion to the degree of development of the embryo’.[36] It concluded that embryonic stem cell research may proceed because of its ‘great potential to relieve suffering and treat disease’.[37] The recommendations of the Expert Group were then accepted by the UK Government.[38] New legislation was then drafted and debated in both Houses of Parliament. The following arguments - which will be examined shortly - were expressed on the issue of the status of the early embryo: three arguments from potentiality, an argument from capacities, an argument from probability, an argument from mourning, and an argument from ensoulment.

After the debate, the Human Fertilisation (Research Purposes) Regulations 2001 were made on 24 January 2001, and came into force on 31 January 2001, to allow research (under paragraph 3 of Schedule 2 to the 1990 Act) aimed at

‘(a) increasing knowledge about the development of embryos, (b) increasing knowledge about serious disease, or (c) enabling any such knowledge to be applied in developing treatments for serious disease’.[39] In this way, the United Kingdom became the first country to legislate on these other types of research, most notably embryonic stem cell research. The scope of acceptable extensions includes the creation of embryos by somatic cell nuclear transfer for research purposes aimed at finding therapies, which has been referred to as ‘therapeutic cloning’. While the debate in Parliament was frequently centred on the issue of cloning, Yvette Cooper, Parliamentary Under-Secretary of State for Public Health, tried to reduce some Parliamentarians’ concerns about the proposed Human Fertilisation (Research Purposes) Regulations by expressing the view that therapeutic cloning was already legal under the 1990 Act, but that it now could be used for these additional purposes.[40]

The passing of the 2001 Regulations was a blow for Alton of Liverpool, who had pleaded for more time to debate the issues before a decision would be made. Instead, debate was carried on afterwards. In response to a proposal from Walton of Detchant, a House of Lords’ Select Committee (henceforth: HL Committee) was appointed to consider and report on the issues connected with stem cell research and human cloning, arising from the new regulations. I had the pleasure of contributing to one of their meetings aimed at gathering ‘evidence’.<sup>5</sup> After a series of such meetings, the Committee published a report supporting existing legislation.[41] Unlike the Chief Medical Officer’s Expert Group, the HL Committee tried to provide an answer to the question of why early embryos lack moral status. The Report includes the same arguments as those raised in both Houses of Parliament during the debate preceding the new regulations. The validity of these arguments is examined in what follows.

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<sup>5</sup> The meeting was held at St John’s College, University of Durham, 13 November 2001.

First, there are three arguments from potentiality. The first is the view that the early embryo is potentially human, the second that the early embryo has a passive potentiality to become a human being with moral status, and the third that the early embryo has an active potentiality to become a human being with moral status. The first view, that the early embryo is not a human being, underlies the HL Committee's assertion that even after the embryo has implanted 'there is no trace of human structure'.<sup>[42]</sup> Likewise, the Donaldson Report stated that the early embryo 'could develop into a human being', or is 'a potential human being'.<sup>[43]</sup><sup>6</sup> Similar views were expressed in both Houses of Parliament. In the House of Commons, for instance, Yvette Cooper claimed that unneeded embryos 'will not become human beings'.<sup>[44]</sup> And in the House of Lords, the moral philosopher and member of the Select Committee Onora O'Neill asserted, in her eloquent fashion, that the early embryo 'lacks all internal structure' and that 'there is not even the beginnings of a glimmer of

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<sup>6</sup> In the House of Commons, the same view was expressed by Ian Gibson, Joan Ruddock, and Robert Key (Hansard, 17 November 2000, columns 1192, 1210, 1215), while Michael Fabricant stated that 'a blastocyst is not a human being' (Hansard, 15 December 2000, column 919). The related view, that embryos 'could develop into full human beings', was espoused by Edward Leigh, an opponent of embryo research (Hansard, 31 October 2000, column 629). In the House of Lords, Hunt of Kings Heath, Kennedy of The Shaws, and Taverne referred with approval to the Donaldson Report's claim (Hansard, 22 January 2001, columns 19, 29, 47). In the same House, Sharp of Guildford expressed that the 1990 Act implicitly adopts the view that the early embryo is 'not a human being' (Hansard, 22 January 2001, column 110). Even Alton of Liverpool, a renowned opponent of embryo research, cited the relevant text from the Donaldson Report, without comment, in the same House (Hansard, 22 January 2001, columns 63).



the human form'.[45]<sup>7</sup> Yet no explanation is provided for why early embryos should not be human beings, or lack a human structure or form. The fact that early embryos do not possess the organs which foetuses, children or adults have is insufficient to justify this conclusion. Clearly, these people have some idea of what defines as 'the' human structure or form, yet no idea is provided of what this is or why early embryos should be excluded from having such a form. The position that early embryos lack some properties which they ought to possess before they can be considered to be human beings is problematic and has been challenged rightly by Alan Holland. Holland argues that, in a Darwinian world, it makes no sense to stipulate a list of properties which an organism ought to possess in order to be classified to belong to a particular species. Species properties are nothing but contingent manifestations of similar characteristics displayed by a breeding population. A necessary condition for belonging to the species *homo sapiens*, therefore, is not to possess some features which might be similar to the features of others, but to possess the right lineage. Since human embryos are created by other members of *homo sapiens*, they fulfil this condition.[46]

Perhaps these texts bear testimony to a human tendency to use sloppy language: rather than denying the early embryo's humanity as such, the underlying assumption might be that the early embryo is not sufficiently similar to a more developed human being to have moral status. This may be what is behind Evan Harris' claim, expressed in the House of Commons, that an early embryo is 'much smaller than the head of a pin' and that 'there is no question of experimenting on anything that remotely resembles a foetus'; or behind Richard Harries' claim, expressed in a public lecture (Newcastle University, UK, 20 April 2004), that 'to the eye it is a blob of jelly'.[47] In one place, the HL Committee understands this lack of similarity in terms of an

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<sup>7</sup> See also Howe's views in Hansard, 22 January 2001, column 115.

alleged lack of (sufficient) identity: because the early embryo still contains cells which develop into the placenta and umbilical cord, and can still divide to constitute identical twins, the view that there is 'such a continuity of identity' as there is between babies and adults 'is less plausible'.<sup>8</sup>[48] This is problematic for two reasons. First, neither possession of the capacity to twin nor possession of the capacity to form material which will later be discarded (such as the placenta or umbilical cord) justifies the conclusion that those who possess these capacities lack continuity of identity with those who lack either or both capacities. While two identical twins cannot say that they are identical with each other, it is not problematic for both of them to say that they are identical with the early embryo they once were. As I shall argue further below, this does not, however, lead to the conclusion that for the reverse process of fusion, where two gametes become one embryo, there is also a continuity of identity between either gamete and the embryo that forms from them. If we now focus on the fact that early embryos still contain cells which will develop into the placenta and umbilical cord, we must conclude that this fact does not undermine the continuity of identity between early embryos and more developed embryos either. There is no reason why the placenta and umbilical cord should not be regarded as integral parts of the developing embryo. Second, the Committee fails to explain why the existence of (sufficient)

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<sup>8</sup> The same claim was made by Richard Harries in a public lecture (Newcastle University, 20 April 2004). Harries claimed that the possibility of twinning and the fact that the early embryo still contains cells which become the placenta and umbilical cord support the conclusion that it is not possible to 'say, for definite, that was me'. It seems to me that, even if I agreed to the moral importance of having sufficient 'continuity of identity', a stronger conclusion would be needed for its validity, to the effect that it is not possible to 'say, for definite, that was' not 'me'.

‘continuity of identity’ should matter morally. If what mattered morally were the fact that one individual was still capable of developing into more than one individual, rather than ‘continuity of identity’ *per se*, the Committee should have argued that embryos with the capacity to become more than one individual are less valuable compared with embryos who lack this natural capacity, rather than argue that all early embryos lack moral status because some may – without being artificially separated - develop into twins (as I argued earlier on). As mentioned before, even then the question must be asked why the capacity to twin should matter morally. I return to this issue in my discussion of the argument from ensoulment.

The second argument from potentiality is the view that the early embryo has a passive potentiality to develop into a human being with moral status. The Warnock Committee suggested the validity of this view already by writing that some people think that the early embryo is not ‘a person’ or a ‘potential person’ because the ‘collection of cells ... has no potential for development ... unless it implants’, or is ‘transferred to a uterus’.[49]<sup>9</sup> Likewise, Sally Keeble claimed in the House of Commons that early embryos ‘have the potential for

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<sup>9</sup> In the House of Commons, this view was expressed by Ian Gibson, Michael Clark, Evan Harris, and Peter Brand. The last one, for example, expressed the view that ‘foetal cells’ do not ‘have the same status as a unique human being’, and that there is a great difference between ‘foetal material’ and a ‘born child’ (Hansard, 17 November 2000, columns 1192 and 1194-1195 and Hansard, 19 December 2000, columns 250, 253). In the same House, Howard Stoate was keen to make the point that an embryo created by somatic cell nuclear transfer ‘is not a human being’, first claiming that such an embryo’s lack of potentiality is like the sperm or egg’s lack of potentiality, then that this lack of potentiality lies in the fact that ‘nobody will be allowed to try’ to develop such an embryo (Hansard, 19 December 2000, columns 233-234).

life, which is not the same as being alive’, while Jenny Tonge claimed that ‘human life does not begin until there is sustenance to maintain life from the placenta in the uterus’ and that the unimplanted embryo therefore is in ‘a pre-life condition’.[50] In the same House, Evan Harris asserted that the blastocyst is a ‘disorganised cluster of cells’.[51] The HL Committee provides a more elaborate account, claiming that the view that the early embryo is only a ‘potential person’ is backed up by ‘embryological evidence’: ‘Although the fertilised egg and blastocyst contain all the genetic signals required for human life, this is true of nearly all cells in the body. ... Although the early embryo contains ... the full genetic potential of any person(s) who may develop from it, it requires many other factors, particularly those provided by the maternal environment in the womb, to enable it to realise that potential.’[52]<sup>10</sup> In a meeting of this Committee, Onora O’Neill expressed a similar view, claiming that, in an age of cloning by somatic cell nuclear transfer, this potential was possessed by all cells of the human body.<sup>11</sup> The problem with these claims is that the embryo’s potentiality is misconceived. While both somatic cells and embryos require a suitable environment to develop, somatic cells (as well as gametes) need to be transformed into new entities before they can acquire the intrinsic potentiality to develop on their own account, while embryos already possess that potentiality. Ann Winterton expressed this view clearly in the House of Commons where she said that the early embryo has ‘the capacity to initiate, sustain, control and direct its own development’.[53]<sup>12</sup> If the different

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<sup>10</sup> In the House of Lords, Dick Taverne objected to the use of the word ‘embryos’, preferring ‘embryonic cells’, for those ‘cells which are not to be implanted’ (Hansard, 22 January 2001, column 64).

<sup>11</sup> See note 5.

<sup>12</sup> See Hansard, 17 November 2000, column 1203 and Hansard, 19 December 2000, columns 243-244.

parts which constitute early embryos were not integrated, it seems hard to explain why these parts develop normally into one or more unified organisms in a continuous process from conception, rather than into a collection of body parts (for example, into a collection of hearts). It goes without saying that embryos need a suitable environment, but that is no different from what adults need to fulfill their potentialities. Embryos necessarily have this intrinsic potentiality for development, irrespective of whether or not their environment is suitable for their development. Neither haploid gametes nor diploid somatic cells possess this intrinsic potentiality.

The third argument from potentiality is the view that merely having the potentiality to reach a certain status is not sufficient to be granted that status already. This argument was adopted by Robert Key in the House of Commons, where he uses the view that there are ‘degrees of human sanctity’ to support his gradualist account of moral worth.[54] Likewise, the HL Committee supports the view that the early embryo is only ‘a potential person rather than ... a person’ as follows: ‘A medical student is a potential physician, and if he or she qualifies may practise as such; but the potentiality alone does not confer a right to practise. A child is a potential voter but has no claim to be treated as a voter until reaching the age of 18.’[55] By analogy, even if it is granted that the early embryo has an active potentiality to become an adult, this does not mean that he or she has already acquired the status of an adult.<sup>13</sup> The problem

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<sup>13</sup> Richard Harries adopted the same argument in the aforementioned public lecture, using another analogy which has featured in the abortion debate since the early nineteen seventies: the alleged value difference between acorns and oak trees. The validity of this analogy is undermined in Deckers J. (2005) Why Current UK Legislation on Embryo Research Is Immoral. How the Argument from Lack of Qualities and the Argument from Potentiality Have Been Applied and Why They Should Be Rejected, *Bioethics* 19 (3) 251-271, p. 264.

with this argument, however, is that the moral status of medical students, children, or ‘less saintly people’, is no different from the status of physicians, people who are able to vote, or ‘more saintly people’. Therefore, while it is true that embryos are potential adults, the argument fails to establish that embryos only have a potentiality to become beings with moral status.

The HL Committee also adopts an argument from capacities to try to justify the view that the early embryo does not deserve a full measure of respect by arguing that ‘the basic arguments for respect are focused on (...) beings able to think, act, and communicate’.[56] The problem with this position is that it may rule out others as well, for example human infants. While one could make a case for infant thought, action, and communication, the HL Committee states that the capacity to act - the capacity which one might regard as the most basic amongst the three capacities listed - is lacking in infants. But the HL Committee then argues that respect is ‘extended’ to infants, which raises the question of why the same measure of respect is not also extended to early embryos.[57] A further problem with this view is that it fails to explain why research is restricted to early embryos, as the argument could be made that these capacities are also lacking in more developed embryos. This suggests that the reason why the HL Committee supports the use of early embryos, but not the destruction of more developed embryos or infants for research, must lie elsewhere. Some support for the argument from sentience seems to be given where the HL Committee writes that the fourteen days limit for research ‘has an objective justification insofar as it represents the stage at which the primitive streak ... begins to appear’, a stage before which (as clarified in a preceding paragraph) ‘there can be no sentience’.[58]<sup>14</sup> While it may be an

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<sup>14</sup> In the House of Commons, the argument was endorsed by Evan Harris, Michael Fabricant, and Yvette Cooper (Hansard, 31 October 2000, column

objective fact that the primitive streak appears around the fourteenth day, the HL Committee does not explain why this should be an ‘objective justification’ for research on embryos younger than fourteen days. As I shall argue in the final section, I am not convinced that the existence of variable capacities provides a moral justification for discrimination amongst humans.

A fifth argument bases the view that early embryos have little value on the view that there is a high probability that they may not be able to survive beyond a certain point regarded as critical, for example implantation. In the House of Commons, this argument was supported by Evan Harris and Peter Brand.[59] Harris, who acknowledges that he owes this view to ‘Church of England theologians’, appears to be bothered by the possibility that the ‘majority of stars in heaven’ might be embryos who never implanted, which he feels is easier to reconcile with the idea that they lack moral status than with the idea that they have such status. The HL Committee appears to approve of this argument as well. Having claimed that the natural loss rate of early embryonic death is ‘as high as 75 per cent’, the Committee describes the following information as ‘consistent with’ its ‘gradualist view’: ‘Although would-be parents may feel sad at the natural loss of early embryos before implantation, there is no public mourning ritual associated with it, nor is there for the loss of surplus embryos left over from IVF treatment.’[60]<sup>15</sup> The use of the word ‘loss’ to describe the destruction of spare embryos downplays the intentional act of destruction and suggests that ‘the loss of surplus embryos’ would be no different from the ‘natural loss of early embryos’. While the Committee does not state explicitly that the high probability that embryos

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627; Hansard, 15 December 2000, column 919; Hansard, 19 December 2000, column 212).

<sup>15</sup> The argument is also supported by Onora O’Neill, a moral philosopher and member of the House of Lords (Hansard, 22 January 2001, column 68).

decay naturally counts as a reason for their lack of moral status, this may be what is suggested here. Whether or not this is a valid interpretation, at least the Committee's chairman, Richard Harries, used the argument in the aforementioned public lecture. It was also used by Robert Winston, a specialist in reproductive medicine, in the House of Lords' debate. Winston claimed that 'twelve per cent of human embryos in an in vitro fertilisation programme implant' and 'something probably similar happens in nature'. This would support the view that, 'by nature's standards', the human embryo is 'not sacrosanct'.<sup>[61]</sup> The argument is problematic. First, it sums over the survival odds of each individual embryo. While it may be true that '75 per cent' (or 88 per cent) of early embryos die young, this does not establish that each embryo has a '75 per cent' (or 88 per cent) chance of dying early. For some, the chances of implanting or being born might be much higher than for others, who might be doomed from the start. Therefore, if the probability of a successful outcome (whether this be implantation or birth) would be what mattered morally, the argument should not be that all early embryos have little value, but only those who have a relatively small chance of a successful outcome. A second problem with the argument, however, is that many people would agree that, when it comes to assessing the moral worth of children or adults, the question of how large or small their chances are of surviving up to a certain stage are irrelevant. Therefore, the view that there is a high probability that early embryos might die young fails to justify that they lack moral status.

The above quotation from the HL Committee also contains an argument from mourning, supported also by Richard Harries in the aforementioned public lecture, and by Robert Key in the House of Commons: the absence of 'public mourning ritual' would support the view that the early embryo lacks moral status.<sup>[62]</sup> The problem with this argument is that we do not use the fact that the deaths of some children or adults do not cause a lot of grief in other people as evidence for their lack of moral status. Therefore, it is not clear why it



should support the view that early embryos lack moral status. One could object that there are other factors which may account for why some born people's deaths are not mourned over (much), for example that it depends on a relative lack of friends or close friends, but that the death of anyone belonging to the class of early embryos is not mourned over much. The counterobjection is that this is not true, since many people go through severe mourning experiences when they experience early miscarriages. Another reason why there might be no 'public mourning ritual' for the death of an early embryo is that many women may not know that they are pregnant. Whether or not they are, it is surely the case that early embryos are not 'public' persons in the sense that they are not visibly present as independent persons within society, which may account for the lack of 'public mourning ritual'. Finally, not too long ago many slaves' deaths may not have been accompanied by a 'public mourning ritual'. Yet I hope not many people today would argue that this should count as evidence for their lack of moral status. Even if it were the case that embryos' deaths are not mourned over much, it is a naturalistic fallacy to conclude from this that embryos' deaths ought not to be mourned over much, or that moral status ought not be granted to them. I conclude, therefore, that the argument from mourning is unconvincing.

Finally, two versions of the argument from ensoulment, or the view that early embryos are not ensouled and therefore lack moral status, have been supported in this debate. The chief advocate of the first version - identified also as one out of two Christian views by the HL Committee - has been the HL Committee's chairman, Richard Harries.[63]<sup>16</sup> Harries refers to Aristotle's

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<sup>16</sup> The argument was also used by Evan Harris in the House of Commons' debate. Harris refers to a paper written by the Anglican theologian John Polkinghorne (with similar views as those held by Harries regarding

embryology, where ‘there is first a vegetable soul, then an animal soul’, and only at 40 days after conception for men and at 90 days for women, an intellectual soul.[64,65] While it is correct that Aristotle wrote that the fetus starts to move and differentiate only around 40 days after conception for boys and around 90 days for girls, Harries understands that this implies that, for Aristotle, ‘it is only at the last point that there is, properly speaking, a human being’.[66] He claims that a similar position was adopted in the Christian Church, at least in the ‘western’ tradition, until the nineteenth century when the view that ensoulment occurs at conception became ‘firmed up’.[67] Harries claims that his gradualist account is supported by ‘this understanding of the western tradition’.[68] This view is subject to a number of criticisms.

First, Harries claims that the present Catholic position that ensoulment occurs at conception stems largely from the nineteenth century, and refers to a number of early and medieval Christian writers who thought otherwise. While Harries is correct that some Christians have supported ‘delayed ensoulment’ theories, in his article on ‘The Appeal to the Christian Tradition in the Debate about Embryonic Stem Cell Research’, David Jones has illustrated that the view that ensoulment occurs at conception was by no means absent from the early Christian tradition.[69,70]

Second, Harries claims that the delayed ensoulment theory finds Biblical support in Exodus 21.22-24, where a distinction is made between a ‘fully formed’ and a ‘not fully formed’ fetus (literally: ‘μή ἐξεικονισμένον’, or ‘not yet so formed as to be a copy or portrayal of the human form’), and where anyone found involved in the destruction of the latter is held to be subject to less severe penalties compared with anyone found guilty of destruction of the former.[71] In fact, the distinction is absent from the Hebrew text, but stems

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ensoulment) (Hansard, 19 December 2000, column 253). Polkinghorne’s paper can be found at <http://www.cofe.anglican.org/info/socialpublic/cnr.html>

from a mistranslation in the Septuagint, the influential pre-Christian Greek translation of the Scriptures. In the other passages where the Hebrew word 'גִּבּוֹר' occurs (Genesis 42.4,38;44.29), the word could not possibly be translated by 'fully formed'.<sup>17</sup> In fact, the Septuagint translates the word in these other passages as 'sickness'. In the context of Exodus 21.22-24, the best translation may be 'harm' or 'injury'. In other words, the gradation in penalty applies not to the issue of whether or not the fetus is 'fully formed' (which, anyhow, need not be synonymous with 'ensouled'), but to the question if the pregnant woman suffers further injury apart from having a miscarriage. Harries is right, though, that the distinction between 'formed' and 'unformed' then found its way into Christian theology through Augustine (as documented by Jones), who made reference to the distinction relying on an old Latin translation of the Septuagint.[72,73] Also, Jones has documented that some writers then started to identify the distinction between 'fully formed' and 'not fully formed' with the distinction between animated and inanimated, providing the example of an anonymous work from the fifth century, originally thought to be Augustine's.[74,75]

Third, the suggestion that, for Aristotle, the intellectual soul was only present a long time after conception is flawed. Aristotle thought the first movements could be registered on the fortieth and the ninetieth day after conception for boys and girls respectively, but doubted the accuracy of his conclusions. More importantly, he held that the early embryo contained all three souls from the beginning, not in act, but in potency. While the vegetative power would be actualised before the sensitive power, and the sensitive power before the intellectual power, all three powers were held to be present before their actualisation, as different parts of one soul.[76,77]

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<sup>17</sup> I am grateful to Robin Salters for the help I received to examine this issue.

Finally, and most problematically, for Aristotle, the cause of the creation of these three successive stages of the soul was the sperm, while for Aquinas (the first Christian theologian to use Aristotle's work extensively) the sperm was the cause of the creation of the 'lower' souls, yet not of the intellectual soul (which he thought had to be created directly by God, that is: without the use of sperm), and therefore the sperm had to continue existing until this process was completed.[78,79] Yet, since Karl Ernst von Baer observed and described the mammalian ovum for the first time in 1827, complementing Reinier de Graaf's first observations of the ovarian follicle in 1672 and Antoni van Leeuwenhoek's first observations of the sperm in 1677, it was only a matter of time before further observations would prove beyond reasonable doubt that both were involved in the creation of an embryo.[80] Important breakthroughs in the latter part of the nineteenth century were the work of Gregor Mendel, who discovered from his observations of pea plants that organisms inherit two genes for each trait, one from each parent, and the observation (originally of a nematode worm) and description of meiosis during gametogenesis in animals by Edouard Van Beneden.[81,82] The latter observation corroborated Wilhelm August Oscar Hertwig's conclusion, based on the observation of sea urchins, that sperm and egg fuse in animals that reproduce sexually.[83] Thus, we now know that the sperm does not continue to exist after conception. This is incompatible with the view that the sperm might be the cause of ensoulment at any stage after conception. The idea that the early embryo is alive solely by virtue of the soul of the male parent, present in the sperm, and that the early embryo is not an independent living being until some time after conception, flies in the face of modern embryology. In the light of these developments, it seems strange how anyone could still hold on to the view that ensoulment does not occur at conception. Even more bizarre is Walton of Detchant's statement, which he claims (erroneously) was presented as Aquinas's view 'until the middle of the 19<sup>th</sup> century', that 'the foetus' does 'not develop as an

independent human being and that life' does 'not begin until the foetus' is 'capable of independent existence outside the womb'.<sup>[84]</sup> This great progression in embryological understanding achieved over the course of the nineteenth century, rather than - as Harries claims - the greater incidence of abortion resulting from greater technical expertise in the carrying out of abortions, may also have prompted pope Pius IX into deciding, in 1869, that equal penalties should apply to early and late abortions.<sup>[85,86]</sup>

I shall now turn to the second version of the argument from ensoulment, a variant of the argument from individuality found in the Warnock Report. It is the view that early embryos cannot be ensouled because they might still divide into more than one organism or fuse to become one organism, and that they therefore lack moral status. Peter Brand expressed this argument in the House of Commons, while Richard Harries has claimed that the HL Select Committee held that the possibility of twinning excludes the early embryo from being a person, and therefore presumably from being an ensouled human being.<sup>[87,88]</sup> If we understand the soul in the traditional (Aristotelian) sense as the principle that provides organisation and direction to the human body, the implication is that early embryos lack such a principle. In other words, early embryos would either be like body parts which might have relative autonomy but which are ultimately controlled by the souls of the bodies in which they are situated, or like machines which are controlled entirely by external forces. Yet, since early embryos appear to develop autonomously, and given the fact that a strong continuity exists between a fourteen and a fifteen day old embryo, irrespective of whether or not twinning or fusion still occurs on the fourteenth day, the view that the principle which directs the development of early embryos is different from the principle which directs the development of more developed embryos is implausible. A more plausible view is that ensoulment occurs at conception, given that no such continuity exists between gametes kept in separation from each other and the early

embryo who comes into existence when gametes are brought together. Another plausible view is that the cause of ensoulment, the principle which fuses sperm and egg, is not an external agent, but the early embryo who creates himself or herself out of the materials provided by the sperm and egg. The Christian theological perspective supported by Harries and many others, where an external agent, God, intervenes to infuse the soul, lacks a satisfactory answer to the problem of evil. What it cannot answer is, for instance, the question why a good God would infuse souls inside the bodies of women after rape? That Harries wants to hold on to a belief in God's goodness seems apparent from what has been reported to be his concern that, if the view that ensoulment occurs at conception were accepted, together with the view that three quarters of all embryos fail to implant, 'three quarters of heaven would be populated by souls that lived for less than a week'.<sup>18</sup> The reason why Harries would find this conclusion 'strange', and therefore the first premise unacceptable, may relate to the view that his belief in the goodness of God is incompatible with the idea that many souls die at such an early stage.[89] Regardless of this theological critique, what is more problematic is that those who base the view that the early embryo is not ensouled either on Harries' concern over the possibility of twinning or on Brand's concern over the possibility of fusion, are unwilling to change traditional embryological conceptions in the light of modern embryology. Before the advent of modern embryology, the phenomena of twinning and embryonic fusion were understood even less than they are today, and therefore there was no need to conceive of the possibility of twinning or fusion occurring after conception. Accordingly, it was thought that a soul

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<sup>18</sup> Robert Key claims that these are Harries' words, with approval of his view (Hansard, 17 November 2000, column 1215). Evidence for the rightness of Key's claim is Harries R. (2004) *Why Limited Cloning Is Right and Necessary*, *Church Times* (20 August).

could not divide into souls or fuse with other souls. This view fitted common sense, as common observation was sufficient to conclude that born humans no longer twin or fuse with other humans to become new human individuals. Yet, since we have now managed to observe what takes places in the early stages after conception and know that twinning and fusion can occur after conception, why should we hold on to the view that a soul cannot divide into souls or fuse with another soul? Why should either the splitting of one soul into two or more souls, or the merging of multiple souls into one soul, be regarded as impossible? I conclude, therefore, that both versions of the argument from ensoulment are flawed.

### **Should early embryos be granted moral status?**

In this article, an overview of the arguments on the status of the early embryo that have been used by the main legal advisory bodies and members of Parliament in support of legal developments related to embryo research in the UK has been provided, the main focus being on the most recent developments. I have shown that none of these arguments are convincing. While the UK is currently regarded as being one of the most 'liberal' countries as far as the legitimacy and scope of embryo research is concerned, many have expressed the view that its legal stance and legislative framework can be an inspiration for other legislatures.<sup>19</sup> What my paper has shown is that the arguments underpinning this framework provide a shaky, rather than - as claimed by the House of Commons' Science and Technology Select Committee on Human Reproductive Technologies and the Law - a 'firm foundation' for legislation.[90] However, while it is one thing to undermine a range of

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<sup>19</sup> See for example Herder M. (2002) The UK Model: Setting the Standard for Embryonic Stem Cell Research?, *Health Law Review*, 10, 14-24.

arguments that have been used to deny moral status to the early embryo, it is another matter to make a convincing case for why the early embryo should be granted such status. On this issue, I agree with David Hume's position, cited with approval by Warnock, that morality is 'more properly felt than judg'd of'.<sup>[91,92]</sup> Warnock rightly adds, though, that the fact 'that a decision is based on sentiment by no means entails that arguments cannot be adduced to support it'.<sup>[93]</sup> These arguments, however, might not convince those who have different values or sentiments. This need not result in a kind of moral paralysis where those with irreconcilable values refuse to engage in debate with one another, or disparage the positions held by others by labelling them as irrational. Neither is it necessary to believe that those with irreconcilable values will never be able to reconcile their differences. While it is beyond the remit of this paper to make an elaborate case against the gradualist account of the embryo's status which has been supported by these legal developments, my final paragraph aims to sketch the position I have developed elsewhere, that early embryos should be granted moral status. I also illustrate how this position might be undermined both by an objectifying discourse and by the view that assigning moral status to the embryo is necessarily incompatible with embryo destruction.<sup>[94]</sup>

My view is that we should promote equality between all human beings and treat all humans as equal, rather than assign different values to different human beings depending on how many properties or capacities each human being may possess. If discrimination against infants or children, even though they are a long way from being adults, is not acceptable, then discrimination against early embryos is not acceptable either. While many people may not support this analogy, a number of people expressed their appreciation for such a



position when I talked about the subject at a recent symposium in Oxford.<sup>20</sup> Discourse about the human embryo often portrays the embryo as if he or she were an abstract, alien entity, the product of those who experiment with substances in test tubes in laboratories. The moral position that human embryos are suitable objects for research might be favoured by this kind of discourse. When I showed the first ultrasound scan of my daughter, no more than eight weeks after her conception, followed by a picture of my six year old daughter now, and asked rhetorically if adopting a gradualist position might mean accepting the view that she was quite worthless around the time her first picture was taken, many conference attendees realised that a different discourse was possible, and started questioning the gradualist account, reflected in the reactions I received after my presentation. Another reason why many people may reject the view that the early embryo has moral status might relate to the widely held view - adopted also by the HL Committee - that such a position is incompatible with embryo destruction.[95] The view is then rejected because the position that embryo destruction should not be allowed under any circumstances, including, for instance, cases of pregnancy after rape, is regarded as unacceptable. I have argued elsewhere, however, that the view that ascribing moral status to the embryo is incompatible with all forms of embryo destruction, is flawed, but that it is incompatible with the destruction of embryos for research.[96] Killing a human being is a serious act of violence, irrespective of whether or not embryos feel pain. Children, who have not had the same amount of exposure to the 'laboratory discourse' on embryos, are no less horrified when they hear about embryo research by being told that these early embryos are so small and undeveloped that they do not even feel

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<sup>20</sup> The symposium on Bioethical Issues at the Beginning, Middle, and End of Life, was organised by the Oxford Forum for Medical Humanities, 2 June 2006, St Anne's College, Oxford.

that they are being destroyed. What may be more acute in their understanding is that human embryos are not aliens, but that – to use the words used by Edward Leigh expressed in the House of Commons – ‘we were all at that stage once’.[97] Perhaps the paediatrician John Wyatt is right when he claims, in his article on ‘Medical Paternalism and the Fetus’, that ‘nearly all of us share deep-rooted intuitions that the protection, support, and nurturing of vulnerable human beings ... is an essential duty of a civilised society.’[98] While supporters of embryonic stem cell research might claim that the protection of vulnerable people is precisely what their research is about, the means by which this must be achieved should not include the destruction of other people. However, in cultures where many nonhuman animals are objectified and killed gratuitously, the killing of human embryos for less trivial purposes may not be surprising. From the perspective of Ken Wilber’s transpersonal psychology, the destruction of others in what Wilber calls ‘Atman projects’ is a coping strategy used by individuals anxious about their mortality.[99] From this perspective, the words of Alison Murdoch - a member of the Newcastle Fertility Centre which was granted the first UK licence in 2004 to create embryos by somatic cell nuclear transfer - who is reported to have said that spare embryos ‘have no more moral status than blood taken from a patient’, carry deeper meaning.[100]<sup>21</sup> While religious sacrifices of blood may have become rare events in the modern world, the destruction of embryos for research might fulfil a similar psychological function: to provide an illusory sense of security in the fight against one’s own mortality and one’s ultimate lack of control.

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