Submission No. 1346
Received 30 June 2016

To: Secretary

Health, Communities, Disability Services and Domestic and Family Violence Prevention Committee

Re: Abortion Law Reform (Women's Right to Choose) Amendment Bill 2016 and Inquiry into laws governing termination of pregnancy in Queensland

It is with pleasure that we enclose our submission for the Inquiry into laws governing termination of pregnancy in Queensland.

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Inquiry into laws governing termination of pregnancy in Queensland

Dr Andrew McGee is a philosopher and lawyer who has published papers in leading international peer reviewed philosophy journals on the moral status of the embryo, foetus, and newborn baby. Two of these publications are attached as an Appendix to this submission.

Dr Sally Sheldon is a lawyer and philosopher who has worked in a number of academic and social justice roles.

Dr Melanie Jansen is a medical doctor and senior registrar in general paediatrics and intensive care medicine. She is also the Clinical Ethics Fellow at the Centre for Children's Health Ethics and Law at the Lady Cilento Children's Hospital.

SUMMARY OF SUBMISSION:

1. We support the full decriminalisation of abortion, with some regulation being retained to reflect current practice in respect of late-term abortions.
2. The ethics of abortion is a grey area, and there is no knock-down argument either for the view that the embryo attains full moral status from conception, or for the view that full moral status is only attained either (a) when the embryo becomes a foetus; or (b) when the foetus becomes a child. Although people take different views of these matters, each view is reasonable and cannot be shown conclusively to be false.
3. Because it is impossible to demonstrate conclusively that any of these reasonable views is the truly correct view, a woman should at least have the option of abortion, so she can make up her own mind. Those who oppose abortion can likewise make up their own mind and not have an abortion.
4. The effects of carrying a foetus to term and of delivery are always substantial for a woman. Even the current law recognises that, should her life be in danger, the woman's right to life shall prevail. But the impacts on a woman are not restricted to the risks to her life, but extend to significant permanent changes to her body, and include risks of injury that are not negligible; research shows only 27.4 per cent of births in Queensland are 'normal'.
5. A woman should therefore not be compelled to take these risks by laws prohibiting abortion when there is no decisive argument that the embryo or foetus has the same moral status as an adult human being. Some protection for late-term foetuses should, however, remain to reflect current medical practice and community standards.

Support for decriminalisation of abortion

1. We write to express our unequivocal support for the decriminalisation of abortion in the State of Queensland. The law as it now stands neither reflects community views in Australia about the acceptability of abortion,[1] nor current practice. A law that fails to reflect current practice and is out of step with current community views is not a credible law.

[1] De Crespigny L, Wilkinson D, Douglas T, Texter M, and Savulescu, J, 'Australian Attitudes to Early and Late Abortion' (2010) 193 *Medical Journal of Australia*, 9-12, at 9.

2. We believe that women must have the right to make their own choices about whether or not to have a child, and that such a decision is a private matter for the woman and for whomever she freely chooses to discuss the matter with.. It is not appropriate for the State to have a say in these matters, although we believe that there ought to be regulation of late-term abortions from 24 weeks to reflect current practice. Such regulation should not be in the Criminal Code, but should form a separate Act similar to the *Abortion Law Reform Act 2008* (Vic), attached at Appendix A.

Value of life of the embryo and foetus

3. The moral debate about whether abortion should be decriminalised often centres on the value of the life of the embryo and foetus. Religious and some secular views believe that the embryo should be afforded the same moral protection, from conception onwards, as an infant. Others believe that moral status is only enlivened later, either when the embryo has turned into a foetus or when the foetus has developed a brain, or even when the foetus has acquired the capacity for consciousness and the capacity to feel pain – normally at or after 24 weeks gestation.[2]
4. We don't believe that there is any decisive argument either supporting or refuting any of these beliefs. All are reasonable, which is why debate about the moral standing of the embryo and foetus is interminable and, in our view, sterile. In particular, we note that the religious belief that full moral status is acquired at conception is not an *irrational* view,[3] though it is not a view that we ourselves endorse. As Judith Jarvis Thomson notes,[4] although it makes no sense to claim, for example, that a famous painting has an interest in being protected from destruction (and so has the correlative right to be so protected), it does at least make sense (it is not wholly irrational) to assert that a newly fertilised egg has an interest in not being destroyed, and so a correlative right not to be destroyed.[5] But what would demonstrate conclusively that the fertilized egg does, or does not, have such an interest and right? It equally makes sense – it is not wholly irrational – to *deny* that the newly fertilized egg has interests and rights on the basis that only a being that can currently possess hopes and desires can have an interest in obtaining the things it hopes for and desires.[6] Each opposing view is a reasonable view, and there is no knock-down argument for either side.

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[2] Royal College of Obstetricians and Gynaecologists, 'Fetal Awareness: A Review of Research and Recommendations for Practice', March 2010.
[3] Thomson J, 'Abortion', *Boston Review*, January 1995.
[4] Ibid.
[5] Some people debate whether, since a plant can benefit from sunlight and being watered, it is in the interests of the plant to have access to sunlight and water. It seems to us that such a view is not irrational in the way that it is irrational to claim that a famous painting can 'benefit' from, and so have an interest in, being protected.
[6] There are other bases for denying that a newly fertilized egg possesses interests and rights. To give just one of many, up to 14 days after conception, monozygotic twinning remains possible, which may imply that no individual human being exists until after 14 days, when this possibility has passed. On such a view, the early embryo is an individual in the sense that it is a spatio-temporal continuant separate from its mother's cells, but it is not yet an individual human being in the sense that it has not yet taken on the form of a human being, though it is, of course, a human being if 'human being' means 'member of the species *Homo sapiens*' rather than 'starting to take on roughly the form and shape of typical human beings'. It is a reasonable view for

5. But, as Thomson notes, precisely for this reason, the onus must fall on those who seek to criminalise and restrict access to abortion to show us conclusively that the only rational view to take is that the newly-fertilised egg has the same moral status as an adult human being. If, by contrast, equally reasonable views are open about this issue, it is not ethically acceptable for the views of one faction to be imposed on all those who hold a different, but equally reasonable, view. As Thomson explains:

> What is in question here is not which of two values we should promote, the deniers' or the supporters'. What the supporters [of full moral status from conception] want is a license to impose force; what the deniers want is a license to be free of it. It is the former that needs the justification.[7]

6. If the views of each side are rational, but there is no *proof* either way, then the solution is to allow each person to make up their own mind by making the *option* available. A woman who does not believe that the newly-fertilised egg has full moral status should be able to regulate her life accordingly, free from interference from those who believe, but cannot prove, the converse. These latter people are free, in their own lives, not to have an abortion.

Irreversible impacts of childbirth on the mother

7. There are also other very important reasons why the decision should be for the woman only. It is very common in debates about abortion, including in parliamentary debates,[8] for women to become invisible. A woman is not reducible to a vessel for delivery of a baby – "a foetal container".[9] The actual physical delivery of a baby in childbirth is not a simple process by which the child seamlessly slides into existence outside the womb – either with or without medical assistance. On the contrary, childbirth is dramatic, risky and, sometimes, traumatic, both physically and mentally, for the mother. The so-called 'normal' risks of pregnancy[10] are not akin to the normal risks of crossing a road. In addition to these risks, are others such as the risks associated with induced labour, spinal and/or epidural anaesthetic and caesarean section. We believe that there is a meaningful sense in which a woman is putting her life or health at risk in delivering a baby.
8. Although, statistically, the risks of death occurring may be small in first-world jurisdictions such as Queensland, the risks are not negligible, and it is reasonable for a woman to say that, given the magnitude of what she may lose if she carries a child to term, a small risk is not a risk she desires to take.[11] The case of Amanda Sheppard,[12] who died during an elective

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someone to hold that, until it starts to take on human form, the embryo does not have moral status in the form of interests and rights.

[7] Thomson, 'Abortion', note 1.

[8] Victoria, Legislative Assembly (2008) *Parliamentary Hansard*, Tuesday, 9 September (The Hon. J Merlino MLA, Minister Assisting the Premier on Multicultural Affairs and Minister for Sport, Recreation and Youth Affairs), p 3313. Minister Merlino refers to "the little boy or girl in the womb", as though the foetus is a little homunculus in a lounge room. As Jonathan Herring has stated: "Any attempt to consider the foetus outside the context of the pregnant woman utterly fails to acknowledge the corporeal interwining that pregnancy involves and presents the fairytale image of the foetus living in a cosy house inside the mother", Herring J, 'The Loneliness of Status: The Legal and Moral Significance of Birth' in Ebtehaj F, Herring J and Johnson M (eds) *Birth Rites and Rights* (Hart Publishing, 2011), p 103.

[9] See Herring, Ibid, p 103.

[10] *R v Davidson* [1969] VR 667.

[11] For a consideration of risks of maternal death in different countries, see Bewley S and Foo L, 'Are doctors still improving childbirth?' in Ebtehaj et al (eds), note 8, Ch 3.

caesarean section at Rockhampton Base Hospital in April 2016, is a salutary reminder of the risks of delivery for a woman. If a woman does not want to proceed with a pregnancy, it is reasonable for the woman to cite risks such as these even if, statistically, the risk is low, because no woman will know, in advance, whether she is more susceptible to risks than other women.

9. In addition to maternal mortality, morbidity associated with childbirth can be significant. While rates of perineal injury vary depending on the setting, with new imaging techniques and greater awareness, there is growing recognition that significant perineal injury is more common than once realised.[13] The president of the Royal College of Obstetricians and Gynaecologists in the United Kingdom reports that approximately 90% of women have some kind of perineal tear at birth, with up to almost 6% of first time mothers in the UK experiencing a third or fourth degree tear.[14]Long term complications of third and fourth degree tears include urinary and faecal incontinence, fistula formation, dyspareunia (pain during intercourse) and prolapse (where parts of the vagina, uterus, bowel and urological organs protrude out of the vagina). About 50% of women, following a vaginal birth, will have significant changes to the functional anatomy of a key pelvic floor muscle implicated in the development of prolapse, with 10-20% of women requiring surgery for this in their lifetime.[15] If caesarean section is required, this is major surgery involving incision through the abdominal and uterine walls, requiring a number of weeks' recuperation. Caesarean section also makes subsequent pregnancies and deliveries more risky.[16] The United Kingdom Maternity Care Working Party has developed guidelines for what is considered a normal birth, based on the World Health Organisation definition.[17] By this definition, only 27.4% of births in Queensland are normal.[18] While for most women in Queensland, the complications of pregnancy and birth are well managed, and women have good functional outcomes, there is still significant risk associated with the process.
10. The psychological impact of pregnancy and birth is also significant. Many women report body image dissatisfaction post partum and this can affect many other aspects of their health and wellbeing.[19] In addition, prenatal anxiety and depression affects up to 1 in 10 women and postnatal depression up to 1 in 7 women.[20]

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[12] [redacted]

[13] Dietz H, *Pelvic floor trauma in childbirth,* O&G Magazine, Vol 16 No 1 Autumn 2014 http://www.ranzcog.edu.au/editions/doc_view/1706-13-pelvic-floor-trauma-in-childbirth.html

[14] Richmond D, *Perineal tearing is a national issue we must address,* Royal College of Obstetricians and Gynaecologists, July 2014 https://www.rcog.org.uk/en/blog/perineal-tearing-is-a-national-issue-we-must-address/

[15] Dietz H, *Pelvic floor trauma in childbirth,* O&G Magazine, Vol 16 No 1 Autumn 2014 http://www.ranzcog.edu.au/editions/doc_view/1706-13-pelvic-floor-trauma-in-childbirth.html

[16] Queensland Maternity and Neonatal Clinical Guideline: Vaginal birth after caesarean section (VBAC), June 2015 https://www.health.qld.gov.au/qcg/documents/g-vbac.pdf

[17] Queensland Maternity and Neonatal Clinical Guideline: Normal Birth, April 2012 https://www.health.qld.gov.au/qcg/documents/g_normbirth.pdf

[18] Ibid

[19] Gjerdingen D, et al, *Predictors of Mothers' Postpartum Body Dissatisfaction,* Women Health 2009 Sep; 49(6):491-504 http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2796197/

[20] Perinatal Anxiety and Depression Australia (PANDA) Factsheet: Anxiety and Depression in Pregnancy and Early Parenthood. http://www.panda.org.au/images/FINAL_PDF_Anxiety_and_Depression_in_Early_Parenthood.pdf

11. Our claim is: the child cannot become an independent being without the woman taking these risks and accepting these impacts of childbirth. Given (1) that the ethics of abortion is a grey area, from the point of view of the moral status of the embryo and foetus, and (2) these very real impacts of carrying and delivering a child, we should not require of a woman that she put her own life, health and bodily integrity on the line when she does not want to bring a child to term. It is not reasonable to require this of a woman when there is no decisive argument for the claim that the embryo and foetus have *the same* moral status as an adult human being, and when it is therefore at least reasonable to believe that they do not have equal moral status.
12. We accept that the closer to delivery a foetus is (especially from the point of viability onwards), the greater is its moral status; the human being is fully formed, though it remains dependant on the mother for oxygen and subsistence. We accept that, accordingly, many people wish to see some regulation of abortion after 24 weeks. Such regulation would reflect current practice.[21] We note that, when this issue was debated in Victoria, it was found by the Victorian Law Commission that 94.6 per cent of abortions in Australia occurred before 13 weeks gestation, with only 4.7 per cent occurring after 13 weeks and before 20 weeks, and 0.7 per cent occurring after 20 weeks.[22] Late term abortions are performed in extreme, often tragic, circumstances, often because of foetal abnormalities, and not because, at 20 weeks and beyond, the woman decides – for example – that she would rather take a holiday. It is, with great respect to those who think otherwise, an insult to women to believe that late term abortion decisions should be regulated on the basis of the misconception that the decision might otherwise be made on trivial grounds. Because the dilemma for a woman in these rare cases is in the space of the tragic, where there is ineliminable loss, grief, and suffering, those closest to the issue should be able to decide for themselves with the best support and advice available, and the law should only reflect what is already occurring in current practice. In this respect, we recommend that an Act similar to the *Abortion Law Reform Act 2008* (Vic) be enacted in Queensland together with the repeal of the provisions proposed by the Abortion Law Reform (Women's Right to Choose) Amendment Bill 2016. A copy of this Act is included in Appendix A.
13. We note, finally, that section 313(1) of the *Criminal Code Act 1899* (Qld) should be removed, since subsection (2) to that provision was inserted in 1997 by the *Criminal Law Amendment Act 1997* (Qld) to clarify that the offence intended to be captured under section 313 is an unlawful assault on a female pregnant with a child,[23] and is not meant to apply to doctors performing abortions in good faith and in accordance with good medical practice. Subsection (1) as currently worded creates uncertainty.

[21] Victorian Law Reform Commission, (2008) *Law of Abortion: Final Report,* Melbourne.
[22] Victorian Law Reform Commission, (2008) *Law of Abortion: Final Report,* Melbourne.
[23] See Queensland Legislative Assembly 1996 *Parliamentary Hansard* 4 December 1996 (The Hon. D Beanland MP, Attorney-General) at 4871.

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Appendix A

Abortion Law Reform Act 2008 (Vic)

Abortion Law Reform Act 2008

No. 58 of 2008

TABLE OF PROVISIONS

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Victoria

Abortion Law Reform Act 2008†

No. 58 of 2008

[Assented to 22 October 2008]

The Parliament of Victoria enacts:

PART 1—PRELIMINARY

1 Purposes

The main purposes of this Act are—

(a) to reform the law relating to abortion; and

(b) to regulate health practitioners performing abortions; and

(c) to amend the **Crimes Act 1958**—

(i) to repeal the provisions relating to abortion; and

(ii) to abolish the common law offences relating to abortion; and

(iii) to make it an offence for an unqualified person to perform an abortion; and

(iv) to amend the definition of ***serious injury*** to include the destruction of a foetus other than in the course of a medical procedure.

2 Commencement

This Act commences on the day after the day on which it receives the Royal Assent.

3 Definitions

In this Act—

abortion means intentionally causing the termination of a woman's pregnancy by—

(a) using an instrument; or

(b) using a drug or a combination of drugs; or

(c) any other means;

registered health practitioner has the meaning given in the **Health Professions Registration Act 2005**;

registered medical practitioner means a medical practitioner registered under the **Health Professions Registration Act 2005**;

registered nurse means a nurse registered under the **Health Professions Registration Act 2005**;

registered pharmacist means a pharmacist registered under the **Health Professions Registration Act 2005**;

regulated health profession has the meaning given in the **Health Professions Registration Act 2005**;

woman means a female person of any age.

PART 2—ROLE OF REGISTERED HEALTH PRACTITIONERS

4 Termination of pregnancy by registered medical practitioner at not more than 24 weeks

A registered medical practitioner may perform an abortion on a woman who is not more than 24 weeks pregnant.

5 Termination of pregnancy by registered medical practitioner after 24 weeks

(1) A registered medical practitioner may perform an abortion on a woman who is more than 24 weeks pregnant only if the medical practitioner—

(a) reasonably believes that the abortion is appropriate in all the circumstances; and

(b) has consulted at least one other registered medical practitioner who also reasonably believes that the abortion is appropriate in all the circumstances.

(2) In considering whether the abortion is appropriate in all the circumstances, a registered medical practitioner must have regard to—

(a) all relevant medical circumstances; and

(b) the woman's current and future physical, psychological and social circumstances.

6 Supply or administration of drugs by registered pharmacist or registered nurse—at not more than 24 weeks

A registered pharmacist or registered nurse who is authorised under the **Drugs, Poisons and Controlled Substances Act 1981** to supply a drug or drugs may administer or supply the drug or drugs to cause an abortion in a woman who is not more than 24 weeks pregnant.

7 Supply or administration of drugs by registered pharmacist or registered nurse—more than 24 weeks

(1) A registered medical practitioner may, in writing, direct a registered pharmacist or registered nurse, who is employed or engaged by a hospital, to administer or supply a drug or drugs to cause an abortion in a woman who is more than 24 weeks pregnant only if the medical practitioner—

(a) reasonably believes that the abortion is appropriate in all the circumstances; and

(b) has consulted at least one other registered medical practitioner who also reasonably believes that the abortion is appropriate in all the circumstances.

(2) In considering whether the abortion is appropriate in all the circumstances, a registered medical practitioner must have regard to—

(a) all relevant medical circumstances; and

(b) the woman's current and future physical, psychological and social circumstances.

(3) A registered pharmacist may administer or supply a drug or drugs to cause an abortion in a woman who is more than 24 weeks pregnant only if the pharmacist is employed or engaged by a hospital and only at the written direction of a registered medical practitioner.

(4) A registered nurse may administer or supply a drug or drugs to cause an abortion in a woman who is more than 24 weeks pregnant only if the nurse is employed or engaged by a hospital and only at the written direction of a registered medical practitioner.

(5) In this section ***hospital*** means a public hospital, private hospital or day procedure centre within the meaning of the **Health Services Act 1988**.

8 Obligations of registered health practitioner who has conscientious objection

(1) If a woman requests a registered health practitioner to advise on a proposed abortion, or to perform, direct, authorise or supervise an abortion for that woman, and the practitioner has a conscientious objection to abortion, the practitioner must—

(a) inform the woman that the practitioner has a conscientious objection to abortion; and

(b) refer the woman to another registered health practitioner in the same regulated health profession who the practitioner knows does not have a conscientious objection to abortion.

(2) Subsection (1) does not apply to a practitioner who is under a duty set out in subsection (3) or (4).

(3) Despite any conscientious objection to abortion, a registered medical practitioner is under a duty to perform an abortion in an emergency where the abortion is necessary to preserve the life of the pregnant woman.

(4) Despite any conscientious objection to abortion, a registered nurse is under a duty to assist a registered medical practitioner in performing an abortion in an emergency where the abortion is necessary to preserve the life of the pregnant woman.

PART 3—AMENDMENTS TO THE CRIMES ACT 1958

9 Repeal of Subdivision (2) of Division 1 of Part I

Subdivision (2) of Division 1 of Part I of the **Crimes Act 1958** is **repealed**.

See: Act No. 6231. Reprint No. 20 as at 1 July 2008. LawToday: www.legislation.vic.gov.au

10 Offences against the person

(1) In section 15 of the **Crimes Act 1958 insert** the following definitions—

"***abortion*** has the meaning given in the **Abortion Law Reform Act 2008**;

medical procedure, in relation to paragraph (b) of the definition of ***serious injury***, means—

(a) an abortion performed by a registered medical practitioner in accordance with the **Abortion Law Reform Act 2008**; or

(b) the administration or supply of a drug or drugs by a registered pharmacist or registered nurse in accordance with the **Abortion Law Reform Act 2008** to cause an abortion;

registered nurse means a nurse registered under the **Health Professions Registration Act 2005**;

registered pharmacist means a pharmacist registered under the **Health Professions Registration Act 2005**;

woman means a female person of any age.".

(2) In section 15 of the **Crimes Act 1958**, for the definition of ***serious injury*** **substitute**—

"***serious injury*** includes—

(a) a combination of injuries; and

(b) the destruction, other than in the course of a medical procedure, of the foetus of a pregnant woman, whether or not the woman suffers any other harm;".

11 New sections 65 and 66 substituted

For sections 65 and 66 of the **Crimes Act 1958 substitute**—

"**65 Abortion performed by unqualified person**

(1) A person who is not a qualified person must not perform an abortion on another person.

Penalty: Level 5 imprisonment (10 years maximum).

(2) A woman who consents to, or assists in, the performance of an abortion on herself is not guilty of an offence against this section.

(3) For the purposes of this section—

(a) a registered medical practitioner is a qualified person; and

(b) a registered pharmacist or registered nurse is a qualified person only for the purpose of performing an abortion by administering or supplying a drug or drugs in accordance with the **Abortion Law Reform Act 2008**.

(4) In this section—

abortion has the same meaning as in the **Abortion Law Reform Act 2008**;

perform an abortion includes supply or procure the supply of any drug or other substance knowing that it is intended to be used to cause an abortion;

registered medical practitioner means a medical practitioner registered under the **Health Professions Registration Act 2005**;

registered nurse means a nurse registered under the **Health Professions Registration Act 2005**;

registered pharmacist means a pharmacist registered under the **Health Professions Registration Act 2005**;

woman means a female person of any age.

66 Abortion—Abolition of common law offences

Any rule of common law that creates an offence in relation to procuring a woman's miscarriage is abolished.".

12 Repeal of amending provisions

This Part is **repealed** on the first anniversary of the day on which this Act receives the Royal Assent.

Note

The repeal of this Part does not affect the continuing operation of the amendments made by it (see section 15(1) of the **Interpretation of Legislation Act 1984**).

ENDNOTES

† *Minister's second reading speech—*

Legislative Assembly: 19 August 2008

Legislative Council: 12 September 2008

The long title for the Bill for this Act was "A Bill for an Act to reform the law relating to abortion, to amend the **Crimes Act 1958** and for other purposes."

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Appendix B

Submitter's Research on Moral Status of Embryo, Foetus, Infants

The first article, 'The moral status of babies' (2013) 39(5) *Journal of Medical Ethics* 345, questions the standard philosophical approach to ascertaining moral status by reference to the features the individual possesses, such as the capacity for rationality and to value one's life – features associated with personhood. The paper argues that the best candidate for the time at which full moral status is acquired is upon birth.

The second article, 'The Potentiality of the Embryo and the Somatic Cell' (2014) 45(4-5) *Metaphilosophy* 689, shows how difficult it is to mark the point at which full moral status is acquired or lost, and exposes some of the implausible lengths some philosophers go to in order to justify their own intuitions about the moral status of embryos. By examining the claim, in the context of the embryonic stem cell debate, that an embryo has full moral status because it is a potential person, the paper shows that there will never be a knock-down argument against that view, and that attempts by well-known philosophers such as Peter Singer to refute the view fail.

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The moral status of babies

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ABSTRACT

In their controversial paper 'After-birth abortion', Alberto Giubilini and Francesca Minerva argue that there is no rational basis for allowing abortion but prohibiting infanticide ('after-birth abortion'). We ought in all consistency either to allow both or prohibit both. This paper rejects their claim, arguing that much-neglected considerations in philosophical discussions of this issue are capable of explaining why we currently permit abortion in some circumstances, while prohibiting infanticide.

INTRODUCTION

In spite of the unsavoury backlash that their article has created, the paper recently published in the *Journal of Medical Ethics* by philosophers, Alberto Giubilini and Francesca Minerva,[1] is to be welcomed. In their paper, they raise again a challenge that, as the editor Julian Savulescu has noted,[2] has been raised before by the most eminent bioethicists and philosophers in the world, but which has not yet received an adequate answer: if we accept the moral permissibility of abortion, but not the moral permissibility of infanticide, how do we justify our position? It seems to be essential to find some rational basis for distinguishing morally between the fetus and the newborn healthy baby, otherwise our moral stance is incoherent. Giubilini and Minerva are posing this question for us once again, and are suggesting that, rationally, there may just be no coherent basis for relevantly distinguishing the fetus and the newborn. As they make clear in a recent blog post, this does not mean they are advocating the legalisation of infanticide.[3] It is simply a challenge to us to find a way to distinguish relevantly between the fetus and the newborn, and is therefore an invitation to further dialogue on the issue. In this paper, I intend to take up their challenge, and to propose an approach that I believe offers a solution.

THE CHALLENGE RAISED BY THE AUTHORS' ARGUMENTS

The argument of Giubilini and Minerva can be shortly stated. There is no morally relevant difference between the capacities of the fetus and those of a newborn baby.[1] But only a difference in the capacities of the two entities can justify a difference in obligations towards them. For example, neither the fetus nor the newborn has the capacity to be aware of itself as an existing entity with a future, and so neither of them has the capacity to form long-term aims or goals. Yet these capacities distinguish human beings at a particular stage of maturity from most animals. They are the capacities that have been said to define *persons*. The unique capacities to form long-term aims and projects confer on persons correspondingly unique rights and responsibilities, and the frustration of those aims and projects that would result if a person is killed is a serious kind of harm. Because the fetus and the newborn do not possess these capacities, they are not persons, and so are not the bearers of the rights and obligations that apply to persons.[1] Unless some other justification can be found for conferring on them the right to life, neither has a right to life, for they cannot be harmed by being killed in the way that persons can be.

In spite of this reasoning of Giubilini and Minerva, many people believe that abortion should be permitted, in at least some circumstances. Many also believe that an early abortion is less wrong than a late-term abortion. Most, on the other hand, believe infanticide is wrong. However, if Giubilini and Minerva are correct, this position is irrational; we cannot rationally believe that abortion is permissible, but infanticide is not.

Is there a rational way of accepting the permissibility of abortion, but ruling out the permissibility of infanticide? I believe there is. In the first part of this paper, I will focus on explaining why we have set up the moral (and legal) rule that it is wrong to kill infants. I will then attempt to rebut some objections to my claims. Finally, in the conclusion, I will broach the question of why we might have different rules in relation to the fetus and embryo, as distinct from a newborn.

MEETING THE CHALLENGE

Rejecting the relevance of the distinction between short-term desires or needs and long-term goals

We should begin by rejecting the relevance of the distinction between short-term desires or needs and long-term goals. As any mother will attest, a newborn baby has many immediate desires he or she wants satisfied, such as the need to suckle the mother's breast. There is no genuine reason to believe that they should count any less than the longer-term goals of persons.

Philosophers have thought otherwise because they have been immediately struck by a consistency problem. If we allow the short-term desires of *non*-persons, such as a late-term fetus and a newborn, to have equal significance to the long-term aims of *persons*, then we must concede that it is also wrong to kill animals. Yet most meat-eaters are untroubled by the fact that animals have been killed to provide their food. If we react by claiming that the late-term fetus and newborn are different from animals, we are guilty of speciesism, which is as bad as racism. The only other option, it seems, is to give up killing animals. This is the primary consideration that drives Giubilini and Minerva, and the

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philosophers whose work has influenced them, to assert that we do no harm to a newborn if we kill it.[i]

The place of instinct and emotion in our moral framework

However, the analogy between speciesism and racism is faulty. It assumes that the protection we afford to our own flesh and blood is, like racism, the product of false *beliefs* or *faulty reasoning*. In fact, however, there is something primal about protecting our own flesh and blood, about the value we place on their wants and needs. These are the product, not of reasoning, but of instinct, and the emotional attitudes bound up with that instinct.[ii] One obviously fundamental emotional attitude is that of love for one's offspring.

The authors might respond: 'Why is that relevant? Instinct and emotional bonds have no place whatsoever in moral discussion, for they tell us nothing about how we *ought* to respond to our newborns, and towards animals.'

But the point is that there is a limit to the kinds of practices and attitudes we adopt that can meaningfully be subject to moral scrutiny. That we care for our own offspring (more than, say, the offspring of other animals) is as natural to us as walking upright, so it makes just as little sense to question whether we ought to care for our own offspring in this way as it does to question whether we ought to walk upright.[iii] The fact that we are rational creatures and can think about what we do, and about whether we *ought* to continue to do what we do, has important limitations. I can reflect on whether I ought to have more or fewer children, but not on whether, having *had* a child, I should care for the newborn any more than I should care for a fox. It is reasonable to consider someone who asked themselves that question to be demonstrating a kind of madness. How we care about our own can be as instinctive and as necessary to us as the need to eat, something we just cannot help but do. The terrible pain and grief of those who have lost loved ones is testimony to this. Lives can be irreparably shattered when a daughter is murdered or killed in a car accident or a toddler is snatched never to be seen again.

My claim is, then, that these facts about our maternal or paternal instincts and our consequent emotional make-up are background conditions which have served as the basis for the erection of moral norms, such as the norm that we ought not to kill our offspring. Our lives are defined in large part in terms of our relationships with our loved ones and, especially, our offspring. The value we afford to human life therefore stems from the central role our loved ones play in our lives, and the meaning they give to them.

There are, of course, occasions where the mother does not bond with her newborn. But those exceptions are not the rule, and they illustrate an important lesson of my account: our norm that it is wrong to kill a newborn is erected on the basis of instincts and accompanying emotional attitudes that most of us share, and it is by appeal to those norms that we condemn mothers who seriously want to kill their babies or who feel no emotion at the prospect of doing so. But if many of us no longer wanted our children, or started to feel nothing for our offspring, we might abandon the norm. To that extent, our moral system remains contingent, rather than necessary. But there is no more reason to believe that such a whole-scale change is likely than there is to believe that we might all wake up one day being able to fly.

OBJECTIONS AND REPLIES

Objection from earlier practices of infanticide

It might be objected that earlier (and some current) practices of infanticide undermine my claim.[4] Two important points should be noted in reply. First, the practice can be misleadingly described. In hunter gatherer societies, infanticide was practised out of material necessities we can only imagine. When more young were born than could be raised, or seriously ill children were born, those societies did not have the options we have today. The availability of such options can bring about a shift in our expectations, and therefore in the norms we are willing to adopt. Further, in some cases, ceremony and grief accompanied the practices, representing an acknowledgement that infanticide was not taken lightly. Sacrifices to supernatural figures might be read as primitive superstition, but an alternative way of reading these practices is to see them as the implementation of momentous decisions that is, as practices whose ceremonial nature reflects the significance the participants attributed to the decision being taken. Further, even accounts that do not refer to religious ritual may be misleading. For leaving a child on a mountain top is not like leaving a child on a rubbish dump.

Second, it is important to recognise that little is known about the real psychological impact on mothers who sacrificed children out of social necessity, such as on the basis of gender. Social pressures may of course have an impact on how a mother might regard the birth of a girl, but it would be foolish to assume that infanticide in such cases is as easy for the mother as stepping on a snail, that she does not experience conflict or deep emotional and psychological torment in doing what she nonetheless feels she is compelled to do.

Philosophers are prone to over-rationalise things. Giubilini and Minerva state in a recent post[3] that their paper 'was meant to be a pure exercise of logic: if X, then Y'. But insufficient attention is given to the conditioning role our instincts and emotions play in the formation of our morality. Singer famously uses the example of orphans in his discussion, to avoid what he sees as the obscurity that might otherwise be introduced into the debate by the emotional ties of the parents.[4] But this is a mistake. It is true that emotions *can* cloud moral debate, and can be the proper target of criticism. But in some contexts, consideration of emotions is essential because they help reveal rather than conceal the moral status of the entity towards which those emotions are directed.

Contrast, here, the way in which philosophers sometimes simply cite the fact that infanticide has been widely practised, with the following harrowing account of maternal suffering given by Dr Brian Hoolahan, an obstetrician in Nowra, Australia, who witnessed babies taken from unwed teenage mothers during a policy of forced adoption between the 1940s and 1970s:

> I remember the girls calling out 'I just want to touch my baby, please let me see my baby' and they were crying and howling and it was the most horrific thing I've ever seen in my life.[iv]

The pain, anguish and unimaginable enduring grief these mothers suffered all go to show the meaning of having a baby in human life, the central place it has in our emotional make-up. It

[i] We might still wrong an animal if we cause it pain in killing it. But the wrong of killing animals that are not persons differs from the wrong of killing animals that are persons.
[ii] Can't racism be instinctive, as with the instinctive mistrust of one tribe for another? See 'objections and replies' below.
[iii] This is only an analogy I am not implying that it is morally wrong to walk on all fours!

[iv] *Sydney Morning Herald*, 28 February 2012.

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is hard to believe that these responses are the product merely of culture, and do not run deep in us, down to the foundations of our being. These instinctive responses to the birth of one's child are the sources of its moral value.[v] It is senseless to ask if these mothers really ought to be having that kind of response to their children whether, for example, they should feel the same way about the mice they set a trap for in the kitchen cupboard. It is because our offspring are so important to us that we set up the norm that it is wrong to kill our newborns and this explains why we care for their wants and needs.[vi]

Does this account overlook the importance of reasoning one's way to a moral position?

It might be objected that my account places undue emphasis on our emotional attachments. A common moral failing is to act out of emotion rather than out of properly reasoned considerations. In making our capacity to form attachments to our offspring central to my account, am I not ignoring this common failing? Am I not also overlooking the role that reasoning rather than emotion should play in moral discussion?

My appeal to our instincts and emotional attitudes such as our love for our offspring to explain why we regard ourselves as owing moral responsibilities to a newborn is not equivalent to, or on the level of, an appeal to specific objective capacities in the infant. Rather, it is a more general elucidation of the meaning and place that childbirth and childrearing have in human life and the limits these phenomena place on the serious entertainment of some proposals from within our moral framework. My argument is that these phenomena what I have called the background conditions of our moral norms serve as *disqualifying conditions* for the serious entertainment of some proposals. For example, given the reaction of the Nowra women, the proposition that we should seriously entertain sacrificing our newborn healthy infant for the sake of a mouse, or the proposition that those women should care equally for the mouse as they do for their newborn son or daughter, are not ones we can take seriously.

Clearly this raises the question of how we draw the line between those fundamental background conditions of our moral framework (which disqualify the serious entertainment of some possibilities), and the kind of natural propensities and instinctive reactions we have that are the proper subject of moral scrutiny. This question is too large to address here, but a short reply is that it depends on the proposal concerned but we know an example when we see it. The proposal that a mother ought to be allowed to kill a healthy newborn if she does not want it is, I am claiming, such a proposal. (On the difference between an embryo and a later-term fetus or newborn infant, see the conclusion below.)

Could the argument justify racism?

Does my emphasis on the role of instinct as a background condition of our moral norms mean that racism could be explained in the same way? For example, is it not instinctive for one tribe to mistrust another? This objection has partly been addressed in the last paragraph of the previous section, but two other points are noteworthy. First, instinctive mistrust does not always result in racist practices, as Australian Aboriginal norms for dealing with visitors from another tribe make clear.[vii] Further, mistrust, if it is to endure, will be based on beliefs. Second, racism is not comparable to the instinct to preserve and look after our young, for it simply has not been as endemic. The response of the Nowra women whose children were taken from them does not merely exhibit an attitude or set of beliefs that, through education and rational reflection, can be changed. Their reactions are far too immediate, visceral and deep for that. Racism, by contrast, is different, often being backed up by utterly false beliefs about the superior capacities of one's race beliefs that are therefore amenable to being changed.

CONCLUSION

I have advanced two arguments. I have said that we need to broaden the notion of harm beyond personhood to the immediate desires and needs of a newborn human being. I have then claimed that this does not commit us to speciesism, because it is based *not* on false assumptions or beliefs about the capacities of other species versus those of our own, but on deep instincts and our emotional make up. These general features of our own nature and our relationship with our own flesh and blood lead us to set up the norm that it is wrong to kill our newborns, and so account for why we regard it as morally wrong to kill them. In that sense, they are the background condition of the moral value that we afford to the newborn.

Readers should note the limited reach of this claim. The claim made in this paper is only about the background conditions which limit the possibility of meaningfully questioning whether we ought to have norms reflecting our instinctive attitudes of love and concern for our own offspring. It does not follow from this, however, that the *absence* of any similar instinctive attitudes of love and concern towards animals means we have no responsibilities towards them.[viii] Indeed, it is precisely the absence of any similar instinctive attitudes of love and concern that opens up the space for a genuine moral debate about what our responsibilities to animals ought to be.

Finally, would the arguments presented here also apply to the fetus? I believe they would apply to later-term fetuses. I do not, however, believe that they necessarily apply to the earlier-term fetus or to the embryo. This has partly to do with the nature of the maternal and paternal bond with the developing embryo and fetus, and our sense that, at the early stages, our baby is *only in the making*. Generally speaking, our attachments to our kin form gradually as we become used to the news of a pregnancy and as we start to anticipate life with the baby. The later the term in a pregnancy, the stronger our attachments and responsibilities are likely to be, as a general rule. This is one reason why we might have come to consider a late-term

[v]This point is not affected by the rare occurrence in which a mother feels nothing for her baby, as already discussed above. It is the *norm* that makes it wrong, not the particular mother's state.

[vi]It might seem that this view comes close to one view taken by Singer,[4] who claims that, while we cannot wrong a healthy newborn by killing it (because it is not a person), we may still wrong the parents by killing it. But Singer's view seems to mean that infants only have moral protection if they are, as it were, caught by the lasso of emotional attachment. On my position, it is a moral failure not to love the child and a wrong to the child.

[vii]Many Australian Aboriginal tribes have norms and customs for welcoming visitors from, and regulating engagement with, other tribes, and being of a different tribal group is no barrier to full integration into their tribes, to the point of being regarded as a family member, with rights and responsibilities under local tribal laws.

[viii]Some philosophers would question whether it is not possible to love animals in precisely the same way. Space prevents me from answering this objection adequately here, but it seems that our love of our own kin is of a different kind from the love that someone shows an animal. For discussion of these differences, see Gaita.[5]

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abortion objectionable why we might consider a mother who wants an abortion at that late stage, without a medical reason, to be exhibiting a callous disregard for her offspring. Such a reaction would naturally only intensify once the child is born, and a mother wanted to kill it. Birth marks the moment our offspring come into the world. The special moment of childbirth and the joy of holding your son or daughter for the very first time are *monumental* events in human life. It is at this point that so much of[ix] our responsibility towards them our very life with them truly begins. It is understandable that birth should therefore be regarded as a moment of no return, the point at which it is too late to consider options that might have been conceivable to us before this point. These facts are capable of explaining why we adopt different rules in the case of newborns from the rules we adopt in the case of the unborn child they at least show that it is not irrational to adopt different rules for these cases and, to that extent, go some way to answering the inconsistency challenge raised by Giubilini and Minerva.

[ix]Note I say 'so much of'. I don't deny that we have *some* responsibilities towards our unborn child for example, the responsibility to refrain from drinking alcohol. I am only saying that *so much more* responsibility begins at birth. At this time, a mother has to feed the child for the first time manually, and so must actually make conscious decisions to do so. She must protect the baby from danger, not leave it in a cot on its own for too long, ensure it is warm enough, is suitably occupied when it requires attention, etc. These issues do not arise during a pregnancy, when we rightly regard the mother as *preparing* for parenthood.

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THE POTENTIALITY OF THE EMBRYO AND THE SOMATIC CELL

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Abstract: Recent arguments on the ethics of stem cell research have taken a novel approach to the question of the moral status of the embryo. One influential argument focuses on a property that the embryo is said to possess—namely, the property of being an entity with a rational nature or, less controversially, an entity that has the *potential* to acquire a rational nature—and claims that this property is also possessed by a somatic cell. Since nobody seriously thinks that we have a duty to preserve the countless such cells we wash off our body every day in the shower, the argument is intended as a reductio ad absurdum of the claim that the embryo should be afforded the same moral status as a fully developed human being. This article argues that this argument is not successful and that it consequently plays into the hands of those who oppose embryonic stem cell research. It is therefore better to abandon this argument and focus instead on the different argument that potentiality, as such, is not a sufficient ground for the creation of moral obligations towards the embryo.

Keywords: bioethics, embryo, extrinsic potentiality, inner power, intrinsic potentiality, moral status of the embryo, potential, potential person, rationality, rational nature, somatic cell, somatic cell nuclear transfer, stem cell, stem cell research.

1. Introduction

Recent arguments on the ethics of stem cell research have taken a novel approach to the question of the moral status of the embryo. One influential argument focuses on a property that the embryo is said to possess—namely, the property of being an entity with a rational nature or, less controversially, an entity that has the *potential* to acquire a rational nature—and claims that this property is also possessed by a somatic cell (Sagan and Singer 2007). Since nobody seriously thinks that we have a duty to preserve the countless such cells we wash off our body every day in the shower, the argument is intended as a reductio ad absurdum of the claim that the embryo should be afforded the same moral status as a fully developed human being.[1] In this article, I argue that this argument is not

[1] The example of skin cells sloughed off in the shower comes from Bailey 2001.

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successful and that it consequently plays into the hands of those who oppose embryonic stem cell research. The argument fails because it arises from conceptual confusion about the operation of the concept of potentiality. By exposing that confusion here, my aim is to persuade advocates of the permissibility of stem cell research to abandon the argument. My claim is not that those who advocate the importance of the potentiality of the embryo are correct and that stem cell research should therefore not be permitted. Rather, my claim is that criticism of that position based on arguments about the respective potentialities of the embryo and of the somatic cell is not successful and so does not succeed in refuting the case made by opponents of embryonic stem cell research.

2. If We Call the Embryo a Being with a Rational Nature, Is the Somatic Cell a Being with a Rational Nature?

The concept of potentiality has played a crucial role in arguments about the nature of the embryo, from which conclusions as to its moral status have been derived. The basic use more recently made of this notion is that the embryo is a being with a rational nature because, unlike, say, lizard embryos, the embryo will develop a capacity to exercise that intrinsic rationality (Lee and George 2006; George and Lee 2009a and 2009b; George and Tollefsen 2008, chaps. 1 and 3). This, it has been claimed, gives the embryo a special moral status that justifies ruling out embryonic stem cell research, which would result in the destruction of such embryos (Lee and George 2006; George and Lee 2009a and 2009b; George and Tollefsen 2008, chaps. 1, 3, and 4). It is, of course, possible to question the claim that the embryo *is* a being with a rational nature (Sagan and Singer 2007, 276). One might insist, instead, that it is merely a being with the *potential* to develop a rational nature.[2] Nonetheless, even if this qualification is accepted, one can still say that the embryo "is" a being with a rational nature to the extent that, unlike a lizard embryo, it has the potential to become a fully rational being and, in the absence of any disabling conditions, will go on to develop into such a being. So not much turns on whether we say the embryo *is* a being with a rational nature or whether we say it is a being with the *potential* to become a being with a rational nature, for on both ways of expressing the point, the embryo can be differentiated from the embryos of lizards. Since the potentiality for rationality is the basis for saying that the embryo "is" an entity with a rational nature, criticisms of this claim by proponents of the permissibility

[2] A separate controversy is that of the point from which an embryo could be said to have the potential to develop into a being with a rational nature. If we grant that potentiality is significant, does it have that potentiality from conception or from some later time? The possibilities of embryo splitting and twinning might speak against this possibility, but it is outside the scope of this article to enter into that controversy.

of embryonic stem cell research have tended to focus on the putative significance of the *potentiality* of the embryo.[3]

Agata Sagan and Peter Singer have confronted the argument that the embryo is morally significant by reason of its potentiality to develop into a fully self-conscious rational being (Sagan and Singer 2007). They claim that the same potentiality to develop into a fully self-conscious rational being is possessed by embryonic stem cells and somatic cells, the countless cells we rub off our bodies in the shower every morning. It is the claim about the somatic cell that I focus upon in what follows.[4] With this point, Sagan and Singer develop an argument that was first advanced by Ronald Bailey, who stated: "Each skin cell, each neuron, each liver cell, is *potentially* a person. All that's lacking is the will and the application of the appropriate technology. Cloning technology like that which famously produced the Scottish sheep Dolly in 1997 could be applied to each of your cells to potentially produce babies" (Bailey 2001). It is essential to note the breadth of this claim. Bailey is speaking not only of adult stem cells but of "*every* cell in your body" (Bailey 2001, emphasis in original).

To develop the argument, Sagan and Singer begin by claiming that the concept of intrinsic potentiality, as used by opponents of embryonic stem cell research, is problematic and that it is not clear, on its current use, that we can meaningfully refer to anything like the intrinsic potentiality of the embryo to develop into a mature adult. They then claim that, even if the concept were not problematic, it would apply to the somatic cell just as much as to the embryo. I shall examine each of these arguments in turn.

2.1. Does the Embryo Really Have the Intrinsic Potential to Develop into a Mature Adult Human Being?

2.1.1. Intrinsic Potentiality and Enabling Conditions or Disabling Conditions. Sagan and Singer focus initially on the concept of intrinsic potentiality to support their argument: "[Lee and George] appeal to a special sense of potentiality—parsed as 'active disposition or intrinsic power'—to

[3] Sagan and Singer (2007, 275) note that the concept of "development" on which Lee and George rely to support the claim that the embryo *is* an individual with a rational nature is not sufficiently distinct from the concept of potentiality.

[4] Having noted that the potentiality is also possessed by an embryonic stem cell, Sagan and Singer (2007, 269) imagine provisionally evaluating different kinds of cells on the basis of their ability to develop to maturity, with adult stem cells ranked below embryonic stem cells but above somatic cells. But, as we shall see, they expressly disavow any significant difference between the potentiality of the somatic cell and that of other cells. Furthermore, with respect to the embryonic stem cell, it should be noted that its potentiality comes too late for the purposes of the embryonic stem cell debate, because it has that potential only if embryonic stem cell harvesting is permitted, yet whether such harvesting should be permitted is the very issue being debated. For other arguments against Sagan and Singer's position on the embryonic stem cell, see George and Lee 2009a.

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distinguish the embryo from the somatic cell" (Sagan and Singer 2007, 273).[5] Yet the concept of intrinsic potentiality is, they say, problematic because it seems to exclude factors that are relevant to whether, in a particular case, we can say that the being in question really has such a potential or not.

Sagan and Singer begin the argument by discussing the case of embryos produced by in vitro fertilization (IVF). These are the embryos that would be used by scientists to obtain embryonic stem cells. Sagan and Singer deny that we can say of IVF embryos that they have an intrinsic potential to develop into mature human beings, on the basis that "very few of them will have the chance to develop into mature human beings" (2007, 274). This is because most of these embryos are surplus and thus unwanted by the mother to whom they are genetically related. For such embryos to develop into maturity, it would be necessary to find a woman willing to have the genetically unrelated embryos implanted into her, and then have scientists carefully thaw the embryo and transfer it to the woman's uterus. Yet "there are hundreds of thousands of them" (274). This difficulty leads Sagan and Singer to make the following assertion: "The 'intrinsic power' of the embryo in these circumstances is impotent—*in other words*, *there is no such power*" (274, emphasis added).

The point here is that because there are hundreds of thousands of these embryos, the vast majority of them are not going to be implanted, and so will not develop into mature human beings. And any that are implanted in any case need the assistance of technology. To speak of their "intrinsic potentiality" to develop into mature human beings is therefore confused: they do not *have* such an intrinsic potentiality. They would only have such

[5] Note, however, that having acknowledged in this passage that Lee and George use intrinsic power to distinguish the embryo from the *somatic* cell, Sagan and Singer (2007, 274) deny there is a "sharp distinction" between the embryo and the *stem* cell. The use of the term "stem cell" here is intriguing, because it is broad enough to cover embryonic stem cells, some somatic cells that are adult stem cells (though of course the *adult* stem cell, unlike an *embryonic* stem cell, is not totipotent), and *reprogrammed* somatic cells—that is, somatic cells that are not stem cells until they have been reprogrammed in the egg (or with induced pluripotent cells, in the lab)—and so the term "stem cell" is ambiguous. But in the passage Sagan and Singer are criticising, Lee and George are expressly dealing with the potentiality of the *somatic* cell before any manipulation or reprogramming, and Sagan and Singer acknowledge this when beginning their argument by stating that there is "a more fundamental problem with the basic argument Lee and George present, even as applied to *somatic* cells" (2007, 273, emphasis added) and referring to "their argument that the potential of the embryo is different from the potential of the *somatic* cell" (275, emphasis added). This means that it is essential, when assessing the concept of intrinsic power, to be clear about what entity we are dealing with. Sagan and Singer's glide from the use of "somatic cell" to the use of the ambiguous term "stem cell" perhaps betrays the difficulty they have in maintaining the argument in the case of the somatic cell, where that term refers to all cells in my body except germ cells. To successfully challenge Lee and George's argument about the difference between the embryo and the somatic cell, however, Sagan and Singer must of course claim that the somatic cell—that is, any cell except a germ cell—itself has the same intrinsic power Lee and George attribute to the embryo.

a potentiality if they were implanted. One might object that this point is question begging, because the existence of frozen embryos outside the womb has created this situation and so cannot be used to assess the intrinsic power of the embryos in a more natural situation. Sagan and Singer anticipate this objection, however, and respond by claiming that there is nothing unusual about natural embryos failing to implant and being flushed out of the uterus (2007, 274). They therefore turn, by anticipating this objection, to the case of natural embryos.

The natural embryo, they say, is not in a position different from that of the surplus IVF embryo. Just as an IVF embryo requires a suitable environment—a woman willing to accept into her body an embryo that is not genetically related to her—so a naturally produced embryo must likewise find its way to a suitable environment, namely, the womb. But its successful implantation in the womb is not a foregone conclusion at all. It is therefore misleading to refer to its intrinsic potentiality.[6] And for the same reason, they suggest, there is no "sharp distinction" between the so-called intrinsic power of the embryo and the power of the somatic cell to develop to maturity. For in each case what determines whether the entity has the power or not to develop to maturity are the *circumstances*, and whether these are favourable or not (Sagan and Singer 2007, 276).[7] And given our abilities to control and manipulate those circumstances, we can make it the case that a somatic cell, just as much as an embryo, can develop into an adult human being. This possibility therefore seems to reduce any difference between the potentiality of the embryo, on the one hand, and the potentiality of the somatic cell, on the other, and so makes it problematic to try to distinguish the embryo from the somatic cell by appealing to the notion of intrinsic potentiality. Katrien Devolder and John Harris make a similar point: "*Defining* potentiality as an *all-or-nothing* matter *solely* dependent on an entity's inherent dynamic to become a human ignores the immense importance of diverse external factors that play a role in the actualisation of this potential" (Devolder and Harris 2007, 158, emphases added).

I acknowledge, of course, that "external" factors play a role in the development of the embryo. But these are enabling conditions that allow the intrinsic potentiality of the embryo to actualise itself. For this

[6] Note, however, that their attempt to answer this objection may be weakened by their own concession that "about 30 percent spontaneously miscarry" (Sagan and Singer 2007, 272). If this figure is correct, one could not say in the case of embryos created naturally that the vast majority of them will fail to develop to maturity, and this would frustrate the parallel they purport to draw between IVF and natural embryos. However, Douglas and Savulescu (2009, 308), relying on different scientists, have stated that "more than 50% of embryos die within eight weeks of conception." If this figure is correct, Sagan and Singer's parallel could be drawn. But for reasons we will now see, it would not show that referring to the intrinsic potential of the embryo to develop to maturity is problematic.

[7] On whether a child was ever a somatic cell, see Sagan and Singer (2007, 273) and their analogy with the pelargonium.

reason—contrary to what is suggested by Devolder and Harris and, as we have seen, by Sagan and Singer—these external factors should *not* be included in the *definition* of potentiality, as though that definition, as currently used when referring to the intrinsic dynamic of an entity, were incomplete for failing to mention those enabling conditions. The enabling conditions are the background conditions that we take for granted when we refer to anything like the intrinsic potential of an entity, and so do not form part of what we mean when we speak of an entity's "intrinsic potentiality." While true, it is no qualification to the statement that a car "can" do 100 m.p.h. that it must nonetheless have fuel in the tank,[8] as though the statement is somehow incomplete or inaccurate without the qualification. When referring to that potential, the circumstances in which such a potential must unfold are already taken as given.[9] But by claiming that in the case of both natural and IVF embryos the vast amount of wasted embryos means that there is no such "inner power" of the embryo to develop into a human being, Sagan and Singer conflate the intrinsic power of the embryo with the conditions necessary for that power to become actualised.[10]

But could Sagan and Singer retort that if the conditions are not satisfied, then the embryo simply does not *have* the relevant potential? We need to distinguish different cases here. In the case of the IVF embryos, for instance, we do not know in advance which embryos are going to be implanted and which are not, so we simply cannot say on anything more than a general level whether the enabling conditions for the actualisation of their potential are going to be satisfied or not. That means that we cannot say of any particular embryo in advance that it does not have the potential to develop into a mature human being. On the contrary, we say that every such embryo, by virtue of being an embryo, has the potential to become a mature human being, unless the enabling conditions for the actualisation of that potential are absent or disabling conditions are present.[11] Sagan and Singer, by contrast, effectively want to say: every

[8] This example is taken from Hacker 2007, 94.

[9] This point explains away an apparent inconsistency that Sagan and Singer appear to identify in our definition of the term "embryo." Noting that "the very concept of something being an 'embryo' suggests that it has the capacity to, or is likely to develop into some more mature stage," they remark that the term is also applied to entities that, owing to some defect or accident, "have no possibility of developing to maturity" (Sagan and Singer 2007, 266). As I shall explain, disabling conditions or the absence of enabling conditions account for why we still apply the term "embryo" to these entities even though the very concept of an embryo suggests the capacity to develop to maturity.

[10] In section 2.2 we shall see why there remains a difference between the potentiality of the embryo and that of the somatic cell. For the moment, I only wish to clarify the concept of intrinsic potentiality by differentiating it from the enabling conditions of its realisation.

[11] In the case of leftover IVF embryos donated for the purposes of stem cell research, we do know that these embryos will not be implanted (unless a genetically unrelated willing mother is found), but for reasons I shall now explain, what it means to say of such embryos

such embryo *only* has the potential to become a mature human being *if* the enabling conditions are satisfied or disabling conditions are absent. But the difficulty with this formulation is that it dispenses with potentiality altogether. For we can only *know* if the conditions are satisfied once the potential has been fulfilled, but at that stage we are dealing with an actuality, not a potentiality. The very idea of potentiality requires a judgement in advance of its fulfilment, but if we say embryos only have the relevant potential *if* the enabling conditions are satisfied, it would be premature to make any statement about potentiality in advance of the satisfaction of those conditions, yet once the conditions are satisfied it is already too late to speak of potentiality.

On the other hand, once we know in a particular case that the enabling conditions are permanently absent or disabling conditions are permanently present, we can say that *this* embryo will not develop into a mature human being (and so does not have the potential so to develop).[12] But what is meant by saying in such a case that the embryo will not develop into a mature human being (and therefore that it does not have the potential to develop into maturity) is precisely that one of the enabling conditions necessary for it to do so is absent (or disabling conditions are present), not that it is not the kind of being that develops into a mature human being. This is unlike saying that a lizard does not have the potential to fly or to speak several languages. In a given case, we do not think that anything has gone wrong when, referring to a particular lizard, we recognise that it will never fly. Enabling or disabling conditions simply do not enter into the equation at all in respect of such a lack of potential. By contrast, if a particular human embryo has been permanently damaged, we recognise that something has gone wrong, and we differentiate the case of the human embryo from the case of the lizard embryo precisely by recognising that what prevents the intrinsic potentiality of the human embryo from developing rationality (and so what it means to say of such an embryo that it does not have such potential) is the presence of disabling conditions. And if instead of permanent damage we are concerned only with a particular IVF embryo that will not be implanted, then enabling conditions are not present and the absence of these conditions permanently prevents it from actualising the potential that it has—and in that sense we can say that it does not have the potential *provided* we realise that

that they do not have the potential to develop into rational creatures differs from what it means to say the same thing of a lizard embryo. Strictly speaking, the embryos have the potential to develop rationality, but enabling conditions are not present to facilitate this and only in *that* sense do they lack the requisite potential. This point is explained in detail in the text.

[12] Enabling conditions might be the presence of a suitable environment for the development of the embryo, such as a womb. Disabling conditions, by contrast, might be the presence of a defect in the embryo that prevents it from developing to maturity. Examples of the latter are discussed below.

we are in such a case *only* referring to the absence of the conditions necessary for that potential to become actualised.

Whether the fact that enabling conditions are absent or disabling conditions are present means that such an embryo has lost any moral status claimed for it is, of course, a separate question. The point, for now, is simply that what it means to say of a lizard embryo and a human embryo that neither has the potential to develop rationality is different in each case. In the case of the lizard, it means that it simply has no potential, in virtue of the kind of being that it is, to develop rationality. In the case of a human embryo, by contrast, it has no potentiality either because of some permanent defect (by reason of what I am calling the presence of disabling conditions, making it a permanently defective embryo) or because it will not be in the right environment (by reason of the absence of enabling conditions).[13] The case of the somatic cell is more like the case of the lizard embryo because when we rub off our skin cells in the shower and they fail to develop into embryos, this is not because anything has gone wrong, as though disabling conditions have prevented them from becoming mature adult human beings, or because they have not found their way to a suitable environment. The somatic cells in their mature form do not have an intrinsic potential to self-develop into an adult human being, because the cells have become specialised to fulfil the different functions that natural selection has programmed them to fulfil.[14] They merely have the *extrinsic* potential to develop into an adult human being, that is, through scientific intervention involving the application of technology to confer on to them properties that they do not currently possess. I return to extrinsic potentiality in section 2.2.

At one stage in their article, Sagan and Singer invite us to consider the case of a defective embryo for which we had the means to remedy the genetic defect and make the embryo normal. Such a case would be one in which the potential remains because the damage is only *temporary*. In this case, they claim, "it would still be the case that the embryo's power to develop was not 'intrinsic' to it, and it was unable to 'self-develop'" (Sagan and Singer 2007, 276). They could therefore argue that if, as I am suggesting, we say merely that the presence of the defect is a disabling condition, we seem to be implying that it has an intrinsic potentiality locked within it, and that this has been somehow disabled or deactivated. But if the defect is there from the very beginning, it is surely more accurate to say that this

[13] Could it be said that the permanently defective embryo is in exactly the same position as entities that do not have the potential as a matter of their species nature? There is no harm in saying so, provided that the differences are not thereby concealed: in the case of the lizard embryo that has no such potential by means of its species nature, the lizard is not *lacking* anything it would normally have, and that is why it makes no sense to regard the absence of a potential for rationality as a *defect*. Not so in the case of the human embryo.

[14] I discuss the relevance of the possibility of *reprogramming* the cells, and the implications this has for the concept of intrinsic potentiality, in section 2.2.

particular embryo simply does not, and never did have, an "intrinsic" potentiality to self-develop—until the remedial action to make it normal is taken. Only the remedial action would give it this potentiality—but it would be extrinsic, not intrinsic. But if I conceded that this is more accurate, they could then argue that this concession would mean that the defective but remediable embryo is in the position of a somatic cell, which also needs action to be taken for it to develop into a human being. Alternatively, if on my account we say that it *did* have the potential from the beginning, and that its possessing that potential is the very thing that makes it possible to remedy the defect and make the embryo normal, why are we not forced on my account to say precisely the same thing of the somatic cell? Such an embryo is surely akin to a somatic cell, so the argument runs, for in both cases external technological intervention is capable of giving both these entities the "potential" to develop into adult human beings.

The difficulty with this analysis, however, is that it again fails to account for the difference between a *defective* entity, on the one hand, and a normal, non-defective entity (that can be altered via the application of technology), on the other. We understand the nature of an entity partly by reference to what it has been designed by natural selection to do, and it is by taking into account its function or role that we are able to identify certain differences precisely as *defects*. A hand that cannot clasp is defective because a significant function of the hand is to clasp objects. It is against our understanding of what the hand is for that we are able to call an inability to clasp a defect or disability of some kind and, where possible, seek to "remedy" it. In saying that the hand "cannot clasp" it is more accurate to say that a disabling condition or a defect has prevented the hand from developing in such a way as to fulfil the function it was designed by natural selection to do.[15] The word "intrinsic" in "intrinsic potentiality" is misleading because it implies the presence of some mysterious power in the entity in question that remains somehow locked away and therefore incapable of expressing itself, whereas it is merely a way of referring to what the entity has been designed by natural selection to do, what it does, or is for, once it reaches maturity. And a fully functioning human embryo develops into a mature human being. That in some cases external intervention may be required to remedy a defect so as to enable it to fulfil its potential does not make it analogous to the somatic cell, for the somatic cell such as a skin cell has developed to fulfil the function of forming the skin of the adult human being, and its fulfilling that function is no defect on its part. Any potential it now has *in its mature form* to fulfil

[15] No religious or metaphysical presuppositions should be read into this talk of "design" in the case of natural selection. It is well recognised that no bogus metaphysical teleology need be implied by this talk of natural selection and the function of various organs. For detailed discussion of these issues, and the continued relevance of teleological concepts in science, see Hacker 2007, chap. 6.

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a *different* function is, for that very reason, extrinsic rather than intrinsic to it, and so action taken to fulfil any such extrinsic potential cannot be described as *remedial*. It is for this reason that we mark the difference between an entity that is defective (and so cannot become what it is designed by natural selection to become) and one that is not by reference to the distinction between intrinsic and extrinsic potentiality. In a case such as that envisaged by Sagan and Singer where the defect in a human embryo can actually be remedied, the intrinsic potential has not been lost or transformed into merely an extrinsic potential;[16] since the defect can be remedied, the entity still has the intrinsic potential it has when it is not defective. It is just that the disabling conditions that currently prevent it from fulfilling that potential need to be removed. We can say that the embryo has the intrinsic potentiality to develop rationality in this case, even though external intervention to remedy the defect is required, because the defect can be removed. It is therefore better to understand the defect as a disabling condition so as to differentiate it from the kind of activity involved when transforming the somatic cell into an embryo. In the latter case, the transformation changes the nature of the entity (from a skin cell to a reprogrammed stem cell) and in no way removes a defect.

Sagan and Singer might respond to this contention by claiming that the human somatic cell is in exactly the same position as the human embryo in that the human cell contains the human DNA necessary to produce a mature human being. It should be noted, however, that containing that human DNA is not sufficient to refute the above defence of the distinction between intrinsic potentiality and the conditions necessary for its fulfilment, and between intrinsic and extrinsic potentiality: for in the case of the lizard embryo, there is no *extrinsic* potential to become an adult human being, still less an intrinsic potential to become an adult human being. It is the presence of human DNA in human somatic cells that allows us to say that the somatic cell has the extrinsic potential to develop into a mature human being. But if that DNA allowed us to say that the somatic cell has the *intrinsic* (rather than extrinsic) potential to develop into a mature human being (as has the human embryo even with the temporary defect), it would mean that every somatic cell in your body is actually an embryo and that disabling conditions have prevented it from becoming an adult human being. But it is surely not plausible to consider the specific functions of each organ in the body as the manifestation of a disabling condition preventing every cell in your body from having become a mature adult human being. We shall return to the distinction between intrinsic and extrinsic potentiality in more detail in section 2.2.

[16] Contra both Sagan and Singer (2007 and 2009) and Devolder (2009, 1287), who claims that a damaged but reparable embryo "does not have the intrinsic potential to develop into a [mature] human being."

2.1.2. Should Intrinsic Potentiality Be Defined in Terms of Notions of Probability? It is noteworthy that, in denying that IVF embryos have the potential to develop into mature adults on the basis that the "vast majority" of these embryos will not be implanted, Sagan and Singer's arguments are tantamount to the recommendation of a redefinition of "intrinsic power" to mean that which would become realised in the vast majority of circumstances. We should not, they are effectively saying, refer to the intrinsic potentiality of an embryo to mature into an adult when the vast majority of those embryos will not mature into adults.

But notice how much of our way of categorising the world would change if we adopted the recommendation. When a tree produces far more seed than will actually take root or a frog produces far more spawn than will actually grow into adult frogs, this does not mean that we cannot refer to the intrinsic potentiality in any seed and spawn to become a mature adult in each case. We do not, instead, refer to their intrinsic potential to mature into food on account of the fact that seed and spawn in such cases are more likely to be eaten than they are to mature into adults. Yet on Sagan and Singer's criterion for intrinsic potentiality (as being a result that happens in the vast majority of cases), this is precisely how we ought to talk—we might need to speak of an intrinsic potential to become food rather than an intrinsic potential to develop into maturity. But this is clearly absurd. Indeed, in some species of termites, reproductive termites develop wings that they use to leave the termite mound. Assume that many more termites are eaten than actually take off from the mound. On Sagan and Singer's recommendation, it makes no sense to speak of the termites' intrinsic potential for flight in such a case, *even though they have wings*. On the contrary, they can only fly "in favourable circumstances," those circumstances in this case being the absence of a predator ready to eat them as they emerge from the mound.

But Sagan and Singer have simply conflated potentiality with the enabling conditions for its realisation and the disabling conditions for its nonrealisation when effectively recommending that we refer only to an intrinsic potentiality where that potentiality can be realised in the vast majority of cases.[17] Accordingly, their case for allowing stem cell research becomes weakened by this confusion, and, once again, they play into the hands of their opponents.

[17] Note that there is nothing wrong, per se, in recommending that concepts be redefined (thanks to Dominic Wilkinson for prompting me to clarify this point). The point is that the recommendation must not stem from confusion, and arguably it does in this case. Also, once it is admitted that a recommendation is being made that a distinction be abandoned or a concept be redefined, then it is clear that the recommendation is being made for the moral purposes they seek to advance, rather than reflecting a priorly existing concept or distinction *already having* moral relevance. It is difficult not to see some circularity in attempting to derive moral conclusions from the recommendation.

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2.2. Does the Somatic Cell Have Exactly the Same Potential to Develop into a Mature Human Being as Does the Embryo?

In section 2.1, I focused primarily on the concept of intrinsic potentiality, and, in particular, on the difference between intrinsic potentiality and the enabling conditions for its realisation, or the disabling conditions for its realisation. It is, I have contended, Sagan and Singer's failure to appreciate the distinction between intrinsic potentiality and the enabling or disabling conditions for its realisation that has led them to question Lee and George's appeal to intrinsic potentiality as a ground for distinguishing the embryo from the somatic cell. Sagan and Singer might concede this point but might still deny that there is a difference in the respective potentialities of the embryo and the somatic cell, insisting instead that any difference that existed between the potentialities of these entities would only concern a difference in what I have called the enabling conditions of its realisation. I touched briefly on this issue in section 2.1 at various points. I briefly examined, for example, one version of this claim, where Sagan and Singer suggest that a defective embryo whose defect could be remedied with the application of technology might be in the same position as a somatic cell that, with the application of technology, could become an adult human being. And I have also briefly presented their more general argument that the non-defective embryo and the somatic cell both have the potential to become an adult human being; it is, according to Sagan and Singer, the circumstances, and whether these are favourable, that determine whether the embryo and the somatic cell can develop into a mature human being. I shall now give this more general argument some further attention, focusing on the concept of *extrinsic* potentiality, and its distinction from intrinsic potentiality, as the key factor that distinguishes the somatic cell from the embryo. I shall then examine a possible objection to my alternative account raised by Julian Savulescu.

Building on the work of Bailey, who claims that "[e]ach skin cell, each neuron, each liver cell, is *potentially* a person" (Bailey 2001), Sagan and Singer suggest that if we regard the embryo as having an intrinsic power to develop into a human being, then the same power is possessed by the somatic cell. We should therefore regard both entities as equivalent, morally speaking. They write: "If something can develop into a new human being, should we think of it as having the moral status of the embryo? If what is important is that an entity can become an adult human being, then should not that entity have the same status as an embryo that can develop into a mature human being?" (Sagan and Singer 2007, 269). This argument seems compelling only by either ignoring or rejecting the distinction between the "intrinsic" potentiality of the embryo and the "extrinsic" potentiality of the somatic cell: "Lee and George reject the idea that a somatic cell—in contrast to an embryo—could be 'a distinct individual with a rational nature.' But if having the genetic coding to develop,

under favourable circumstances, into a being with a rational nature is crucial to the wrongness of killing, then our earlier account of the different entities that can become a human embryo shows that some unusual entities have this property" (Sagan and Singer 2007, 276). Here, Sagan and Singer seem to be saying that having the genetic coding to develop, under favourable circumstances, into a being with a rational nature is true both of the embryo and of the somatic cell, and so their potentiality is the same. For Sagan and Singer, then, the somatic cell possesses the potential to become a human embryo and so would, if potentiality really is as significant as Lee and George have claimed, have to be afforded equivalent moral protection. This is intended as a reductio ad absurdum of Lee and George's position. As Savulescu succinctly puts it: "If all our cells could be persons, then we cannot appeal to the fact that an embryo could be a person to justify the special treatment we give it" (1999, 91).

As already noted in section 2.1, however, possession of DNA, the genetic coding necessary to create a human being, is sufficient not for intrinsic but merely for extrinsic potentiality. For when a cell possessing the DNA of a human develops into a different entity, say, a skin cell, rather than an adult human being, this is not because a disabling condition has prevented the cell from developing into a mature human being but rather because natural selection has caused the cell to develop to fulfil one of the multifarious other functions it must fulfil (for example, becoming a skin cell) in order for a fully fledged human being to come to exist. For this reason, the word "can" as used in "if something can develop into an embryo" (as with the word "potentially" in the passage from Bailey and the word "could" in the passage from Savulescu) is ambiguous and conceals a distinction that, for some, has an important moral relevance. There is, of course, more than one way in which "something can develop into a new human being," and the meaning of the word "can" will depend on what entity the word "something" is referring to. For example, if by "something" is meant a somatic cell, then it is only *technically* possible for that entity to develop into a human being. Assuming that such a possibility is real—an assumption we can make for the sake of argument—a considerable degree of technological intervention is required for this to happen, and the application of that technology, if successful, results in an entity that fulfils a purpose or function completely different from that which it is currently fulfilling. For this reason, its potentiality is extrinsic, not intrinsic. A somatic cell such as a skin cell must, by human intervention, be removed from the body and, by sophisticated technological intervention, have its nucleus placed into an enucleated egg, and then have an electrical current applied to it by appropriately qualified experts, so that the cell is reprogrammed to become totipotent. By contrast, in the case of an embryo produced naturally, the possibility with which we are concerned is not a technical possibility. It is a power intrinsic to the embryo itself. It is simply not plausible to try to reduce the difference between the

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somatic cell and the natural embryo by categorising the application of these sophisticated technological techniques as merely "favourable circumstances." If it were otherwise, we would really be debating the question of whether we had discovered new embryos. But in the case of the somatic cell, that is not how the debate proceeds.

Sagan and Singer would nonetheless insist that the difference here is a difference of degree, not a difference in kind. Anticipating, in a later letter, the point that, "when reprogramming cells, the new being comes into existence only when the reprogramming is complete," they write: "But such a response would miss the point that the potential was there before the cells were reprogrammed" (Sagan and Singer 2009, 1283). But here they are clearly overlooking the distinction between intrinsic and extrinsic potentiality in making this claim. The level of artificial intervention required, and the fact that such intervention would appropriate the somatic cell for a different function, makes the somatic cell different from an embryo. It cannot genuinely be said that the somatic cell has the intrinsic potential to develop into a mature human being. Indeed, if it could be, that would be a reason for stating that we have discovered new embryos. But this is a conclusion that neither author countenances. Sagan and Singer rightly stop short of claiming that we have discovered that the somatic cell is in fact an embryo. Yet they expressly concede that the intrinsic potential to develop into a mature being is part of "the very concept of being 'an embryo'" (Sagan and Singer 2007, 266). It would follow from this concession that somatic cells—indeed, all cells hitherto discovered and undiscovered having the "potential" to develop into a mature human being—are embryos.[18] But this is, of course, a reductio of Sagan and Singer's view, and it is not surprising that they stop short of drawing the conclusion, even as they put into question the distinction between intrinsic potential and the enabling conditions that allow that potential to unfold. In refraining from drawing the conclusion, they appear to be acknowledging the ambiguity of the word "can" in such statements as "all these entities can develop into human beings" even as they conceal that ambiguity, as they must, in order to deny the moral relevance of the difference. This catches them in a pincer.

But is this too quick? Savulescu claims, for instance, that to say of a somatic cell such as a skin cell before nuclear transfer that it does not have the potential to become a human being is like saying that my car does not have the potential to get me from Melbourne to Sydney unless the key is turned in the ignition (Savulescu 1999, 91). But this, to my mind, is not right. Inserting the key into the ignition can hardly be called a

[18] Some writers do not shy away from this conclusion in the context of a biopsied totipotent cell (Devolder and Harris 2007, 155). But the somatic cell is not a totipotent cell; it must first be made into one. And even the totipotent cell must be biopsied and replaced in the uterus for it to turn into an embryo. Prior to this stage, the stem cell is capable of turning into multiple entities.

technological intervention that appropriates the car for the fulfilment of a function completely different from that which it currently serves. There are two aspects to this criticism of Savulescu's analogy. First, to equate inserting a key into the ignition, which can be done by any layperson, with sophisticated techniques that can only be carefully undertaken by the appropriate qualified experts misconstrues what is meant by "technological intervention." Plugging an electric kettle into a socket or inserting a key into the ignition, which can be done by laypersons, is not what is meant by "technological intervention." Laypersons are merely making use of the *product* of technology. We must therefore distinguish between the *use of the products of* technology—cars, kettles—by laypersons, as when we all place a key in the ignition to drive to work in the morning or plug the kettle into the socket in the wall—and the *application* of technology to *create* those products, as when scientists and experts seek, by the application of technology, to bring something about in a controlled way in a procedure that requires their special expertise and knowledge (building a car, making a kettle, extracting the nucleus of a somatic cell and then modifying the nucleus via the egg, or reprogramming a somatic cell to make it into an induced pluripotent stem cell).[19] The expression "technological intervention" refers to a degree of engineering to produce an entity that can only be undertaken by suitably qualified experts.[20] But Savulescu may nonetheless insist that this difference is merely a matter of degree. This brings me to the second aspect of my criticism of his analogy.

A somatic cell is not, of course, a totipotent stem cell, and the reactivation of genes that would make the cell a stem cell that could produce a kidney is more akin to dismantling a car and using the same components to build a lawnmower. Does that mean the car is potentially a lawnmower? Is the skin cell potentially a kidney? If we answer affirmatively to the latter we must by the same lights answer affirmatively to the former, but in both cases the kind of potentiality concerned is extrinsic, not intrinsic. It is obvious that the potential of the car to drive to Sydney is quite different from its "potential" to be a lawnmower, and the difference resides precisely in the amount of external technological intervention that is required *and* in the change of function or purpose for which the entity is being appropriated, between intrinsic and extrinsic potentiality. Savulescu's comments, then, beg the question, and they amount to no more than stipulating that the two kinds of potentiality (intrinsic, extrinsic) cannot be distinguished.

The true position is, then, that intrinsic power refers to that which would actualise itself in the appropriate circumstances without any artificial or

[19] Induced pluripotent stem cell technology was not, of course, known at the time Savulescu made his claim about every cell in our body, but the point still holds in the case of somatic cell nuclear transfer and applies in any event to the more recent views of Sagan and Singer (2009).

[20] On the possible impact for this point of the case of IVF embryos, see text below.

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technological intervention (with the exception, as noted above, of intervention to remove a *defect*)—the distinction we have drawn above between technical and natural possibility is all important here. The arguments of Sagan and Singer, Bailey, and Savulescu trade, at bottom, simply on the fact that we use the words "potential" and "can" to refer to both extrinsic and intrinsic potentiality. But their case—dependent as it is on concealing the ambiguity between these two different cases of "can"—collapses once intrinsic and extrinsic potentiality are distinguished.

The contrast that I have been drawing here, and that Sagan and Singer are denying, is that between *natural* embryos and the somatic cell, such as a skin cell that I rub off my body. Are IVF embryos in a different position, closer to the somatic cell? The relevant potential in the case of the IVF embryo is the potential of the embryo, *once created*. I am not committed to denying, here, that *embryos* created via technological intervention have the potential to be human beings. Clearly, an embryo created by somatic cell nuclear transfer, *once created*, has the same potential as an embryo created by natural fertilization, notwithstanding that *some* degree of technological intervention is required to implant the IVF embryo. Once again, Sagan and Singer expressly state that it is the somatic cell *before* reprogramming that has the potential of the embryo, rather than merely the resultant entity following transfer. The difference between a somatic cell rubbed off my body in the shower and an IVF embryo is that the latter has been *created* for the express purpose of transplantation, whereas the cells we rub off our bodies in the shower are not designed by natural selection to become adult human beings—they are specialised cells that must be reprogrammed to attain the position of totipotency or pluripotency. The IVF embryo, once created, needs no further programming and exists as an embryo at that stage. Prior to that, we have only an unfertilised egg. No embryo exists at this point. The unfertilised egg *is* in the position of the somatic cell because it is a different entity that does not of itself possess any intrinsic power to self-develop into a fully rational being.

This latter claim might be contested. It might be argued that the egg is clearly designed by natural selection for fertilisation whereas, on my account, the skin cell is not. Although we could answer this objection by insisting that the egg becomes a different entity—an embryo—on fertilisation, we can also concede the point for the sake of argument. If we concede the point, it still does not affect my analysis, because the egg is then *more like* the embryo than the somatic cell. The point would only affect my argument if the egg were *less* like the embryo than the somatic cell.

Could Sagan and Singer concede all these points but argue that the potentiality of the *reprogrammed cell*, as opposed to the somatic cell *before* reprogramming, is not meaningfully different from that of the embryo? They do indeed advance such an argument, and Lee and George have responded (Sagan and Singer 2009, George and Lee 2009b; see also

Devolder 2009). As noted above, however, Sagan and Singer have also wrongly denied the relevance of the distinction between the cell before reprogramming and the cell after. But, as noted, this distinction is crucial, and even if Sagan and Singer were right about the potentiality of the reprogrammed cell, that argument is considerably less far reaching. Once the distinction between intrinsic and extrinsic potentiality is recognised, the argument about the cell *after* reprogramming would not support the reductio ad absurdum argument advanced by Sagan and Singer, namely, that those who base their objections on the intrinsic potentiality of the embryo would be committed to advocating the protection of all the cells in our body, including the skin cells we rub off our bodies every day in the shower. Rather, the argument about the *reprogrammed* cell concerns only our responsibilities to an entity that has already been manipulated by means of technological techniques, thereby producing an entity with powers considerably different from those of the entity existing prior to the reprogramming. My aim in this article, however, has been to highlight the flaws in the more radical argument that they develop, following Bailey and endorsed by Savulescu, about our cells *before* any such reprogramming.

3. Conclusion

The conceptual confusions I have identified in this article present a problem for Sagan and Singer to the extent that they build their case for the moral permissibility of stem cell research on many of the claims we have found to be flawed. That being so, they play into the hands of their opponents, undermining their important case for the moral permissibility of stem cell research. It is better, I think, to argue simply that intrinsic potentiality itself is not a sufficient criterion for the creation of moral obligations; but that is an argument that is beyond the scope of this article.

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