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CAN ECTOGESTATION BE ENDED? THE IMPORTANCE OF LEGAL PERSONHOOD IN 'SWITCHING OFF' ARTIFICIAL AMNION AND PLACENTA TECHNOLOGY

Lauren McCaughey Master of Jurisprudence Thesis

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Table of Abbreviations

AAPT – Artificial Amnion and Placenta Technology

AA – Abortion Act 1967

BRDA – Births and Deaths Registration Act 1953

CVS – Chorionic Villus Sampling

ECtHR – European Court of Human Rights

GMC – General Medical Council

HFEA – Human Fertilisation and Embryology Act 1990 and 2008

ILPA – Infant Life (Preservation) Act 1929

IVF – In-vitro Fertilisation

NIC – Neonatal Intensive Care

NIPT – Non-Invasive Prenatal Testing

OAPA – Offences Against the Person Act 1861

PND – Prenatal Diagnosis

WHO – World Health Organisation

INTRODUCTION

Attempts at creating a device which supports ectogestation has been ongoing since the 1980s[1] as the concept of enabling the continuation of gestation outside of a pregnant person has captured our attention.[2] This new technology is gaining traction and conversations surrounding the human trials are already underway.[3] As it grows closer to practical use, there must be some consideration to the practical implications of such technology. It is entirely possible that circumstances could arise in which the question of 'switching off' artificial amnion and placenta technology (AAPT) is raised by either of the genetic progenitors of the entity inside, or the medical professionals overseeing it's care. This question cannot be answered without considerable consideration being given to what the legal status of such an entity would be, and whether or not it would gain legal personhood upon placement into AAPT.

Throughout this thesis, I will examine various scenarios which could arise during the use of AAPT that mean 'switching off' AAPT would be considered by either the entities genetic progenitors or the medical professionals overseeing it's care. Throughout this thesis, I will be using the term 'genetic progenitors' to refer to the people who are genetically related to the entity in AAPT. It is important that a neutral term is used, as it is likely that the technology would be used in non-traditional scenarios outside of a mother and a father who are both related to the entity. Who the entity's parents are and who it is genetically linked to can be two entirely separate things; for example, if two women were to use the technology using a sperm donor. It is a limited view to assume

[1] Brit Janeway Benjamin 'Ectogenesis: Is there a Constitutional Right to Substrate Independent Wombs?' (2020) 20 U Md J LJ Race Relig Gender & Class 167, 167-168.

[2] JBS Haldane first coined the concept in 1923 at a lecture in which he imagined a future where less than 30% of children were 'born of women' JBS Haldane 'Daedalus or Science and the Future' in Krishna Dronamraju, JBS Haldane *Haldane's Daedalus Revisited* (1995, OUP) 42.

[3] An advisory committee was formed on 19 - 20 September 2023 to discuss plans to establish safety and effectiveness during artificial amnion and placenta technology development and initial human studies with the Food and Drugs Administration in the United States. Food and Drugs Administration 'Pediatric Advisory Committee Meeting Announcement' (FDA, 20 July 2023) <https://www.fda.gov/advisory-committees/advisory-committee-calendar/pediatric-advisory-committee-meeting-announcement-09192023> accessed 1 November 2023.

that it is only those who are genetically related to a fetus will be it's parents, therefore my language throughout this thesis must be reflective of this.

Academics have begun to question if AAPT could be 'switched off',[4] but there is currently no clear way forward or extensive debate on this subject. It is important to highlight that I am not intending to resolve such a lacuna but expose it for the issues such a practical question regarding AAPT raises. As more academics join this discussion, how this gap can be bridged will become more apparent. I also do not consider the ethical implications of such a question, as this would require an entirely separate thesis to analyse such a complex moral topic. By focusing on the application of the current legal structures and concepts, I will highlight that the law is ill-equipped to regulate ectogestation in its current state and requires major reform to legislate the transformation of the gestation process.

The thesis is structures into three separate chapters which each deal with the gestateling in a different light. The initial chapter explores the significance of legal personhood, and whether the gestateling should be considered to have legal personhood or not. The following two chapters explore each of these possibilities. What becomes apparent in drawing such a conclusion is that the binary of legal personhood[5] is an outdated concept which becomes redundant with the creation of ectogestative technologies. As the nature of gestation and birth evolves, and there is no longer a singular event comparable to the process of 'giving birth' it is going to become more difficult to assign legal personhood to an entity. What this thesis will highlight is that legal status of the entity inside of AAPT is the single most important decision that will be made, as it determines how the entity will be treated in law. It is only then that the question of switching off AAPT can be answered.

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[4] Amel Alghrani *Regulating Assisted Reproduction Technologies: New Horizons* (Cambridge University Press, 2018) 167; Elizabeth Chloe Romanis 'Artificial Womb Technology and the Frontiers of Human Reproduction: Conceptual Differences and Potential Implications' (2018) 44 J Med Ethics 751, 753; Elizabeth Yuko 'Is the development of artificial wombs ethically desirable?' (DPhil Thesis, University of Dublin, 2012); Evie Kendal 'The perfect womb: Promoting equality of (fetal) opportunity' 14 J Bioethical Inq 185.

[5] Elizabeth Chloe Romanis 'Artificial Womb Technology and the significance of birth: why gestatelings are not newborns (or fetuses)' (2019) 45 J Med Ethics 727,727.

Partial Ectogestation

Extreme prematurity is the leading cause of mortality in neonates.[6] Advancements in the technology of neonatal intensive care have already significantly reduced the time a fetus must spend in utero. A fetus born at 24 weeks gestation[7] has around 60% chance of survival.[8] The survival rate greatly increases if the neonate is born even a week later.[9] It appears only logical that the next stage of development is to continue reducing how long a fetus has to undergo in utero gestation before it's likelihood of survival is enough to end the physical pregnancy of the gestating genetic progenitor.

Ectogestation would allow for a physical pregnancy end, treating the entity as if it has never left the uterus and requiring no demonstration of independent capacity for life.[10] AAPT could facilitate either partial ectogestation and complete ectogestation. Partial ectogestation requires there to be a period of in utero gestation inside of a pregnant person before the fetus is transferred externally to complete the period of gestation.[11] Complete ectogestation does not require a pregnant person, as the entire gestation process would take place externally.[12] It is generally agreed upon that partial ectogestation is a development that will come to fruition in the immediate future.[13] Partial ectogestation appears to be a natural development in aiming to increasing the survival of extremely premature neonates.[14]

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[6] Margo Harrison, Robert Goldenberg 'Global burden of prematurity' (2016) Sem Fetal Neonatal Med 74.
[7] Alghrani (n4) 111.
[8] Shalini Santhakumaran 'Survival of very preterm infants admitted to neonatal care in England 2008-2014: time trends and regional variation' 103 ADC Fetal & Neonatal 208, 211.
[9] For example, the survival rate increases to 74% if the neonate was born at 25 weeks, and 83% at 26 weeks. Ibid, 211.
[10] Elizabeth Chloe Romanis 'Regulating the 'Brave New World': Ethico-Legal Implications in the Quest for Partial Ectogenesis' (DPhil Thesis, University Manchester, 2020) 78.
[11] Christopher Kazcor 'Artificial Wombs and Embryo Adoption' in Sarah-Vaughan Brakman, Darlene Fozard Weaver *The Ethics of Embryo Adoption and the Catholic Tradition: Moral Arguments, Economic Reality and Social Analysis* (Springer, 2007) 307.
[12] Leslie Cannold 'Women, Ectogenesis and Ethical Theory' in Scott Gelfand, John Shook *Ectogenesis: Artificial Womb Technology and the Future of Human Reproduction* (Brill, 2006) 47.
[13] Elizabeth Chloe Romanis 'Partial Ectogenesis; Freedom, Equality and Political Perspective' (2020) 46 J Med Ethics 89, 89.
[14] Alghrani (n4) 132.

For a long time, speculative technology that could facilitate ectogestation was referred to as an 'artificial womb'.[15] In scientific articles, it has also been called the 'artificial placenta'.[16] Kingma and Finn have argued that the most appropriate language to use to describe this technology is AAPT as the womb itself is not replaced, instead the technology takes over the role of the placenta and amniotic sac akin to a dialysis machine replacing the function of the kidneys.[17] I will be using AAPT throughout this thesis to label this device.

Prototypes of Artificial Amnion and Placenta Technology

Ever since the 1980s, there have been attempts at creating a device which permits ectogestation.[18] There are several main research groups at the forefront of AAPT development. The team which is closest to clinical translation is at the Children's Hospital of Philadelphia.[19] They have created a system consisting of a pumpless arteriovenous circuit, a closed fluid environment called the 'biobag' and a new technique of umbilical vascular access.[20] The 'biobag' is a critical feature which preserves the fluid-filled lungs of the gestateling and glottic resistance required to ensure that the lungs can continue to grow and develop.[21] Tests on fetal lambs were successful; there was obvious growth and maturation as they occupied more physical space inside of the biobag and the animals became more active.[22] Significantly, lung maturation was monitored and was parallel to that of the lung development of age-matched control lambs in utero.[23] Because of the damage that invasive mechanical ventilation can cause,[24] it is important that AAPT facilitates lung maturation so that the

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[15] Carlo Bulletti et al 'The artificial womb' (2011) 1221 Ann NY Acad Sci 124; Christine Rosen 'Why Not Artificial Wombs?' (2003) 3 The New Atlantis 67.
[16] Emily Partridge et al 'An extra-uterine system to physiologically support the extreme premature lamb' (2017) Nature Communications 1, 2 <https://www.nature.com/articles/ncomms15112> accessed 3rd November 2023; Haruo Usada et al 'Successful use of an artificial placenta to support extremely preterm ovine fetuses at the border of viability' (2019) 221 Am J Obstet and Gynecol 69,69.
[17] Elsejijn Kingma, Suki Finn 'Neonatal incubator or artificial womb? Distinguishing ectogestation and ectogenesis using the metaphysics of pregnancy' (2020) 34 Bioethics 323, 361.
[18] Alghrnai (n4) 122.
[19] Partridge (n16).
[20] Partridge (n16) 2.
[21] Partridge (n16) 6.
[22] Partridge (n16) 5.
[23] Partridge (n16) 5.
[24] Melissa Brown, Robert DiBlasi 'Mechanical Ventilation of the Premature Neonate' (2011) Respiratory Care 1298, 1304.

entities do not require further ventilation once they are removed from the biobag and can breathe independently. This research team is currently in talks with the Foods and Drugs Administration in the US to discuss human use.[25]

The second team in Western Australia/Japan created a prototype 'EVE',[26] which uses an artificial placenta to provide gas exchange and nutrient delivery to a gestateling that has been submerged in an amniotic fluid bath.[27] The artificial amniotic fluid is not in an enclosed environment, unlike the biobag, which marks the main difference between the prototypes. AAPT provides extracorporeal gas exchange and nutrient delivery to the gestateling and is a system which allows for arterio-venous extracorporeal life support using the umbilical vasculature.[28] Yet this study achieved limited fetal survival when tested on ewes, with only 2 of the 5-subject surviving the pre-determined study period.[29] The biobag appears to be a more successful prototype.

The most recent group to publish research into AAPT is a team in Toronto who have tested the device on fetal pigs.[30] The group used a similar 'biobag' concept as the Philadelphia team[31] to gestate the pigs. The research states that using lambs to test AAPT is very different to a human fetus as sheep are larger; rather piglets are closer in physical size to a human fetus.[32] This study had difficulty keeping the piglets stable throughout testing, and they conclude that such a pumpless arteriovenous device is currently not suitable to support fetuses that are 500g. The fetal pigs represented 'realistic challenges of umbilical vessel cannulation and artificial placenta support that will be faced with translation to human subjects.'[33]

[25] Max Kozlov 'Human trials of artificial wombs could start soon: Here's what you need to know' *Nature* (14 September 2023)< https://www.nature.com/articles/d41586-023-02901-1> accessed 4 October 2023.
[26] EVE (n16).
[27] EVE (n16) 1.
[28] EVE (n16) 11.
[29] EVE (n16) 8.
[30] Alex Charest-Pekeski et al 'Achieving sustained extrauterine life: Challenges of an artificial placenta in fetal pigs as a model of the preterm human fetus' (2021) 9 Psychology Reports 1, <https://physoc.onlinelibrary.wiley.com/doi/full/10.14814/phy2.14742> accessed 3rd November 2023.
[31] EVE (n16) 7.
[32] Charest-Pekeski (n30).
[33] Charest-Pekeski (n30) 17.

All research teams aim to use their prototypes to treat extremely premature babies who would not be able to survive neonatal intensive care (NIC) because they are not mature enough to withstand invasive treatment such as mechanical ventilation[34] and have not begun to attempt to perform their own life functions.[35] The Philadelphia prototype explicitly states that the initial target clinical population will be at 23-25 weeks gestation.[36] EVE does not state a precise target population it can be inferred to be around the same.[37] The Philadelphia team pointedly state that their intention is not to extend the current limitations of 'viability'[38] but to offer 'the potential for improved outcomes for those infants already being routinely resuscitated and cared for in [NIC]'.[39]

The research teams anticipate that because there is limited time in which the fetal brain can be without oxygen, an 'EXIT' procedure will need to be planned and scheduled. 50-60% of extreme preterm deliveries can be anticipated and therefore delivery via caesarean section can be anticipated.[40] This 'EXIT' procedure is in unchartered territory compared to a traditional caesarean section. Whilst a caesarean is a fairly routine procedure, it's focus is the removal of the fetus. Removing a fetus only to place it into AAPT, shifts the focus from simple removal to transferral. In the 'EXIT' procedure, once the fetus was removed does not mean that the medical procedure would be over as it would then have to be quickly placed into AAPT to prevent oxygen deprivation. Earlier in pregnancy, such a procedure would be more risky and it would be more likely to damage a person's womb.[41] It would ever be possible to place a gestateling in AAPT after vaginal delivery whilst clearing contamination remains

[34] Partridge (n16) 4.
[35] Romanis (n5) 728.
[36] Partridge (n16) 11.
[37] EVE (n16) 2.
[38] This refers to the limitations stated in the offences and defences of abortion and child destruction. The limitation on abortion under s.1(1)(a) in the AA at 24 weeks has created an implied viability threshold whereby it is assumed that from 24 weeks, a neonate could survive ex utero. This 'threshold' is also present in the ILPA s.1(1) definition of child destruction, and whilst initially it was perceived to be 28 weeks, this has been shifted to 24 weeks to be consistent with the AA and with the development of medical treatment of premature neonates.
[39] Partridge (n16) 11.
[40] Partridge (n16) 11.
[41] Elizabeth Chloe Romanis 'Abortion and Artificial Wombs' (2021) 8 Journal of Law and Biosciences 1, 7.

uncertain.[42] This is why the 'EXIT' procedure is necessary, even though it poses more risks to both the fetus and the gestating progenitor.

The Gestateling

Exactly what to call the entity which exists inside of AAPT has also been widely debated. One suggestion has been a 'fetonate'[43] a phrase which acknowledges that the entity has changed location while its fetal physiology is preserved.[44] It has been argued that this language would be more familiar as it uses more recognisable language, however Romanis argues that combining 'fetus' and 'neonate' is oxymoronic.[45] I argue that this would also be discordant in legal terms as a fetus and a neonate are defined as separate entities in law. This is presently necessary to distinguish their differing legal statuses and the statute which applies to them. A fetus is an entity which exists inside of a pregnant person, whilst a neonate is an entirely separate entity that can be held and interacted with.[46] Whilst the language may be more familiar for parents and the general public, using it would only confound caution and confusion over what exactly the entity is.

'Gestateling' is this thesis' preferred terminology, describing a human being in the process of ex utero gestation exercising no independent capacity for life.[47] Using entirely separate language to describe the externally gestated entity is important in establishing that the entire process of ectogestation is new, therefore the entity going through the process is equally unique.[48] It is also important that throughout this thesis, which primarily discusses the distinctions between gestatelings, fetuses and neonates it is necessary that terminology is used which makes it clear that the entities are distinct. Throughout this thesis I use gestateling to describe the entity inside of AAPT.

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[42] Partridge (n16) 11.
[43] Felix Da Bie et al 'Ethics Considerations Regarding Artificial Womb Technology for the Fetonate' (2023) 5 Am J Bioethics 67, 74.
[44] ibid 74.
[45] Elizabeth Chloe Romanis 'The Ethical and Legal Status of 'Fetonates' or 'Gestatelings'' (2023) 23 Am J Bioethics 90, 90.
[46] Ibid.
[47] Romanis (n45) 90.
[48] Romanis (n45) 90.

CHAPTER ONE: APPLYING THE BINARY OF LEGAL PERSONHOOD TO THE GESTATELING

Legal personhood is the most important status that an entity can be granted in English law. A neonate is granted significantly more legal rights in its legal status than a fetus, which does not receive personhood until it has been 'born alive.'[49] Yet a fetus is not entirely without protection. While in utero a fetus does not possess legal personhood,[50] legislation such as the Abortion Act[51] (AA) and the Infant Life (Preservation) Act[52] (ILPA) both seek to protect the 'viable' fetus – one which is 'capable of being born alive'[53] (currently stated to be at 24 weeks).[54] Romanis frames the test for legal personality as a two-stage process consisting of being 'birthed' and subsequently being 'born alive'.[55] Once both conditions have been reached, this signifies that the entity is developed enough to be a neonate.

Breaking the 'born alive' requirement into its constituent elements is necessary because the process of ectogestation does not necessarily permit both stages to occur concurrently. It is not until ectogestation that it could be considered that an entity could be granted legal personhood before having emerged entirely from ectogestation. Discussing if a gestateling should be given legal personhood is a complex topic, not due to the change in location from in utero to AAPT, but because of the uncertainty regarding what biological functions are enough to demonstrate independent life. Throughout this thesis I consider that in order to possess legal personhood there are two elements which the entity must satisfy to be considered developed enough to be granted the full protection of the law.

The vaginal birth or caesarean section which follows a physical pregnancy permit being 'birthed' and 'born alive' simultaneously. Ectogestation changes this process. Instead, the gestateling

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[49] *Burlington v Islington Health Authority* [1993] QB 204, 281 (Phillips J).
[50] *Paton v British Pregnancy Advisory Service Trustees* [1979] QB 276 (QB).
[51] 1967.
[52] 1929.
[53] Ibid s.1(1).
[54] AA (n51) s.1(1)(a).
[55] Elizabeth Chloe Romanis 'Challenging the 'born alive' threshold: fetal surgery, artificial wombs, and the English approach to legal personhood' (2019) 28 Med Law Rev 93, 100.

emerges from the pregnant person, but has not completed its gestation and continues gestating inside of AAPT until it reaches a suitable gestational maturity.

Pre-existing issues concerning these requirements for legal personhood become more complicated with the advent of reproductive technologies such as AAPT. Much of the legislation and common law is outdated, written before such medical technology was even imaginable. It is unsurprising that law in existence since the 19th century does not make adequate space for making sense of ectogestation. Yet continuing to use this outdated framework only going to become more outdated because of medical advancement. There is a need for advancement within the law in order to match technology's pace.[56]

This chapter crucially explores whether the gestateling has been born alive upon it's transferral into AAPT. This is not a new idea to be explored, however it is an important cornerstone for the rest of this thesis. The decision regarding if the gestateling has been born alive will be the most significant one made in regards to AAPT. It is only because the answer to this question is unknown, that this thesis can explore varying ways which the law can be interpreted. Once this initial question is answered, it will become apparent whether the law believes a gestateling to be born alive or equivalent to a fetus.

Throughout this chapter I argue that the requirements for legal personhood have not been applied clearly throughout the common law, nor does it become comprehensible when attempting to apply such rules to a gestateling in AAPT. This chapter will show that the initial 'birthed' stage of the test simply refers to the physical change of location that would occur in traditional birth, as well as during the extraction in partial ectogestation. Academics have often argued either for or against a gestateling being granted legal personhood,[57] however I argue that it is impossible for the distinction to be clear. Determining which way, the courts will sway in deciding the gestateling's legal status is impossible to declare. This chapter discusses the evidence amounting on both sides of the argument,

[56] Kristin Savell 'Is the Born Alive Rule Indefensible and Outdated?' (2006) 28 Sydney L Rev 625, 664.
[57] Romanis argues clearly in support of the gestateling not being a legal person; Romanis (n5) 728. Colgrove argues starkly in support of the gestateling being a legal person; Nick Colgrove 'Subjects of ectogenesis: are 'gestatelings' fetuses, newborns or neither?' (2019) J Med Ethics 45 723, 724.

concluding that even if the more convincing argument is that a gestateling should not have legal personhood, this outcome is not likely.

<u>Birth</u>

Birth is the first stage within the 'born alive' test. The definition of birth appears to be a straightforward one; the process in which an infant is entirely expelled from the uterus.[58] This approach to birth is a simplistic one, focusing solely on the change in location from *in* utero to *ex* utero – a logical approach as most of the common law is historic. Generally, this definition is uncontested and accepted as a logical definition of birthed, however it must be reinforced that this is only one element to being 'born alive'. Due to the medical and obstetrical knowledge during the period in which the 'born alive' rule was increasingly used during the 19th century, it was initially a rule of evidence used to determine when life began.[59] Once medical knowledge increased and modern reproductive technologies were developed permitting increased observability of the fetus whilst in utero, these questions no longer had to be answered by the physical emergence of an alive neonate from a pregnant person.[60] The introduction of AAPT makes the dividing line of location a less useful marker by bringing into question when birth has occurred.

Legal Definition of Birth

Within historical case law, the legal definition of birth is consistent.[61] Past case law stipulates that a fetus is not birthed until it is *completely* ex utero. Most of the case law in which judges ruled on a dispute centring on the question if a neonate had been 'birthed' is from the 19th century, as it was necessary to determine if the entity has been entirely expelled (and therefore had legal personality and was a neonate) or if it had not been expelled entirely before its death. This is mostly a redundant legal requirement due to medical developments which can assuredly inform medical professionals of this

[58] Romanis (n55) 103.
[59] Gerard Casey 'Pregnant woman and Unborn child: Legal Adversaries?' (2002) 8 Med-Leg J Ireland 75, 77.
[60] CD Forsythe 'Homicide of the unborn child: the born alive rule and other legal anachronisms' (1986) Valparaiso U Law Rev 563, 564.
[61] Alghrani (n4) 101

information. For example, in *Crutchley,*[62] it had to be determined if a neonate had been 'wholly born'[63] before it had been strangled. Parks B directed that an infant could only be recognised as birthed once 'the whole body of the child had come forth from the body of the mother.'[64] Under similar circumstances Littledale J came to the same conclusion in *R v Poulton*.[65]

The most recent case to consider the legal definition of birth was *Rance.*[66] Parents of a child born with hydrocephalus (a build-up of fluid in the brain) and severe spina bifida alleged that the defendants were negligent in not diagnosing the conditions in an earlier ultrasound. Brooke J held that the law did not provide any protection to the developing human entity while 'in the process of being born before it had been completely separated from its mother'.[67] Therefore the defendants could not have been negligent in failing to diagnose the conditions.[68] It is only upon birth and granting of legal personhood that the law can protect an entity.

The Births and Deaths Registration Act (BRDA)[69] defines a birthed child as a child which has been 'issued forth from its mother'.[70] The World Health Organisation (WHO) has a slightly different definition, stating that birth is the 'complete expulsion or extraction from its mother, of a product of conception, irrespective of the duration of the pregnancy'.[71] While the BDRA is the only source of importance to the question of English legal personhood, it is interesting to compare it to the WHO definition. Both the BRDA and WHO recognise that birth is birth regardless of gestational age, the process of the expulsion of an entity can occur at any point in pregnancy.

This definition has not been without criticism. Much does not focus on the definition of birth itself, but the legal consequences of being birthed. Ethicists have claimed that this bright line drawn

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[62] *R v Crutchley* (1837) 173 ER 355.
[63] Ibid 355.
[64] *Crutchley* (n61) 356.
[65] (1832) 172 ER 997, 997.
[66] *Rance v Mid-Downs Health Authority* [1991] 1 QB 587 (QB).
[67] Ibid 620.
[68] *Rance* (n65) 587.
[69] 1953.
[70] Ibid s.41.
[71] World Health Organisation (2023) 'Maternal Mortality Ratio (per 100,000)' <https://www.who.int/data/gho/indicator-metadata-registry/imr-details/26> accessed 10 May 2023.

between fetus and baby is nonsense, claiming that it is 'irrational' to 'confer or deny legal status on the basis of physical location'.[72] Greasley suggests that the definition of birth is overly simplistic.[73] If the law were to only rely upon the physical location of the neonate and the fact that it has been extracted from a uterus, this would be an illogical stance especially in the modern day. However, this is only one element to the concept of being 'born alive' and cannot be considered independently.

Kingma and Finn suggest that the main reason that the law takes a location-based approach to defining birth is due to contemporary culture adopting an understanding of pregnancy they label 'the fetal container model', with pregnant people acting as an incubator for a fetus.[74] The fetus is considered to be a separate entity from the pregnant person despite it's reliance on the continuation of physical pregnancy is order to increase it's chances of survival ex utero. Ectogestation could change this perception, as gestation will not be dependent on a physical pregnancy. AAPT reduces the importance of being birthed and leaving the uterus as it no longer marks an end to the gestation period of the fetus. Instead, it would simply signify the end of the physical pregnancy whilst the gestateling continue gestation until it is fully developed.

Birth is only one element required in order for an entity to be granted legal personhood. Therefore, it's simplistic definition is sufficient, or at least has been sufficient whereby gestation is a process which takes place inside of a human body. 'Birth' has never needed to be defined as anything other than this physical change in location, or the expulsion from the human body, because that is all that birth has ever been. That is up until now as the advent of ectogestation has the potential to reform ideas surrounding birth and pregnancy.

Has the Gestateling been birthed?

Once a gestateling has been removed from a pregnant person and is in AAPT undergoing ectogestation, has this change of location resulted in a legal birth? In current prototypes, it is assumed

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[72] Amel Alghrani, Margaret Brazier 'What is it? Who is it? Re-positioning the fetus in the context of research' (2011) 70 Cam Law Rev 51, 52. Peter Singer *Practical Ethics* (1999, 2nd edn, Cambridge University Press) 139.
[73] Kate Greasley *Arguments about Abortion: Personhood, Morality and Law* (2nd edn, Oxford University Press, 2019) 191.
[74] Kingma, Finn (n17) 357.

that the method of fetal extraction will be via caesarean section.[75] Therefore, current prototypes do anticipate that the fetus will be extracted from the body of the pregnant person before it undergoes ectogestation.

Conforming to the current legal definition of birth, a gestateling undergoing partial ectogestation would be found to have been legally *birthed* once they have been removed from the pregnant person's uterus.[76] The change in location from in utero to inside the artificial placenta satisfies this requirement despite the gestateling continuing to function inside the technology as a fetus and failing to undergo any of the significant changes a fetus would undergo in birth. I argue that it is more significant that the entity is still undergoing gestation, than the gestateling's change of location. To rely solely on the primitive location-based definition of 'birth' to encompass the complexities of being 'born alive' would be to ignore the changes a fetus undergoes during the process. Therefore, the second more contentious stage of the test for legal personality must be considered; whether the gestateling will have been legally 'born alive.'

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Born Alive

The Still-Birth Definitions Act 1992 states that for a birthed entity to have legal personhood, there must be proof that the ex-utero human being is alive,[77] but elaborates no further on what 'alive' exactly is. Similarly, the BRDA states that a neonate has been born alive if it has breathed or shown any other 'signs of life.'[78] Common law and statute provide little clarity on this issue, instead further complicating exactly what could constitute a demonstration of life by introducing conflicting ideas.

Legal Definition of 'Born Alive'

Historically, the methods in determining, as a matter of fact and law, when a neonate was born alive have varied. Parks J declared that a neonate breathing was not sufficient to amount to life, and that there must have been 'an independent circulation of the child'[79] for it to be considered born alive.

[75] Partridge (n16) 10.
[76] Romanis (n5) 102.
[77] Still Birth Definitions Act 1992 s.1(1).
[78] BRDA (n30) s.41.
[79] *R v Enoch* (1833) 5 Car & P 539, 539.

Similarly, in *Poulton*[80] it was held that breathing alone was not sufficient and that 'whether the child was born alive or not depends mainly upon the evidence of medical men…none of them say that the child was born alive, only that it breathed'.[81] Again, in *Brain*[82] it was determined that a child had not breathed at all after birth, it was still possible for them to have been born alive.[83] Breathing alone is not sufficient to determine that a fetus has been born alive and other biological functions must have occurred.[84] Due to these cases being from the 19th century, it is unclear if the exact issues raised be applicable/considered as determinative in a world where modern medicine can identify a multitude of signs that an entity is, or was, living. Additionally, it would be a much easier process to determine if a neonate had been born alive, as well as greater knowledge of what biological processes occur when an entity is birthed. It is still important to look to the roots of the 'born alive' rule to ascertain the intention of these definitions as it highlights the archaic form in which law surrounding birth and pregnancy has assumed. It is often not possible to apply such logic to the 21st Century, not least when considering innovative technology such as AAPT.

The definition of 'born alive' was questioned in a case concerning the separation of conjoined twins.[85] The Court was considering the legality of the separation as one twin was dependent on the other to exercise major life functions due to their shared organs and circulatory system. Walker LJ dismissed any claims that the dependent twin was not be born alive for the purposes of the law stating that there was no analogy between the twins' dependence and the dependence of an unborn fetus on the pregnant person.[86] This is contradictory to the above common law, which states that breathing alone is not enough to amount to being born alive yet all other demonstratable life functions are being performed via another person. It is the more humane approach which affords the dependent twin legal personality, I believe that it would be difficult to find any judge which would not see another living growing person as not possessing legal personality. Although from a more detached perspective it is

[80] *Poulton* (n63).
[81] *Poulton* (n63) 998.
[82] *R v Eliza Brain* (1834) 172 ER 1272.
[83] Ibid 1272.
[84] Romanis (n5) 111.
[85] *Re A (Children) (Conjoined twins: Surgical Separation)* [2001] Fam 147.
[86] Ibid 255.

possible to see such an analogy between the dependent twin and a fetus, this would go against many people's human instinct. Not to mention the emotional distress this would cause the twins' family. This case highlights that even where a cold reading of the law suggests something, it is people who make such decisions, and such a strict following of the law is not always beneficial.

There is further conflict on the definition of 'born alive' in modern common law between the conclusions in *Rance*[87]and *C v S.*[88] In the *C v* S John Donaldson MR claimed that 'alive is a simple concept…it should be construed in conformity with the…Births and Deaths Registration Act'.[89] The BRDA[90] states that a still born child is a child which has not breathed or shown any other signs of life.[91] Therefore, in order to be born alive these legal requirements must be satisfied. Donaldson continued to state that a fetus was capable of being born alive only if it could breathe after birth with or without a ventilator,[92] while recognising that that movement of cardiac muscle and primitive circulation were 'real and discernible signs of life' but without the capability of breathing were not born alive.[93] Brooke J contradicted this and concluded that the BRDA was drafted in order to afford legal protection only to a child who could breathe through its own lungs alone, 'without deriving any of its living…through any connection with its mother'.[94] Both of these legal opinions appear to be in conflict, appearing to give a differing view on whether premature neonates in intensive care would be legally alive as they require ventilators to assist their breathing.

This conflict in definition has been recognised by the Nuffield Council of Bioethics stating that where there are conflicting authorities it means that the law lacks a 'sufficiently accurate and certain definition of 'born alive' appropriate for the use in light of modern medicine and technology'.[95] It has been recommended that a new definition of born alive be established by the

[87] *Rance* (n66).
[88] *C v S* [1988] QB 135 (CA) Civ.
[89] Ibid 149.
[90] BRDA (n69).
[91] BRDA (n69) s.14.
[92] *C v S* (n88) 151.
[93] *C v S* (n88) 143.
[94] *Rance* (n66) 619.
[95] Nuffield Council on Bioethics *Critical Care Decisions in Fetal and Neonatal Medicine: Ethical Issues* (2006) https://www.nuffieldbioethics.org/wp-content/uploads/2014/07/CCD-web-version-22-June-07-updated.pdf (accessed 3rd November 2022) 20.

Royal College of Obstetricians and Gynaecologists, the British Association of Perinatal Medicine and the Royal College of Paediatrics and Child Health yet this still has not occurred.[96] It would seem incongruous to claim that a premature neonate in NIC who has been birthed and is demonstrating a level of independent life functions even with assistance from ventilation has not been born alive. Romanis attempts to reconcile these statements, claiming that it is possible to interpret the interpretations as complementary to each other as confirming that a neonate must breathe independently of a pregnant person while using its own lungs.[97] Even premature neonates using ventilators have to use their own lungs when breathing, as ventilators assist lung function rather than replace it.[98]

The definition of 'born alive' is an area which needs further clarification. The conflicting common law remains our main source of direction in deciding when a fetus has been born alive. Despite historical common law, it appears that breathing independent of the pregnant person, yet ventilation may be involved, is a significant step in determining being born alive. What other 'signs of life', as the BRDA mentions, could be significant remains unclear; they could be the movement of the cardiac muscle and primitive circulation as Donaldson suggested in *C v S*[99] or could include some of the biological changes that occur during birth such as Greasley depicted which include the clearing of fluid from the lungs, changes in the circulatory system and release of hormones to regulate temperature.[100] Regardless, it would appear that in order for a fetus to be granted legal personhood and to be found to have been born alive it must be able to breathe whether that be independently or via ventilation, using its own lungs.[101]

Has the Gestateling been 'born alive'?

Ambiguity surrounding what comprises a definitive sign of being 'born alive' is worsened by the blurred lines which arise because of ectogestation and AAPT. There is compelling evidence that

[96] Romanis (n5) 110.
[97] Romanis (n55) 110.
[98] Romanis (n55) 110.
[99] *C v S* (n88) 143.
[100] Greasley (n11) 191.
[101] Romanis (n55) 110.

the gestateling should not be considered to have been born alive as it does not begin to attempt the performance of life functions such as breathing.[102] AAPT treats the gestateling as if it has not left the uterus. This is a very literal, more scientific application of the physiology of a gestateling and an easier argument to make when the entire situation is hypothetical. When the courts have to make such a judgement it will directly impact real families. Consequently, it is unlike that the courts would take such a literal reading of the law and would afford a gestateling legal personhood despite the compelling evidence to suggest otherwise.

a. Difference between AAPT and NIC

The very design of AAPT supports the argument that the gestateling is not born alive when compared with the current method of treating extreme premature neonates, neonatal intensive care (NIC). The biggest fundamental difference is that AAPT treats its subjects as if it has not been born.[103] NIC is designed only to provide intervention and assistance to perform life functions that the premature neonate is already beginning to attempt alone.[104] Due to this, NIC has proved ineffective for neonates born beyond the viability threshold as they cannot support a developing entity that does not have any capacity for independent life.[105]

One of these major life functions is breathing. Breathing, as stated above, is an integral part of determining if the gestateling is born alive. A fetus while in utero does not 'breathe.' Instead, oxygen travels via the umbilical cord to the fetus rather than through the inflation of the lungs[106] as it does in a neonate that has been born alive as is breathing via ventilation or by itself. AAPT was not designed to allow a gestateling to breathe using its own lungs, instead enabling for them to breathe through liquid ventilation to ensure that their lungs can continue to mature.[107] Romanis argues that this does not constitute 'breathing' as it mimics the gas exchange that takes place in utero; and a fetus is not described as 'breathing.[108] If the gestateling being treated in the biobag was 23 weeks as the

[102] Romanis (n55) 110.
[103] Romanis (n55) 97.
[104] Romanis (n55) 97.
[105] Romanis (n55) 98.
[106] Kingma, Finn (n17) 358. Romanis (n55) 110.
[107] Partridge (n16) 2. Romanis (n55) 98.
[108] Romanis (n55) 110.

Philadelphia study aims[109] it would likely not be able to breathe even with assistance in NIC, the survival rate of neonates born at 22-23 weeks is only 0.7%,[110] therefore there is clearly not a demonstratable capacity for independent life shown at this age of gestation. If such life functions cannot be supported, and therefore demonstrated, it would appear incongruous to call such an entity 'born alive' and comparable to a neonate who would be able to perform, or be assisted to perform, such functions either alone or through NIC.

Questioning the importance of being able to demonstrate some capacity for independent life becomes a more complex issue if you consider an entity on the brink of being able to perform life functions independently and who could be treated in NIC but are instead placed inside of AAPT. A gestateling at 24 or 25-weeks gestational age, who would be deemed to have been capable of being born alive by the ILPA, would nowadays be treated in NIC. The decision of the medical team and what treatment they decide to use could become important if this determines if a neonate begins to attempt to breathe, or a gestateling is entirely supported by AAPT If the gestateling at that 25 weeks were placed into NIC, it would begin to attempt to perform life functions, however because if it is been placed inside of AAPT it does not attempt to perform any life functions as AAPT acts for it. I believe that the distinction here is not that the entity could be capable of attempting to breathe and suchlike, but that it has not actually attempted this yet. Therefore, any gestateling at any stage should be treated equally because they are all demonstrating the same (lack of) performance of life functions, even if more mature gestatelings could be able to begin to support itself.

AAPT can support more premature neonates who do not yet have the capacity for independent life, for example they do not need semi-functional lungs to be able to obtain oxygen,[111] which signals a significant change in the way that extreme premature neonates would be treated. How can an entity which does not need to be developed enough to display any capacity for independent life be declared to have been born alive? The design of AAPT is to act as if the fetus has never left the

[109] Partridge (n16) 11.
[110] Veronique Pierrat 'Neurodevelopmental outcome at 2 years for preterm children born at 22 to 34 weeks' gestation in France in 2011: EPIPAGE-2 cohort study' [2017] 358 British Medical Journal 3448, 4.
[111] Romanis (n55) 98.

uterus, the gestateling is just as dependent on AAPT as it would if still in utero on a pregnant person for survival. Romanis reaches the same conclusion stating that there are 'substantive reasons' to believe that a fetus which would only be able to continue its biological life ex utero if the process of gestation was continued after being removed from a pregnant person is different to a fetus capable of making the necessary changes to support independent living.[112] Only an entity which can make meaningful adaptations to its environment is a life which has the potential to be realised,[113] unlike a gestateling in AAPT which is not gestationally mature enough to initiate any of these changes. A gestateling without these adaptations in AAPT should not be deemed to be born alive due to the dependence on AAPT.

Equally, a more mature gestateling at 24 or 25 -weeks should not be considered to be 'born alive' just because it hypothetically could begin to attempt to perform life functions. The above analysis is concerned with pre-viable gestatelings, largely because I believe that it is considerably less likely that a more mature fetus would be transferred into AAPT as it would be ethically questionable to choose an experimental treatment if the entity could withstand NIC. Whether this could become a more difficult question should AAPT prove to be more effective once it is an established treatment option that is no longer experimental is likely. Whilst many factors such as availability and expense would be considered that AAPT could replace NIC in many treatment scenarios in the far future is possible. Even if this was the case, if there is limited access to AAPT and it is considerably more expensive, it is likely that such treatment would be saved for the pre-viable fetus who could not be transferred into NIC, rather than a 25-week-old fetus who could benefit from NIC. Of course, there would be exceptions to this and if AAPT were to become as common and accessible as NIC currently is, more fetuses would be able to be treated via AAPT. I believe it more likely that a gestateling who could benefit from NIC, it would still be treated with NIC. Hypothetically, if there were a gestateling that was 25 weeks and it is inside of AAPT, this would mean that it has not yet began to attempt life functions because it is continuing gestation. Therefore, it should not be considered to be born alive.

[112] Elizabeth Chloe Romanis 'Is 'viability' viable? Abortion, conceptual confusion and the law in England and Wales and the United States' (2020) 7 JLB 1, 15.
[113] Ibid.

Even though if it was in NIC it would begin to attempt to perform life functions such as breathing, if it is in AAPT, it has not actually breathed. What is significant is what has actually occurred, not what *could* occur with different treatment.

b. Primitive and Exertive Signs of Life

Rodger, Colgrove and Blackshaw argue that the signs of life and physiological changes which mark the difference between fetal function and neonatal function happen during a process they have named 'H-metamorphoses'.[114] They argue that the advent of ectogestation shows that being born by location and H-metamorphoses only coincide accidentally as AAPT allows the location change to occur while the physiological changes are delayed.[115] If completing H-metamorphoses was required in order to be born, many neonates with serious congenital anomalies will not have been legally born.[116] This argument is flawed. While there are neonates born who have not developed enough to have undergone all the physiological changes, these will (currently) be treated in NIC where they will be assisted in the performance of life functions e.g., breathing if their lungs are not mature enough to do so alone. This does not mean that they have not been born as the neonate is still able to attempt to perform these life functions. A neonate which cannot attempt to perform any life functions will not be a candidate for NIC and would not survive ex utero. In the context of neonates who are born with serious life-limiting conditions which prevent them being able to attempt to perform life functions, this becomes an uncomfortable question.

Following this argument, a fetus who is born with anencephaly, whereby a neonate is born without part of the brain and skull, would not be born alive.[117] Romanis argues that an anencephalic fetus, regardless of gestational age, would be unable to survive a meaningful amount of time ex utero and therefore claiming that such a fetus could be 'capable of being born alive' is counter intuitive.[118] Therefore, the physiological changes and the location are linked as the former make survival possible

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[114] Daniel Rodger, Nicholas Colgrove, Bruce Philip Blackshaw 'Gestaticide: killing the subject of the artificial womb' (2021) 47 Journal Med Ethics 1.
[115] Ibid 3.
[116] Rodger, Colgrove, Blackshaw (n114) 3.
[117] Romanis (n117) 18.
[118] Romanis (n117) 19.

once the fetus is no longer in utero. Where the fetus has not made the necessary adaptations required to be 'born alive' this should not amount to being born alive, although this is a difficult, emotive argument in relation to fetuses with conditions such as anencephaly. AAPT has created an artificial environment in which it is possible to be born by location, but to still have not undergone 'H-metamorphoses,' but this is still a hypothetical, artificial method which will not be representative of most births. Furthermore, to argue that because of AAPT, being born by location should be enough to satisfy being 'born alive' ignore the various physiological nuances of significance in the second part of the 'born alive' test that are crucial is the distinction between fetus and neonate.

Colgrove argues that the gestateling has been born alive.[119] He claims that all that matters in determining if the gestateling has been born alive is if the subjects have exhibited 'evidence of life', giving the example of a heartbeat.[120] He states that gestatelings undergoing partial ectogestation have a pulse, as AAPT is dependent on the gestateling's heart working with the oxygenator to imitate placental circulation in utero and that even in gestatelings which lack fully developed hearts, AAPT would continue the pulsation of the umbilical cord artificially.[121] This argument falls short of being convincing, as evidence of a heartbeat is shown as early as 6 weeks into gestation[122] and this is not enough to show that a fetus of that age is demonstrating its capabilities of independent survival. Simply having a pulse is not enough to demonstrate that a gestateling has been born alive when its physiological status is so different.[123] Although BRDA states that there must be breathing or 'any other signs of life', to which a heartbeat could fall under the latter, when looking to the common law fixation on independent breathing (and Donaldson MR's acknowledgement that movement of the

[119] Colgrove (n57) 554.
[120] Colgrove (n57) 554.
[121] Colgrove (n57) 554.
[122] Charlotte Lozier Institute 'The Science Behind Embryonic Heartbeats' (3 November 2021) <https://lozierinstitute.org/the-science-behind-embryonic-heartbeats-a-fact-sheet/#:~:text=At%206%20weeks'%20gestation%2C%20the,movement%20of%20the%20beating%20heart> accessed 10 May 2023.
[123] Romanis (n55) 118.

cardiac muscle alone was not sufficient to determine if an entity was born alive)[124] it would be unlikely that a pulse alone would satisfy a court that the entity is born alive.

Romanis disputes Colgrove's argument by stating that such primitive signs of life do not evidence that a gestateling is working to sustain its own life and that instead the plain meaning of 'sign of life' includes only activities that are exertive and demonstrate some capacity for independent life.[125] It was already established in *C v S* that primitive circulation and movement of the cardiac muscle are not enough to determine being born alive[126], supporting this argument that a sign of life should be exertive. Recognising these alleged 'signs of life' in a fetus as evidence of being born alive, where the differences between a fetus and a neonate is so distinct, would be counter intuitive.[127] Such signs should not be used to evidence that a gestateling in AAPT has been born alive. That breathing has been deemed to be the most significant aspect of determining if an entity is born alive, in the modern common law, also highlights the exertive nature of 'signs of life.' A gestateling in AAPT will only display primitive signs of life, like a fetus in utero,[128] and therefore does not evidence that a gestateling has been born alive.

Colgrove also states that 'self-sufficiency is not relevant to the conventional definition of birth.'[129] I disagree with this interpretation as self-sufficiency is an implicit requirement in the legislation regarding granting entities legal personhood. If self-sufficiency was not relevant to deciding if an entity was born alive, a heartbeat would be sufficient to prove life. The law demands for signs of life, including breathing, as evidence of being born alive[130] which can only be performed by more developed entities and are consequently more likely to be self-sufficient. Romanis argues that an entity which can make these meaningful adaptations to the external environment is a life that has the

[124] *C v S* (n88) 143.
[125] Romanis (n55) 112.
[126] *C v S* (n88) 143.
[127] Romanis (n55) 118.
[128] Romanis (n55) 112.
[129] Colgrove (n57) 555.
[130] Romanis (n55) 109.

potential to be realised.[131] Self-sufficiency is therefore implicitly a factor in determining if an entity has been born alive.

Colgrove also ignores the importance of the being 'born alive' as a requirement of legal personhood. He argues that the paramount question is if the subject has been completely expelled or extracted from the pregnant person.[132] While Colgrove claims that the 'conventional definition' makes no reference to the emergence from gestation[133] as Romanis has claimed,[134] I argue that it is logical to assume that the law has implied that the process of being 'birthed' has ended gestation, as ectogestation marks the first time that external gestation is possible. To assume that the physical change in location amounts to evidence that a gestateling is legally born alive ignores the ways in which AAPT treats a gestateling and as if it had never left the pregnant person by continuing gestation. Colgrove correctly claims that a gestateling *would* likely be perceived to have been birthed, something which most academics agree upon,[135] yet fails to acknowledge the further nuances that encompass the definition of being born alive and their significance.

AAPT has been designed to continue the process of gestating as if the gestateling has never been extracted from the uterus.[136] Romanis further argues that it would seem logical that 'removal from the uterine environment only to be placed in an [artificial placenta] should not be considered legal birth because the processes that traditionally occur before birth are continued'.[137] None of the birth processes as outlined by Greasley[138] have occurred as it is not necessary for the gestateling to do so as they are still in an environment allowing them to gestate as if in utero. It is illogical to solely rely on the basic idea that just because the gestateling has been expelled from a pregnant person that a gestateling would be legally classed as being born. The idea of independence or separation from the

[131] Romanis (n112) 15.
[132] Nicholas Colgrove 'Artificial Wombs, birth and 'birth': a response to Romanis' (2020) 46 J Med Ethics 554, 554.
[133] Ibid 554.
[134] Romanis (n55) 114.
[135] Kingma and Finn (n17) 360. Romanis (n4) 727.
[136] Romanis (n55) 109.
[137] Romanis (n55) 109.
[138] Greasley (n74) 191.

pregnant person was stressed in some of the early case law[139] and while the gestateling is separate from the pregnant person, its dependence is simply transferred to the artificial placenta. Colgrove's argument conforms with legal definitions of 'birthed,' but it ignores the vital second part of the test for legal personhood and the requirement to be 'born alive'.

Historically, when examining if an entity was born alive, this has been done in relation to its death.[140] Questioning the legal status of an entity which is currently in existence is a different matter which would be more difficult for the court as there is something in some state of life whether that be a fetus or a neonate. It would seem unlikely, when considering this from a more human perspective, that when presented with this issue that a court would declare that a gestateling was not born alive – even if there is evidence to disprove this. A comparable case is *Re A*[141] where the conjoined twins' dependence on the other was not evidence that the dependent twin did not have legal personhood.[142] To question an entity's legal status in reality is an entirely different decision to examining it pre-emptively. Even if the gestateling's demonstration of life functions does not conform to the legal definition[143] I still believe it to be considerably more likely that the gestateling will be granted legal personhood. To state that they are not born alive would seem absurd.

It could also be argued that using *Re A* as a form of precedent in this area, it could be found that a gestateling's dependence on AAPT is not analogous to a fetus' dependence on a pregnancy person. Following this conclusion, the gestateling would be found to have legal personality despite it's lack of self sufficiency. This would appear to create a hierarchy whereby physical dependence on another human means an entity does not have legal personhood, but where an entity has equal dependence on a machine it will have more legal protections. I believe that this would be an inconsistent approach for the law to assume, however it remains the likely approach to be taken. AAPT could be viewed as akin to NIC, where physical dependence on a machine does not negate

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[139] *Attorney Generals Reference No 3 of 1994* [1998] AC 245 (HL) 249; *Rance* (n66) 620.
[140] *Crutchley* (n62), *Poulton* (n63).
[141] *Re A* (n85).
[142] Re A (n85) 255.
[143] The potential impact that being able to physically see an entity which normally cannot be comprehended in such a way is explored in more detail in chapter two.

legal personality. For reasons that have been explored above, this argument is flawed, as an entity in NIC must be significantly more developed to withstand the treatment. Regardless, it is improbable that the courts would declare a gestateling to not possess legal personhood.

Should the Gestateling be Granted Legal Personhood?

The ILPA stated that 'capable of being born alive' is from 28 weeks,[144] however this was modified by the AA to 24 weeks.[145] The current aim of the Philadelphia 'biobag' model is to treat fetuses at around 23 weeks.[146] This could be exploited by some to argue that consequently, any fetus at and above 23 weeks should be 'born alive'. It would be incongruous of the law to claim that a fetus in utero at the same gestational age as a gestateling in AAPT (who has been afforded legal personhood) would be not capable of being born alive and could be aborted under s.1(1)(a) of the AA.[147] It is recognised that a potential danger of the introduction of AAPT and its use on extremely premature infants could be the lowering of the viability threshold[148] as younger gestatelings are treated successfully by the technology. However, if this impacts pregnant people who are not using AAPT for their gestation, a reduction in the viability threshold could unfairly restrict their access to abortion.[149] A simple way to dispel this argument is by re-affirming that the fetus and the gestateling are fundamentally different entities.[150] The fetus is physically attached to the pregnant person while the gestateling is only reliant on the pregnant person for a selected period before being reliant on AAPT. A gestateling in AAPT is fundamentally different to the fetus inside a pregnant person. A gestateling does not exist inside of a pregnant person and so is an entirely separate entity to a fetus, whose rights are usurped by a pregnant person's.[151] A fetus can never be considered a separate entity

[144] ILPA (n52) s.1(2).
[145] AA (n51) s.1(1)(a).
[146] Partridge (n16) 2.
[147] Colgrove argues this point, claiming that it would be wrong for subjects of partial ectogestation to not be morally equivalent to a neonate (however his argument becomes less convincing as he claims that this is because a subject of AAPT should be defined as a neonate as they have been born recently, which is an argument I find wholly unconvincing as explored in this chapter). Colgrove (n57) 724-725.
[148] Claire Horn 'Why Abortion Decriminalisation is Needed Ahead of Ectogenesis' (2021) 29 Med Law Rev 80, 83.
[149] ibid.
[150] Romanis (n55) 115.
[151] Romanis (n55) 102.

until birth has occurred as the pregnant person's bodily autonomy and their own rights will be placed above the fetuses.[152]

Steiger argues that it would be unfair of the law to use two sets of rules for two sets of 'fetuses' at the same stage of development simply due to the environment that they are developing in.[153] He argues that the way to solve this issue is to make born synonymous with viable which would 'protect ectogenetic fetuses, eliminate the current grey area in reproductive rights between viability and birth' where a fetus is protected 'by compelling state interests' but is not yet a person.[154] This argument not only assumes that the only way to 'protect' gestatelings is to grant them legal personhood,[155] but is also flawed as it would grant personhood to fetuses in utero which have not been born yet. The idea of making viable and born synonymous is problematic. It would lead to fetuses being granted personhood in utero, which could mean that their rights as people could be prioritised over the pregnant person's bodily autonomy. This would also impact a pregnant person's right to have an abortion. The state currently can be argued to only have an interest in fetuses which are 'capable of being born alive'[156] as it is only after this stage, 24 weeks, where limitations on abortion are in place[157] and offences such as child destruction[158] can be committed. The law has adjusted viability according to evolving medical technologies[159] as is shown in the change in 'capable of being born alive' in ILPA from 28 weeks to 24 weeks in the AA. Romanis argues that this lack of a precise definition of legal viability is intended to further encompass future developments without needing statutory amendment.[160] Moreover, allowing 'viable' and 'born' to become synonymous would be dangerous if the viability threshold were to move below 24 weeks (which could happen considering the rate of medical advancement, and that AAPT is aiming at treating infants below viability) as it

[152] *Montgomery v Lanarkshire* [2015] UKSC 11, [2015] AC 1430, 1469 (Baroness Hale).
[153] Eric Steiger 'Not of Woman Born: How Ectogenesis Will Change the Way We View Viability, Birth and the Status of the Unborn' (2010) 23 JL & Health 143, 158.
[154] Ibid 162.
[155] Romanis (n55) 120. Here, there is also some comparison to the ways in which animals are protected even though they do not possess legal personhood e.g., Animal Welfare Act 2006.
[156] ILPA (n52) s.1(2).
[157] AA (n51) s.1(1).
[158] ILPA (n52) s.1.
[159] Romanis (n55) 116.
[160] Romanis (n55) 116.

would be granting legal personhood to fetuses that would not be capable of truly independent life apart from AAPT. Therefore, Steiger's argument in synonymising viable and born would have a disastrous impact on the rights of the pregnant person.

On the other hand, affording the gestateling the same rights as a neonate would not reflect their biological differences.[161] As previously explained, a neonate in NIC would be performing certain life functions, or would be beginning to attempt to perform them, independently whereas a gestateling is unable to do this due to their physiology. The gestateling is 'more ontologically similar to a fetus in utero'[162] however, a fetus in utero is unborn which (as explained above) a gestateling is not. A gestateling appears to exist in-between a fetus and a neonate, whereby calling it either would be scientifically incorrect. A gestateling in AAPT should not be afforded full legal personality as it has not been 'born alive,' and it is fully dependent on AAPT to continue its gestation as if still in utero unlike a neonate. This also means that any potential conflict with a fetus in utero is avoided.

Chapter Summary

Despite being debated in law for many years, the test for legal personality still has uncertain parameters. Until the definition of 'born alive' is clarified, it cannot be said for certain what an outcome may be. The born alive test remains significant as it marks the beginning of legal personhood. Ultimately, whether a gestateling is afforded legal personhood is the core of this thesis and will decide how subsequent law is applied to the entity. Because there is not a conclusive decision regarding the gestateling's legal status creates complexities that cannot be answered by any person other than the courts – the rest of this thesis will speculate and apply both sides of the argument.

A gestateling in AAPT satisfied the first element of the two-stage test for legal personhood; it has been birthed. The location-based definition that the law uses to determine birthed means that the physical transfer in location from in utero to being ex utero and inside the artificial placenta would qualify as birth. This simplistic first element in the two-stage test simply seeks to question the

[161] Romanis (n10) 203.
[162] Romanis (n55) 98.

physical location of the fetus and determine if it has been entirely expelled from its pregnant person. This is only part of the test for legal personhood, and the more complex requirement of being 'born alive' is a more difficult hurdle to overcome.

Whether a gestateling has been 'born alive' is a more ambiguous question which does not have a certain answer. The common law definitions of born alive are (potentially) inconsistent, and this has been recognised as needing change, though this has not materialised. A gestateling in AAPT would not be at the stage of development where it would be capable to begin to perform, or attempt to perform, any of its own life functions, including breathing. The very design of the prototypes 'artificial womb' highlights this.[163] AAPT is designed to perform life functions for the gestateling as they are unable to do so, unlike NIC which assists the neonate in their attempts to perform these functions. Whether 'breathing' in AAPT would be held to be comparable to breathing as a neonate ex-utero would is unclear, as a gestateling breathes via liquid ventilation through the umbilical cord[164] rather than through the inflation of the lungs.[165] However, the law has held that the one of the most significant aspects of this breathing is that it be separate from the pregnant person;[166] which a gestateling is. Being confronted with an existing entity and needing to decide its legal status is a much more complex issue for the courts to be confronted with, and it is difficult to conclude that they would decide that the gestateling is not born alive. The courts would be more likely to favour granting legal personhood to the gestateling and finding that it has been born alive once placed in AAPT.

Ultimately, whether a gestateling is granted legal personhood is uncertain. It seems likely that the courts would be more inclined to grant legal personhood than to not grant legal personhood, yet nothing can be certain due to the ambiguity in the definition of 'born alive' or until this technology is in use and a case reaches the courts. This is a fundamental question which this thesis is based upon as the legal status of the gestateling determines the level of protections it has. The next logical question to be considered is what affect the outcome of the born alive decision would have on the gestateling. I

[163] Partridge (n16) 2.
[164] Partridge (n16) 2.
[165] Kingma, Finn (n17) 358.
[166] *Rance* (n66) 619.

believe that the most significant effect of such a decision will be if AAPT can be switched off and ectogestation can be ended before the gestateling has reached term. In the subsequent chapters, I will examine both possibilities; either the gestateling is born alive, or it is not. This means examining both abortion law (if the gestateling is not granted legal personhood) and end of life law (if the gestateling is granted legal personhood). Due to the ambiguity in the outcome of the 'born alive' question, there is no clear path which could be taken regarding this matter. Therefore, the question of legal status remains a significant question that must be answered as it is the basis for many other legal issues that may arise once this technology is in use in the future.

CHAPTER TWO: 'ABORTING' A GESTATELING WITHOUT LEGAL PERSONHOOD

As legal personhood is constructed as a binary,[167] the gestateling will either posses it or they will not. This chapter hypothesis how the current legal framework in place for abortion could be applied to switching off AAPT. The only comparable entity that exists without legal personality, yet still with a level of protection, is a fetus. There is no other current legal framework in existence that considers the ending of the gestation, therefore must be considers when examining the potential ending of ectogestation. The AA is unsuitable for such a role,[168] as it was not conceived with ectogestation in mind and is largely focused on the pregnant person having the abortion rather than the fetus.

This chapter will firstly attempt to apply the framework of the AA to a scenario involving switching off AAPT. This application is entirely hypothetical. As has been discussed previously, it is only because of the ambiguity as to the legal status of the gestateling that this question can be asked. What does become apparent throughout this chapter is that the AA does not allow for easy or comfortable application to the gestateling and AAPT, and that it is not fit for this purpose – one in which it never intended. As I have argued in chapter one that the gestateling should *not* be considered to be born alive, this chapter poses interesting questions as if the AA is not fit for purpose, entirely new laws would have to govern the entity. Again, this is not explored in detail as this would require much more analysis and development that the scope of this thesis permits.

This chapter is largely split into four different scenarios which are used to illustrate complex problems that must be addressed before AAPT comes to fruition. This includes where the gestateling is found to be 'seriously handicapped',[169] what could occur if the medical professional conscientiously objected to the procedure as they are able to do in an abortion and what would happen if only one of the genetic progenitors wanted AAPT to be 'switched off'.

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[167] Romanis (n55) 119.
[168] Alghrani (n4) 169.
[169] AA (n51) s.1(3).

I will then consider the role that ownership of the gestateling could have, in the same light as ownership of embryos has been questioned in cases concerning in-vitro fertilisation (IVF). I will not explore the possibility of the gestateling being treated as anything other than human, as this is not disputed. Ultimately, no existing legislation can be directly applied to the gestateling as it was not designed for ectogestation, a process which will drastically alter the way in which we perceive pregnancy and birth.

Termination of a Gestateling Using the Abortion Act

The Abortion Act 1967

Abortion is a crime in England and Wales. Under the Offences Against the Person Act[170] (OAPA) ss. 58 and 59 seeking or procuring an abortion is unlawful. It is a crime for a doctor or other person to perform an abortion or provide medication which aims to end a pregnancy, The person having the procedure must be physically pregnant at the time the abortion takes place to be charged.[171] A doctor or other person involved in the abortion procedure can also be charged, but this is irrespective of whether the person is pregnant or not. The Infant Life Preservation Act 1929 (ILPA) s.1(1) criminalised child destruction – the destruction of a fetus 'capable of being born alive', which in the act is presumed to be after 28 weeks gestation.[172] The AA acts as a defence to these crimes, permitting abortion under a set of specific circumstances and conditions, as well as implicitly updating the ILPA's phraseology 'capable of being born alive' to be harmonious with the updated presumption that an entity can survive ex utero from 24 weeks. The AA has been heavily criticised in its current state for being outdated, permitting the over-regulation of abortion throughout pregnancy[173] and many academics have called for changes to be made.[174]

[170] 1861.
[171] Ibid s.58.
[172] ILPA (n52) s.1(3).
[173] Joanna Erdman 'Theorising Time in Abortion Law and Human Rights' (2017) 19 Health Hum Rights J 29, 34.
[174] Claire Horn 'Gestation beyond mother/machine: legal frameworks for artificial wombs, abortion, and care' (DPhil thesis, Birkbeck University of London, 2020) 74; Zoe Tongue 'Crowter v Secretary of State for Health and Social Care [2021] EWHC 2536: Discrimination, Disability, and Access to Abortion' (2022) 30 Med Law Rev 177, 186; Emily Jackson 'Abortion, Autonomy, and Prenatal Diagnosis' (2000) 9 Soc Leg Stud 467, 471; Sally Sheldon 'The Decriminalisation of Abortion: An Argument for Modernisation' (2015) 36 Oxford J Leg Stud 334, 357.

Abortions were not entirely illegal pre-1967. As early as 1927 that abortions for eugenic purposes were not permissible, however that consideration of an indication of poor fetal health or disability could form part of the overall assessment of the 'health' of the patient in the reports of the a joint meeting of the Medico-Legal Society and the Section of Obstetrics and Gynaecologists of the Royal Medical Society.[175] Performing abortions where there was serious health risk to the fetus was routine practice. Williams stated that abortions were routinely performed in a number of hospitals where the pregnant person had caught rubella during the first trimester due to the risks this carried to the fetus.[176]

This was a key debate in 1939 in the case of *Bourne.*[177] A 14-year-old girl was raped, the accused was convicted of the crime, and she had fallen pregnant because of the assault. Dr Bourne performed an abortion with the consent of the young girl's parents before being accused of unlawfully procuring a miscarriage under s.58 of the OAPA. The Court held that the jury should take into consideration that Bourne was intending on ending the pregnancy to prevent the girl becoming a 'physical and mental wreck',[178] that the abortion was performed by a highly skilled man in a hospital for no fee[179] and that the girl in question was 'normal' and 'decent'.[180] Bourne was acquitted. This case established that lawful abortions were possible,[181] even before legislation explicitly permitted it.

The AA sets out 4 defences to the crime of abortion. The first, known as the 'social ground' for abortion,[182] is s.1(1)(a)[183] which permits abortion is up to 24 weeks if two doctors acting in good faith determine that continuing the pregnancy would carry a greater risk than termination to the pregnant person or to any existing children. The debates cautioned against a 'wide open door' permitting abortion on request ,[184] yet from the outset the majority of abortions were authorised on

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[175] Sheelagh McGuiness 'Law, Reproduction and Disability: Fatally 'Handicapped'?' (2013) 21 Med Law Rev 213, 221.
[176] Glanville Williams 'Legal and Illegal Abortions' 4 Br J Criminol 557, 563.
[177] *R v Bourne* [1939] 1 KB 687 CCC.
[178] Ibid 694.
[179] *Bourne* (n176) 690.
[180] *Bourne* (n176) 695.
[181] Bernard Dickens *Abortion and the Law* (MacGibbon & Kee Ltd, 1966) 43.
[182] Jackson (n4) 104.
[183] AA (n51).
[184] HC Deb 29 June 1967 vol 749 col 1075.

this ground as the wording left considerable scope for clinical discretion.[185] In 2021, 98% of abortions were authorised under the grounds that continuing the pregnancy would involve risk greater than the termination, to the physical or mental health of the pregnant person.[186] This is largely because pregnancy and childbirth are always going to be more dangerous than abortion earlier in the pregnancy therefore this requirement is easily satisfied[187] as long as the gestational time limit is complied with. Jackson even argues that this ground is so un-restrictive that it operates in practice to render every pregnancy lawfully terminable within the first 24 weeks.[188]

The second and third possible defence to abortion is s.1(1)(b) and (c) where termination is determined by a doctor acting in good faith to be necessary to prevent grave or permanent injury to the pregnant person or that the continuance of the pregnancy would involve a risk to the life of the pregnant person greater than if the pregnancy were terminated. This is a less common recorded reason for abortion, with fewer than 111 abortions in 2021 taking place under this reasoning.[189]

The final defence is s.1(1)(d), which permits abortion where there is a substantial risk that if the child were born it would suffer from such physical or mental abnormalities as to be 'seriously handicapped'.[190] This is also an uncommon ground for abortion, with only 3,370 abortions performed under s.1(1)(d) throughout 2021. Congenital malformations were the most commonly provided reason.[191] This defence is unique in that it is concerned not with the condition of the pregnant person, but the health of the unborn fetus. While there are arguments that state that this ground's purpose could be more focused on limiting the potential adverse effects a disabled child could have on struggling parents,[192] it is still distinctive in its formation when compared to the other grounds.

[185] Sally Sheldon 'The Abortion Act (1967): a Biography) (2019) 39 Leg Stud 18, 25.
[186] Department of Health and Social Care 'Abortion Statistics 2021' <https://www.gov.uk/government/statistics/abortion-statistics-for-england-and-wales-2021/abortion-statistics-england-and-wales-2021> accessed 7th December 2022.
[187] Jackson (n173) 470.
[188] Jackson (n173) 470.
[189] Abortion Statistics 2021 (n185).
[190] AA (n51) s.1(1)(d).
[191] Abortion Statistics 2021 (n184).
[192] Sally Sheldon, Stephen Wilkinson 'Termination of Pregnancy for Reason of Fetal Disability: Are there grounds for a special exception in law?' (2001) 9 Med Law Rev 85, 99.

Scenario One: Both Genetic Progenitors Consent to the 'Abortion' of the Gestateling in AAPT

It is only the consent of the pregnant person which is legally required for abortion.[193] The other genetic progenitor is irrelevant to the decision.[194] For a couple undergoing partial ectogestation, once their gestateling is transferred into AAPT this logic no longer applies as there is no pregnant person. Consider this scenario:

> *James and Betty are a married couple. Betty becomes pregnant and both wish the pregnancy to proceed. They decide to use AAPT and to undergo partial ectogestation. The fetus is removed from Betty at 22 weeks gestation and placed into AAPT. However, due to the relationship ending after the transfer of the fetus James and Betty now no longer wish to have a child and want to be able to 'switch off' the AAPT, ending the life of the gestateling.*

After the fetus has been removed from Betty, she no longer has the power as a pregnant person to make decisions regarding her body that she would have whilst pregnant. The process of fetal extraction essentially is a process which amounts to Betty relinquishing her physical pregnancy and any independent reproductive choice the law affords pregnant people. There can be no arguments for bodily autonomy as there is no physical body facilitating gestation.

In the above situation, the gestateling has been removed from Betty at 22 weeks old – which is slightly below the approximate gestational age that this technology is aiming to assist.[195] It is not unreasonable to expect this limit to change as the prototypes develop and improve over the course of clinical translation.[196] By the time the decision has been made to terminate the gestateling, it is separate from Betty and is at 23 weeks. Significantly, this is before abortion becomes more difficult to access post 24 weeks. As stated above, a fetus can be aborted under the 'social ground' for abortion if the fetus is has not reached 24 weeks gestation and it can be proved that continuing the pregnancy would carry a greater risk to the physical or mental health of the pregnant person, or any existing

[193] *Paton* (n50).
[194] *Paton* (n50)
[195] Partridge (n16) 11.
[196] Hyun Jee Son 'Artificial Wombs, Frozen Embryos, and Abortion: Reconciling Viability's Doctrinal Ambiguity' (2005) 14 UCLA Women's LJ 213, 221; Bulletti (n15) 127.

children, than if the pregnancy were terminated. Applying this to a gestateling in AAPT presents significant difficulties.

The first problem that arises in the application of the AA to a gestateling is that there is no pregnant person in this situation. For the defences in the AA to be applicable, and a lawful abortion to take place, it must be established if an unlawful abortion could take place using AAPT. As the physical pregnancy has been ended with fetal extraction, it is not possible for any offence under the OAPA to be committed, as both ss. 58 and 59 both explicitly refer to abortion being the ending of a *pregnancy.* While the offence can be committed by a third party, for example an individual performing the abortion, the language used in the OAPA does not allow for deviation from the ending of a traditional pregnancy.[197]

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It is arguable that an offence is more likely to be committed within the ILPA. Child destruction is committed where 'any person who, with the intent to destroy the life of a child capable of being born alive, by any wilful act causes a child to die before it has an existence independent of its mother'.[198] Although the ILPA states that the crime can only occur before the entity is independent of the pregnant person, I would argue that this can be implied to mean before it has an existence outside of gestation/ before it is capable of an independent existence in which it can support its own life functions. Exactly what 'capable of being born alive' would mean for an externally gestated being would need to be decided. Currently the inference in law is that a fetus is only capable of being born alive after 24 weeks,[199] importantly because at this stage of medical advancement it is only at this age that a fetus can be supported ex utero through NIC. AAPT could make ectogestation possible for gestatelings before 24 weeks.[200] Consequently, it is entirely possible that a situation could arise where a gestateling under 24 weeks is being treated by AAPT and the idea of it being switched off is being considered. For this offence to be applicable, 'born alive' would have to be viewed as meaning

[197] Elizabeth Chloe Romanis 'Artificial Womb Technology and the Choice to Gestate Ex Utero: Is Partial Ectogenesis the Business of the Criminal Law?' (2019) 28 Med Law Rev 342, 346.
[198] ILPA (n52) s.1(1).
[199] AA (n51) s.1(1).
[200] Romanis (n4) 753.

emerging from complete gestation[201] so the gestateling still does not have full legal personhood whilst in AAPT.

The ILPA explicitly refers to the idea of an entity having an 'independent existence of its mother.' Although it has never been possible before, AAPT offers a unique advancement as a gestateling can have an independent existence from a pregnant person, yet still not have completed the gestation process and will rely on AAPT as if still in utero. Whether child destruction could even be committed is questionable because the gestateling is already entirely separate to a pregnant person.

Even if an offence cannot be committed it is still important to consider the AA, as it still would be the only legislation to use as a guide as to the kinds of grounds on which termination of a gestateling without legal personhood may be permissible. If a gestateling has a similar legal status to a fetus the AA is the closest legislation to look to. If anything, that this is the only potential guide highlights that the current reproductive law is not prepared for such rapid developments which alter pregnancy and birth as we know it.

Applying the AA to Scenario One

Whilst Betty was initially pregnant, choosing to undergo partial ectogestation means choosing to not gestate her fetus fully in utero. All abortion legislation is written with the fact that a fetus is part of a pregnant person in consideration; the 'social ground' in question here is concerned with the health of the pregnant person and the risks associated with carrying a pregnancy and childbirth when compared to termination on their health. Abortion is a procedure that is being done to a *pregnant* person. It is then seemingly impossible to 'abort' a gestateling as there is no pregnant person to have the procedure. This is only the first sign that abortion law is not meant for application in situations of ectogestation.

Once the gestateling has been removed from Betty there are no further risks to her *physical* health.[202] Three out of four provisions for abortion are concerned with the physical and mental health

[201] Romanis (n113) 14.
[202] AAPT means that Betty is no longer required to sustain the pregnancy with her labour after the fetal extraction is complete. Ending physical pregnancy early in gestation limits the time that the pregnant person

of the pregnant person throughout their *pregnancy*, clearly highlighting the significance of a gestating genetic progenitor physically gestating a fetus within their uterus. Even the defences within the AA focus on physical pregnancy. Since abortion is less concerned with the fetus and prioritises the pregnant person, it could be argued that terminating a gestateling in AAPT would not be abortion as there is no pregnant person physically involved. If an offence cannot be committed, an unlawful abortion cannot take place, therefore the defence of the AA cannot be used, and a lawful abortion also cannot take place. Thus, an 'abortion' under the social ground for damage to the physical health of Betty would be impossible to claim as the physical link is severed upon transfer into AAPT.

The 'social ground' also permits abortion where there is a risk to the pregnant person's mental health. Unlike physical side effects of pregnancy, mental health is not reliant on a physical connection. It is entirely possible that allowing a gestateling to continue gestation in AAPT could involve a risk greater than if the gestation were terminated of injury to the mental health of a genetic parent. Abortions under this 'social ground' most commonly are found to occur where there is a risk to the individual's mental health.[203] The Royal College of Obstetricians and Gynaecologists have contested the description of s.1(1)(a) of the AA as the 'social ground' and instead have suggested that its reference to health should be in line with the WHO's definition which is 'a state of physical and mental well-being, not merely an absence of disease or infirmity'.[204] It follows that if the latter definition of health was applied, it would only need to be found that abortion would be more likely than continuing gestation to promote mental wellbeing – there is no need to show that it would be more likely to prevent psychiatric illness. This lowers the threshold of this requirement further, as in nearly all situations where there is an unwanted pregnancy, an abortion would ultimately promote that pregnant person's mental wellbeing. Whilst this is only a hypothetical interpretation of the social

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would suffer pregnancy symptoms whilst AAPT ensures that the gestateling still reaches full gestation. Some academics have argued that this is a potential advantage to AAPT development, that pregnancy would no longer be a physical burden which gestating people would have to undergo alone. See Jennifer Hendricks 'Not of Woman Born: A Scientific Fantasy' (2011) 62 Case W Res L Rev 399, 410.

[203] Abortion Statistics 2021 (n186).

[204] Jackson (n174) 79.

ground for abortion, it is still very unlikely that such a liberal approach would be taken by the courts as it would effectively make it possible for all gestatelings to have AAPT switched off.

In this scenario if the genetic progenitors not longer wished for their gestateling to develop to term, terminating it once it was placed into the artificial placenta would undoubtedly promote the mental wellbeing of both Betty and James. The question of the importance of the pregnant person must be considered again. As Betty is no longer pregnant, and voluntarily gave up that when consenting to the gestateling's transfer into AAPT, whether the promotion of her mental wellbeing would be enough is doubtful. What has been made clear throughout this chapter thus far is that the law places value on physical pregnancy in the construction of the offences and defences to abortion. Therefore, the mental health element within the AA is not just about the promotion of mental health where the individuals are involved in reproduction, but about the protecting the mental health of pregnant people. This is reinforced as the other genetic progenitor has no power in making the decision to abort, and their opposition to it does not factor into the legality of the decision.[205] The AA is not focused on the fetus, it is focused on the wellbeing of pregnant people.

As I have argued earlier, any abortion that takes place is a procedure that is being done to the pregnant person rather than to the fetus. It would therefore not be possible to abort a gestateling as there is no pregnant person there to have the procedure. However, the AA remains the only guidance in the hypothetical situation of terminating an entity that has not been born alive. The language within the AA was conceived with only physical pregnancy in mind; ectogestation would not have been thought of as even a distant possibility. If the courts decided to take this path in legislating ectogestation and determining the legal status of the gestateling as not born alive, some of this could be fixed by altering the language of the legislation to be inclusive of ectogestation.

The application of the AA to ectogestation raises further questions concerning equality between genetic progenitors as it is not equitable that just because Betty *has* been pregnant that the promotion of her mental wellbeing should be valued greater than James.' It is only correct that a

[205] *Paton* (n50).

pregnant person is afforded greater rights than the putative parent as it is their body which is being subjected to a gestating fetus and the subsequent effects of pregnancy or abortion. Thomson's famous violinist analogy highlights that because of the burden of pregnancy, ultimately all decisions regarding the fetus because they impact the pregnant person should be made independently.[206] However, in a situation where neither progenitor is currently pregnant, and the gestateling is a separate entity to both the former pregnant person having greater rights is no longer logical. Brassington argued that in such a future where ectogenesis is an option, both parents would have to be consulted on equal grounds[207] an argument which Räsänen has agreed with stating that 'a right to the death of the fetus is a right of the genetic parents and only together can they use this right'.[208] Because the gestateling is being gestated ex-utero, this entirely changes the role of the genetic progenitors, and equalises them (at least post-fetal extraction). It would be illogical for a person in Betty's position, once no longer pregnant, to be deemed to be in a more consequential position than the other parent (James). It is unlikely that the AA would be interpreted to allow the promotion of the mental health of *any* person involved in reproduction (which Betty is when no longer pregnant), but instead it is only intended to protect the mental health of *physically* pregnant people.

Whether Betty and James would be able to 'abort' the gestateling under s.1(1)(a) of the AA is contentious and is largely dependent on if the courts would deem the language used within the AA as only applicable to a physical pregnancy. Where a gestateling has not yet reached the viability threshold and has been declared to not be 'born alive' therefore does not possess legal personhood, it would seem contradictory to ascribe to it a different moral status than a fetus in utero. Yet this decision would be ultimately down to the courts to decide based on their interpretation of the AA and its applicability to ex utero gestation. Although, it is questionable whether the AA would be applicable to the gestateling in AAPT, throughout the rest of this chapter I will discuss further issues which could

[206] Judith Jarvis Thomson 'A defence of abortion' in Nigel Warburton *Philosophy Basic* Reading (2nd edn, Taylor & Francis, 2005) 124.
[207] Iain Brassington 'The Glass Womb' in Frida Simonstein *Reprogen-Ethics and the Future of Gender* (vol 43, International Library of Ethics, Law and New Medicine, 2009) 203.
[208] Joona Räsänen 'Ectogenesis, abortion and a right to the death of the fetus' (2017) 31 Bioethics 697, 698.

arise *if* the AA was found to be applicable to ex utero gestation and the subsequent scenarios the courts could face.

Scenario Two: Both Genetic Progenitors Consent to the 'Abortion' of the Gestateling Found to be 'Seriously Handicapped'

Prenatal testing can indicate whether a fetus has a disability which would amount to being 'seriously handicapped' under the AA s.1(1)(d). The testing is largely accurate, but not certain.[209] In the case of partial ectogestation, upon the transfer into AAPT many of these disabilities would become known – especially if they had any physical markers. Current prototypes have been designed so that the gestateling is visible whilst inside of AAPT, for example the biobag is clear.[210] The increased visibility this permits allows any physical markers of disability to become easier to diagnose than if the entity was in utero. It would be known assuredly if the gestateling had a disability. However, what disabilities amount to 'seriously handicapped' vary in severity.

Firstly, it must be established what the language in s.1(1)(d) of the AA entails before bringing into question any scenarios involving AAPT and a disabled gestateling. The phrases within this defence to abortion have no legal definition and their interpretation is largely unclear and extensive, covering disabilities of varying severity and mortality rates.[211] This has created controversy surrounding the potential eugenic application of this ground, especially in situations regarding the abortion of fetuses found to be at risk of having Down's Syndrome.[212]

Guidelines from the Royal College of Obstetricians and Gynaecologists (RCOG) have stated that whether a risk is substantial is based upon factors including the severity of the condition, timing

[209] The use of NIPT for Down's, Edward's and Patau Syndrome is good but not perfect; Sian Taylor-Phillips et al 'Accuracy of non-invasive prenatal testing using cell-free DNA for detection of Down, Edwards and Patau syndromes: a systematic review and meta-analysis' (2016) 6 BMJ Open 1, 10 <https://bmjopen.bmj.com/content/bmjopen/6/1/e010002.full.pdf> accessed 20 April 2023. However, NIPT is still the most reliable screening test for chromosomal aneuploidies. Mehdat Sabry Alberry et al 'Non invasive prenatal testing (NIPT) for common aneuploidies and beyond'(2021) 258 Eur J Obstet Gynecol 424, 427.
[210] Partridge (n16) 4.
[211] For example, a termination after 24 weeks can be sought after a diagnosis of Down's Syndrome which is not necessarily 'serious' or 'equate to a life of suffering'. Marwan Habiba 'Controversies in applying t the Abortion Act to Down syndrome' (2019) 14 Pub Pol Law 57, 61.
[212] Habiba (n211) 59.

of the diagnosis as well as the likelihood of it occurring.[213] RCOG have stated that where a positive diagnosis is not possible, risk must be seen as substantial by 'informed persons with no personal involvement in the pregnancy and its outcome'.[214] This suggests that the decision to abort a fetus which is found to potentially have a disability should be made by a medical professional without input from the genetic progenitors or any other potential parents of the fetus.[215]

RCOG states that 'seriously handicapped' at minimum would be any physical or mental disability which would cause significant suffering or long-term impairment of their ability to function in society.[216] Past guidelines have also cited WHO definitions of disability which suggest that a 'person is only likely to be regarded as seriously handicapped if they need' certain support; either a 'helping hand' or 'dependent performance' (the need for assistance most of the time).[217] Factors including the probability of effective treatment, the suffering that would be experienced and the degree of self-awareness have also been considered as potential criteria.[218]

There have been various cases in which the severity of potential disabilities which have permitted an abortion has been questioned. Notably, in *Jepson*[219] an abortion was permitted under s.1(1)(d) after the fetus, which had past 24 weeks gestation, was diagnosed with a bilateral cleft lip and palate. Initially, the call for judicial review of this case was rejected by Silber J, with him citing the medical professionals 'opinions.[220] Grear argues that this, alongside the requirement under s.1(1)(d) that two medical professionals give their opinion on this matter in good faith, implies that a doctors word must be construed as veracious.[221] She argues that therefore, the AA grants the power to

[213]Royal College of Obstetricians and Gynaecologists 'Termination of Pregnancy for Foetal Abnormality' (May 2010) < https://www.rcog.org.uk/media/21lfvl0e/terminationpregnancyreport18may2010.pdf> accessed 14 December 2022.
[214] Royal College for Obstetricians 'Termination of Pregnancy for Foetal Abnormality in England, Wales and Scotland' (January 1996) [3.2.1.] referenced in Rosamund Scott 'Interpreting the Disability Ground of the Abortion Act' (2005) 64 Cambridge Law J 388, 390.
[215] Scott (n214) 390.
[216] RCOG (n213).
[217] Scott (n214) 392.
[218] Ibid.
[219] *Jepson v Chief Constable of West Mercia Police Constabulary* [2003] EWHC 3318 (QB).
[220] *Jepson* (n219) [7].
[221] Anna Grear 'The curate, cleft palate and ideological closure in the Abortion Act 1967 – time to reconsider the relationship between doctors and the abortion decision' (2004) Web Journal of Current Legal Issues 3 <https://uwe-repository.worktribe.com/OutputFile/1064880> accessed 8 January 2023.

control abortion solely to the medical profession, especially in situations where a pregnant person would seek the advice of a medical professional[222] as in the case of a fetus with a potentially serious handicap. RCOG guidelines also suggest that the decision of what amounts to 'seriously handicapped' should not involve anyone who is invested in the outcome of the pregnancy.[223] This highlight that the decision taken by medical professionals is hard to refute as they are, in the eyes of the law, a paramount judge in these matters.

The following scenario depicts a potential diagnosis of a fetus post-transferral into AAPT:

> *Betty and James agree to transfer their fetus into the artificial placenta at 25 weeks gestation. Upon transferral of the fetus to the artificial placenta, it was found that the gestateling would be born with Tay-Sachs disease. James and Betty both wish for the gestateling to be terminated because of this.*

In the above scenario the gestateling has been diagnosed with Tay-Sachs, a rare condition which causes neurodegenerative symptoms proving fatal.[224] This can be diagnosed early in pregnancy first by establishing via blood testing whether the pregnant person is a carrier of the gene causing Tay-Sachs, before any fetal diagnosis is confirmed through amniocentesis or chorionic villus sampling (CVS).[225] Tay-Sachs can be diagnosed through CVS or amniocentesis from around 13 weeks,[226] but it is not routinely screened for during pregnancy as in the general population it is so rare; only 1 in 320,000 births are affected.[227] Tay-Sachs is more prevalent in certain populations including: Ashkenazi Jewish, French Canadian and Irish.[228] In this scenario it can be assumed that neither Betty or James belong to any of the high-risk groups and were not aware that they were carriers of the gene and would not have access to extra screening.

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[222] Ibid.
[223] RCOG (n213).
[224]Valeriya Solovyeva et al 'New Approaches to Tay-Sachs Disease Therapy' (2018) 9 Front Physiol <https://www.frontiersin.org/articles/10.3389/fphys.2018.01663/full> accessed 9 January 2023, 3.
[225] Daisy Khera et al 'Tay-Sachs disease: a novel mutation from India' (2018) 11 BMJ Case Rep 1, 2 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6301636/> accessed 12 January 2023.
[226] Raelia Lew et al 'Tay-Sachs disease: perspectives from Australia' (2015) 8 App Clin Genet 19, 23.
[227] Ibid, 19.
[228] Khera (n225) 19.

One of the counter arguments to any scenario involving attempting to turn off the AA due to an impairment would be that most prenatal screening occurs early in pregnancy and would be detected long before transfer of the fetus to AAPT would occur. In the UK diagnostic tests are generally performed from 16 weeks of pregnancy[229] whilst prototype AAPT is aiming to support premature fetuses from around 23 weeks.[230] Even if the technology exceeds expectations and can support less developed fetuses, the likelihood is that the necessary prenatal testing would have already been completed. It is possible that prenatal screening would be so effective, that most fetal impairments would be diagnosed early in pregnancy before the transfer could take place. However, there are some rare conditions which testing may not recognise such as Treacher-Collins Syndrome.[231] Tests for this syndrome are expensive and are only done if there is evidence within either genetic parent's family of the presence of the condition.[232] It must also be considered the small number of pregnant people who do not undergo further diagnostic testing after NIPT due to the invasive methods and risk of miscarriage,[233] and consequently have not had a fetal impairment officially diagnosed. Even if these situations would be rare, it is still essential that they are explored before AAPT becomes routinely used in the care of extremely premature gestatelings.

Eugenic is defined as the science of improving the population by control of inherited qualities.[234] By this definition, is it eugenic to switch off AAPT due to the diagnosis of an impairment late in gestation? Shakespeare argues that current practices in the UK are weakly eugenic; they promote technologies of reproductive selection without using coercion, motivated by the medical opinion that disabled lives involve unacceptable suffering.[235] Shakespeare argues that the development

[229] Zarko Alfirevic, Kate Navaratnam, Faris Mujezinovic 'Amniocentesis and chorionic villus sampling for prenatal diagnosis' (2017) 9 Cochrane Database of Systematic Review 1, 2 <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD003252.pub2/epdf/full> accessed 14 January 2023.
[230] Partridge (n16) 11.
[231] Alberto Giubilini, Francesca Minerva 'After-birth abortion: why should the baby live?' (2013) 39 J Med Ethics 261, 261.
[232] Ibid.
[233] Darrin Dixon 'Informed Consent or Institutionalised Eugenics? How the Medical Profession Encourages Abortion of Fetuses with Down Syndrome' (2008) 24 Issues Law Med 3, 11.
[234] Tom Shakespeare 'Choices and Rights: Eugenics, Genetics and Disability Equality' (2010) 13 Disability & Soc 665, 668.
[235] Shakespeare (n234) 669.

of modern screening technology shifts the ground toward the 'perfect baby syndrome' which he described as the expectation that medical expertise will deliver a baby free from impairment or illness.[236] Permitting the termination of a gestateling late in gestation due to disability perpetuates this idea as AAPT could be one of the most exposing screening techniques, if the law were to permit this. NIPT is criticised as an 'instrument of fetal selection' by pro-life activists and some Christian circles.[237] Yet this view does not consider that as NIPT is a method of prenatal testing which does not carry the risk invasive testing does. Therefore, it is possible that more pregnant people opt for this testing as a method of gathering information, not solely to make decisions over termination.[238] The idea that AAPT would be used as a way to screen for disability is an improbable one, the expense alone of ectogestation ensure that this is not an 'easy' method of gestation to access,[239] however it is likely that additional screening would be required in the use of AAPT. This could cause public backlash at the use of AAPT and create antipathy towards AAPT.

For the 'abortion' (switching off AAPT) to be legally permitted, Betty and James would need to seek the good faith opinion of two medical practitioners. In the case of Tay-Sachs, this is a condition which is recognised as being a 'serious handicap' and therefore the abortion would be permitted. The fetal interest argument justifies s.1(1)(d) by claiming that termination benefits the disabled fetus by saving it from a life of suffering.[240] This argument could be applied in the situation of a gestateling with Tay-Sachs as switching off AAPT would prevent the gestateling being born and living a significantly more difficult life than if it did not have Tay-Sachs. As this would satisfy the conditions under s.1(1)(d) and would permit an abortion for a fetus in utero, it would be inconsistent of the law to not permit an abortion for a gestateling, if it were deemed to have the rights of a fetus, in AAPT.

[236] Shakespeare (n234) 666.
[237] Adeline Perrot, Ruth Horn 'Preserving women's reproductive autonomy while promoting the rights of people with disabilities? The case of Heidi Crowter and Marie Lea-Wilson in the light of NIPT debates in England, France, and Germany' (2023) 49 J Med Ethics 471, 472.
[238] Melissa Hill et al 'Has non-invasive prenatal testing impacted termination of pregnancy and live birth rates of infants with Down syndrome?' (2017) 37 Prenatal Diagn 1281, 1286.
[239] Seppe Segers, Elizabeth Chloe Romanis 'Ethical, Translational, and Legal Issues Surrounding the Novel Adoption of Ectogestative Technologies' (2022) Risk Management and Healthcare Policy 2207, 2211.
[240]Sheldon, Wilkinson (n192) 89.

The issue of aborting a fetus with such a severe impairment as Tay-Sachs is a generally accepted view. However, such a severe impairment is rare. There is considerable controversy surrounding abortions under s.1(1)(d) for impairments which are less severe such as Down's Syndrome. This is the most common chromosomal issue in live born babies.[241] The most common features include mental impairments (of which the degree is unpredictable), increased risk of congenital heart defects, leukaemia, hearing loss amongst many other potential complications.[242] Down's Syndrome is a neurodegenerative condition as in adult life it is common to develop senile dementia and neurological alterations which are consistent with Alzheimer's.[243] It is a life-limiting condition, yet the life expectancy of a Down's Syndrome patient has increased in recent years to around 60 years.[244]

There is considerable debate questioning if Down's Syndrome amounts to a 'serious handicap.' Whilst medical conditions linked to Down's Syndrome can be diagnosed, such as cardiac issues, it's severity cannot be known until later in life.[245] Therefore, assessment must be made on generalisations about the condition and personal perceptions of what constitutes a substantial risk of a serious handicap.[246] It cannot be known at birth what future conditions a child with Down's Syndrome may develop, and therefore it cannot be assumed that the child's life would involve a degree of suffering so substantial that it would satisfy the fetal interest argument.

It is possible that this debate could be reignited if a gestateling in AAPT were found to have Down's Syndrome upon transfer, causing the parents to want to switch off the AAPT. Prenatal testing does detect many cases, and most who choose to terminate because of the risk do so before 20 weeks gestation.[247] There is still a small possibility of an undetected case in the future if the parents did not

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241 Dixon (n233) 8.
242 Dixon (n233) 8.
243 Rosa Vacca et al 'Down syndrome: Neurobiological alterations and therapeutic targets' (2019) 98 Neurosci Biobehav Rev 234, 235.
244 Ibid.
245 Habiba (n211) 60.
246 Ibid.
247 National Congenital Anomaly and Rare Disease Registration Service 'Congenital anomaly statistics 2019' (Public Health England, 2020) 21 <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1021335/NCARDRS_congenital_anomaly_statistics_report_2019.pdf> accessed 13 January 2023.

wish to undergo any prenatal testing. *Crowter*[248] initially attempted to tackle this issue, aiming to gain recognition that Down's Syndrome was not a condition which amounted to a serious handicap. This argument was not taken forward in the case, highlighting the difficulty of explicitly determining which conditions do satisfy s.1(1)(d). If Down's Syndrome was held to not be a condition severe enough to satisfy s.1(1)(d) of the AA, it could set a precedent for other less severe impairments to also be included in this exception which would be a difficult line to draw when considering the varying impact these conditions can have on a person.

There are two schools of thought put forth by academics: the fetal interest argument, and the parental interest argument. The fetal interests argument could be applied to a gestateling as it too never leaves gestation and thus could be 'saved' from a life of suffering. This interpretation has been criticised by many as incongruous with the reality of the lives of disabled people; Sheldon and Wilkinson state that in the majority of cases the child which may be 'less good' than it could have been without the impairment, they can still live a positive life worth living.[249] To claim that the termination is in the best interests of the fetus does not reflect the reality of born disabled people, and ignores the wide scope that the wording 'seriously handicapped' within the AA permits. A child with Down's Syndrome may suffer from varying health complications, yet if they receive suitable care their condition does not impair them from living a worthwhile life.[250]

Even if it were held that 'switching off' AAPT is not an abortion, there are still some analogies to the arguments for abortions of disabled fetuses. A gestateling has not yet existed entirely independently of assisted gestation, and therefore a 'gestateling interest argument' could form, identical to the above, claiming that 'switching off' AAPT would be in the best interests of the gestateling as it would 'save' it from an independent life of suffering. This is an argument which I believe would face considerable criticism, with little to defend it from claims of eugenic motivations.

[248] *Crowter* (n174).
[249] Sheldon, Wilkinson (n192) 88.
[250] Chris Cowland 'Selective Abortion: Selecting the Right Response' (2010) 2 King's Student L Rev 55, 57.

A gestateling without legal personality exists in a unique manner in that its physical separation appears to be more conducive to a neonate. Discussing the prospective future of a fetus in utero is very different to discussing that of a gestateling which can be fully seen throughout the gestation process, even if they do have the same legal status. Whilst a gestateling without legal personality diagnosed with Down's Syndrome in this situation *should* be treated in the same manner that a fetus would be, it is highly probable that they would be considered differently. This then creates *another* conflict and risks it appearing that the court assigns more value to ectogestation than in-utero gestation. There is a risk of this area of law becoming convoluted and contradictory to be understood by those seeking AAPT and those administering it.

Another argument which supports s.1(1)(d) is the parental interest's argument which is grounded in the idea that caring for a disabled child may be substantially greater than caring for a non-disabled one.[251] The interests and welfare of prospective parents is inextricably linked to that of their fetus and even in a society which had better social support, it is realistic to think that some of the potential adaptations required for and needs of providing a meaningful life for a seriously disabled child may impact upon their carer's lives and employment prospects.[252] It has been argued that if s.1(1)(d) were construed in this manner, it would become superfluous as it would unnecessarily repeat s.1(1)(a).[253] The only remaining difference between the grounds would be the gestational time limit imposed, yet even that would become redundant in light of this argument.

An opposition to this argument has formed; the 'Disability Discrimination Objection'.[254] It claims that the parental interest argument fails to take into account that many of the issues facing parents of children with disabilities are the result of social discrimination, rather than of impairment.[255] The 'social model' of disability claims that disability is a 'socio-political construction,

[251] Sheldon, Wilkinson (n192) 99.
[252] Nicky Priaulx et al 'Inquiry on Abortion on the Grounds of Foetal Abnormality in England and Wales' (oral evidence) <https://orca.cardiff.ac.uk/id/eprint/50207/> accessed 8 January 2023, 14.
[253] Derek Morgan 'Abortion: the unexamined ground' [1990] Crim Law Rev 687, 689
[254] Sheldon, Wilkinson (n192) 100.
[255] Sheldon, Wilkinson (n192) 100.

a product of organisation and culture'[256] As has been argued previously, to solely rely on this model ignores that for some disabled people and their carers their impairments will cause difficulty.[257] Disabilities can cause pain, a reduced life-span or inabilities of various kinds including such as reduced mobility or the loss of a sense of modality.[258] It is clear that social discrimination and stigmatisation causes difficulties, however these difficulties extend to those who care for disabled children and thus must be evaluated in this light.

Robinson argues that the parental interest argument is not in line with the rest of the AA. If it were that the law was concerned mainly with the parents' burdens, it would conflict with why the AA explicitly permits abortion for one alleged abortion (a potentially disabled child) and not for others such as a sudden illness in the family or a change in financial circumstance.[259] It is possible to construe the AA in this way as s.1(1)(a) would permit abortion in any of the above circumstances as they would be likely to have a detrimental effect to the pregnant person's mental health. The only limitation is the gestational time limit. Therefore, the AA does consider parental interests of importance in a decision to abort, especially that of the pregnant person themselves. RCOG guidelines conflict with this in their suggestion that the decision on whether the impairment is serious enough should be made by a party impartial to the outcome of the pregnancy.[260] Whilst this is guidance and therefore not legally binding, it does seem to imply that it is not the impact that raising a disabled child could have on the parents that matters, but the severity of the condition alone.

Considering the AA in light of the parental interest argument, it would appear that AAPT should be legally permitted to be turned off if the gestateling without legal personality was diagnosed with condition that amounts to a serious risk of being born 'seriously handicapped'. Even though Betty is no longer physically pregnant, both her and James as the prospective parents of the gestateling would still be responsible for the care of the potentially disabled child and this could still

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[256] A Flew 'Disease and Mental Disease' in Arthur Caplan et al *Concepts of Health and Disease: Interdisciplinary Perspectives* (1981, Addison-Wesley, 1st edn) 433.
[257] Sheldon, Wilkinson (n192) 104.
[258] Sheldon, Wilkinson (n192) 104.
[259] Heloise Robinson 'Prenatal testing, disability equality, and the limits of the law' [2022] The New Bioethics 1 <https://www.tandfonline.com/doi/full/10.1080/20502877.2022.2145672> accessed 11 January 2023, 4.
[260] RCOG (n213).

be more of a strain than caring for a non-disabled child.[261] The most common reason for aborting a fetus with Down's Syndrome is the financial, emotional, physical and time constraints which accompany raising the child.[262] These reasons still apply to Betty and James even though they are using AAPT.

If a fetus in utero at the same gestational age with the same diagnosed disability could be terminated, and a gestateling has the same legal status as a fetus, should it not be logical that both entities be treated consistently? If the identical entities were treated differently by the law this could further anti-abortion sentiment as if the externally gestated being is held to have a life worth living by the court, there is little difference to the fetus in utero.[263] Alghrani argues that moral, and therefore legal, status should not be 'based exclusively on biological geography', but that the correct compromise the law makes is not affording legal personality to fetus' in utero.[264] They argue that AAPT is 'neutral territory' and therefore there is a strong argument for extending what protections could be provided to the gestateling.[265] I agree that there is a case for this, as is discussed in the following chapter, however if this were to occur whilst the gestateling was held to have the same legal status as a fetus it could damage the reproductive access granted by the AA. There is also a risk of the formation of a hierarchy of gestation, whereby entities are valued based on their method of gestation.[266] This is not the intention of the medical teams and could damage their aims of creating a viable form of treatment for extremely premature neonates.[267] If a gestateling and a fetus are identical entities, with only their method of gestation marking their difference, there is a compelling argument for equal legal standing.

Eugenic arguments may have more substance in cases of AAPT. Aborting a fetus in utero means that the principle of bodily autonomy and self-determination can be relied upon, but in the case

[261] Sheldon, Wilkinson (n192) 100.
[262] Dixon (n233) 8.
[263] A fetus' 'rights' should never be prioritised above those of a pregnant person with capacity, however it is not far-fetched to consider how this could be used by those wishing to limit abortion access.
[264] Alghrani (n4) 172
[265] Alghrani (n4) 172.
[266] Nicholas Colgrove argues a similar point in which he states that it would be unfair for gestatelings to have different legal statuses based on their method of gestation. Colgrove (n56.) 725.
[267] Partridge (n16) 11.

of partial ectogestation after the physical pregnancy is ended and the gestateling is being gestated externally this no longer provides any defence. Those who choose to use AAPT are motivated to have a child, therefore if the child was diagnosed with Down's Syndrome and the genetic parent's wish to switch off AAPT, this would mean that the only reasoning would be because of the child's impairment. If abortions add to social stigmatisation of disabled people,[268] it is almost definite that switching off AAPT due to a disabled fetus would considerably add to this. This thesis, as previously stated in the introduction, is not concerned with assessing the moral questions that arise from switching off AAPT. Even if there was a compelling argument that the practice of terminating a disabled gestateling was eugenic, would this hold the law back? There are existing arguments that aborting a disabled fetus is eugenic, yet this is still permitted under the AA s.1(1)(d). Although it is the bodily autonomy of the pregnant person which is given greater consideration for a physical pregnancy, it would be incongruent of the law to not treat a fetus and a gestateling as equals if they have the same legal status.

This is one of the most significant issues raised in this thesis. How a gestateling with a diagnosed disability or health condition is perceived is entirely dependent on whether it is born alive or not. This issue is explored further in chapter three, where it considers what would happen if the gestateling *was* born alive. This issue is the crux of this thesis, highlighting the stark contrast between a neonate and a fetus. There are other contributing factors which make this decision significantly more complicated, but at a fundamental level this scenario explores the paramount issues. It must be stressed that this issue is explored thoroughly by the courts before making any decision regarding a gestateling's legal personality.

Scenario Three: The Conscientious Objection of the Medical Practitioner

Even if both Betty and James consent to turning off the AAPT, there could be further complications regarding the medical practitioner's opinion if this was a matter of 'abortion'. This is

[268] Tongue (n174) 183.

only an issue that could arise if the gestateling was found to not be born alive, and further if it was determined that abortion law is applicable.

Consider this scenario:

James and Betty both wish to turn off the artificial placenta. However, their doctor does not agree with this decision and is using his right under the s.4 of the Abortion Act 1967 to conscientiously object to performing the 'abortion' as he believes that terminating a gestateling is ethically wrong.

To seek an abortion under the AA, it is necessary to gain two medical practitioners' opinions in good faith that the abortion is lawful.[269] The AA also enshrines the right to conscientious objection to participating in any of the activities set out within the legislation.[270] Courts have interpreted a moderately narrow interpretation of what participating in the activities is.[271] It is recommended by the General Medical Council (GMC) that a medical professional conscientiously objecting to a procedure should refer the patient to another practitioner who will perform the treatment, and they should not obstruct patient's from accessing treatment or leaving them with no other place to turn.[272] The obligation to not obstruct people from accessing treatment has been recognised by the European Court of Human Rights (ECtHR) who declared that a pharmacy which refused to stock contraceptive products and were the only pharmacy in the area, were not convicted wrongfully and their article 9[273] rights had not been interfered.[274] Thus, there is an implied obligation on medical practitioners to refer a patient seeking treatment to another who will be able to perform it.

AAPT has the possibility of increasing the number of doctors who conscientiously object. In one small study of medical practitioners in Australia 41% of doctors surveyed agreed that AAPT

[269] AA (n51) s.1.
[270] AA (n51) s.4.
[271] *R v Salford HA ex p Janaway* [1989] AC 537 (HL).
[272] General Medical Council 'Personal beliefs and medical practice' (GMC, 25 March 2013) <https://www.gmc-uk.org/-/media/documents/personal-beliefs-and-medical-practice-20200217_pdf-58833376.pdf> accessed 18 January 2023.
[273] European Convention on Human Rights art 9.
[274] *Pichon and Sajous v France* App no 49853/99 (ECtHR, 2 October 2001).

would influence their views on abortion being performed at 22 weeks[275] and 88% agreed that in a hypothetical example of preterm labour and possible ectogestation at 22 weeks they would regard the infant as viable.[276] Even if the law were to recognise a gestateling as having the same rights as a fetus, ultimately it would become irrelevant if medical professionals decided to treat a gestateling differently.

It should be considered that AAPT will have such an effect on doctors because it allows the gestateling to be seen throughout the gestation process. Kendal argues that as images can evoke such a strong emotional reaction[277] AAPT could fuel the idea that all gestational locations are fetal containers, including a person.[278] Therefore, due to the increased visualisation that AAPT offers anti-abortion sentiment could become inflamed. Anti-abortion movements have often used the images of fetuses as evidence of their arguments[279] because of the development of ultrasound. An anti-abortion film *The Silent Scream*[280] released in 1984 allegedly depicts the abortion of a 12-week-old fetus via ultrasound imaging.

More recently, developments surrounding three and four dimensional ultrasounds have become common within abortion debates concerning the gestational time limit, depicting fetuses in more detail than a traditional ultrasound 'smiling'.[281] Palmer argues that these images have a great value as they 'furnish the viewer with visual knowledge', with three dimensional imagery having a strong claim to 'common sense' whilst two dimensional scans are difficult to read for non-medical audiences.[282] Images of a fetus before 24 weeks already blur the boundary between neonate and

[275] Lydia Di Stefano et al 'Ectogestation ethics: the implications of artificially extending gestation for viability, newborn resuscitation and abortion' (2019) 34 Bioethics 371, 377.
[276] Ibid.
[277] Evie Kendal 'Form, Function, Perception, and Reception: Visual Bioethics and the Artificial Womb' (2022) 95 Yale J Biol Med 371
[278] Ibid 374.
[279] Rosalind Petchesky 'Fetal Images: The power of visual culture in the politics of reproduction' 13 (1987) 263, 263.
[280] An anti-abortion film produced narrated by Dr Bernard Nathanson in partnership with the National Right to Life Committee, which has been highly criticised by the medical community as an inaccurate depiction of the procedure – propaganda to further the anti-abortion cause. Petchesky (n277) 262 – 271.
[281] Julie Palmer 'Seeing and knowing ultrasound images in the contemporary abortion debate' 10 (2009) 173, 173.
[282] Ibid 177.

fetus;[283] the impact of AAPT being able to physically extract a fetus and then allow it's gestation to be witnessed akin to watching a neonate in NIC will undoubtedly affect these debates. Not only will this continue to fuel anti-abortionists' protests but will likely incite a new branch protesting AAPT and the killing of gestatelings.

Images from AAPT will fuel debates surrounding abortion as it is imagery than can resonate with a non-medical audience. However, even doctors can be affected by imagery; Di Stefano's study highlights that medical professionals are not exempt.[284] Whilst no empirical evidence exists yet to support the idea that AAPT would increase conscientious objection amongst medical professionals in England and Wales, it still a likely effect of the introduction of this technology. It is therefore possible that consequently, even if terminating gestatelings was declared to be lawful, it could be difficult to access; or that because of a lack of support from the medical profession, the courts would not support switching off AAPT.

If a doctor were to conscientiously object to performing the abortion (turning off AAPT), , theoretically they would then have to refer Betty and James to another practitioner capable of performing the procedure, in line with GMC guidelines. Whilst there are many medical professionals able to perform an abortion, AAPT is more specialised technology and would not be standard medical knowledge. These specialists would, especially at the beginnings of this technology, be few. If one of the only specialists able to understand AAPT to treat gestatelings conscientiously objected to the abortion, it is possible that Betty and James would have no other specialists to turn to. This conflicts with GMC guidance which states that a doctor must not 'obstruct a patient from accessing a service or leave them with nowhere to turn.'[285] Therefore, if medical professionals do not support the switching off of AAPT, this would be a significant factor in determining it's legality.

[283] Petchesky (n279) 272.
[284] Di Stefano et al (n239) 377.
[285] Ibid [15].

Embryo Disputes

It is not apropos to apply law that was only written for *physical* pregnancy, and more specifically *pregnant people*, to ectogestation. Some academics have explored the possibility of applying the law in place to protect embryos during disputes over ownership during in-vitro fertilisation (IVF).[286] Whilst embryos and gestatelings are entirely different entities, it is still useful to look at the law stipulating the destruction of embryos and the disputes that have arisen in such cases as a potential model for the legislation of future reproductive technologies such as AAPT.

The courts would not declare a gestateling legally equal to an embryo. An embryo usually refers to the group of cells which gives rise to a fetus and then matures into a neonate.[287] An embryo (ex utero) is afforded different legal protection than a fetus. An embryo has no protection until it reaches the 14 day 'primitive streak' where all testing must cease, and the embryo must be destroyed.[288] The Human Fertilisation and Embryology Acts 1990 and 2008 (HFEA) respectively govern what can happen to an embryo during the IVF process. When an entity is developing, it grows *from* an embryo to a fetus, as it develops and more milestones are reached more legal protections are granted.[289] All of the legal provisions governing the rights of an embryo are applied, and were created, on the basis that the embryo has not been implanted. The intention of this analysis is not to argue that an embryo and a fetus are equals, but that the law which has been used to legislate the implantation of an embryo in IVF procedures is a useful model to analyse. Who 'owns' the genetic material which surmounts to the genetic offspring of two people has not been an issue in cases of abortion and

[286] Claire Horn 'Artificial Womb, Frozen Embryos, and Parenthood: Will Ectogenesis Redistribute Gendered Responsibility for Gestation'' (2022) 30 Fem Leg Stud 51, 61; Elizabeth Chloe Romanis 'Abortion & 'artificial wombs': would 'artificial womb' technology legally empower non-gestating genetic progenitors to participate in decisions about *how* to terminate pregnancy in England and Wales' (2020) 28 Med Law Rev 342, 373; Alghrani (n4) 168.
[287] Martin Johnson 'Escaping the tyranny of the embryo? A new approach to ART regulation based on UK and Australian experiences' (2006) 21 Hum Reprod 2756, 2758.
[288] Human Fertilisation and Embryology Act 1990 s.3(4).
[289] For example, an embryo can be destroyed where only one genetic progenitor no longer consents to its use or storage. *Evans v Amicus Healthcare Ltd* [2004] EWCA Civ 727, [2005] Fam 1.

physical pregnancy as the arguments for bodily autonomy surpass any other.[290] Ectogestation will entirely change this.

The interests of the embryo and their use in IVF is outlined in the Human Fertilisation and Embryology Act (HFEA).[291] This creates a 14-day limit on testing and research on human embryos before they must be destroyed,[292] first proposed by the Warnock Committee.[293] This implies that embryos are afforded a level of protection in law, despite it being recognised as a potential for life rather than life itself.[294] An embryo, the Warnock Committee explains, is held to have gradual moral status; the moral status of the embryo is held to increase with development until it reaches full moral status at birth.[295] The HFEA outlines how embryos can be used during IVF. It provides that embryos can only be used in IVF if there is 'effective consent'.[296] To withdraw consent to the use or storage of embryos of which you are a genetic progenitor, the establishment holding the embryos/gametes must be informed[297] and the notice must be in writing and signed.[298] Where consent is revoked, there is a 12-month period in which the embryo is continued to be stored[299] which acts as a cooling off period in which both parties can resolve differences.[300]

Whilst I am not inferring that the gestateling would ever be considered to be not-human, or property, the issues raised in embryo disputes are important. IVF is one of the few reproductive technologies which have been explored with in the legal system, and are readily used globally. If it is anticipated that AAPT could follow a similar path, it is important that some of the legal issues raised in the above cases are not raised again in the use of AAPT.

[290] A pregnant person with capacity has the right to make decisions regarding their own medical care; Mental Health Capacity Act 2005. The other genetic progenitor does not have the right to make the decision regarding the abortion as they are not gestating the entity. *Paton* (n50).
[291] HFEA (n288).
[292] HFEA (n288) s.3(4).
[293] Jacqueline Priest 'The Report of the Warnock Committee on Human Fertilisation and Embryology' (1985) 48 Mod Law Rev 73, 77.
[294] Francois Baylis, Timothy Krahn 'The trouble with embryos' (2009) 2 Social Studies 31, 35.
[295] Shaun Pattinson *Medical Law and Ethics* (6th edn, Thomas Reuters, 2020) 359.
[296] HFEA (n288) sch.3.
[297] HFEA (n288) sch.3 [4].
[298] HFEA (n288) sch.3 [1].
[299] HFEA (n288) sch.3 [4].
[300] Alghrani (n4) 80.

Scenario Four: Only One Genetic Progenitor Consents to the 'Killing' of the Gestateling

The non-gestating genetic progenitor (the 'putative parent')[301] has been declared legally impotent[302] by the courts in historic cases whereby an injunction has been attempted to be sought to prevent a pregnant person seeking a lawful abortion.[303] Where disagreements have arisen in embryo disputes this is dealt with differently as both genetic progenitors are currently not gestating and so they are consequentially treated equally. Similarly, where a gestateling in AAPT neither genetic parent is presently physically pregnant. The putative parent becomes more legally empowered in these decisions due to ectogestation.

This is a potential scenario which could arise post transferral:

> *The fetus has been removed from Betty and has been placed inside the artificial placenta. However, Betty no longer wants a child and wishes to have the technology 'switched off.' James does not agree wish this and seeks to prevent the death of the gestateling.*

The principles of bodily autonomy and self-determination are cardinal principles, granting pregnant people choice in the outcome of their pregnancies. Where there is no *physical* pregnancy and continuing to gestate the gestateling externally would have no physical effects on either of the genetic progenitors, these principles are not engaged. A gestateling in AAPT is a physically separate entity which can be treated, observed, and examined without the need for the previously gestating genetic progenitor's body to be affected.

The landmark case concerning frozen embryo ownership is *Evans.*[304] Evans wished to be able to implant frozen embryos after she had undergone an oophorectomy, despite the refusal to consent to treatment of her former partner.[305] The courts had to determine if there had been consent to the 'treatment…together'[306], and when exactly this began within the IVF process. Evans argued that as

[301] In much of the literature, the non-gestating genetic progenitor has been labelled the 'putative father'. This is not inclusive of all non-gestating genetic progenitors, which all have the same legal rights regardless of gender.
[302] Romanis (n286) 2.
[303] *Paton* (n50) 281.
[304] *Evans* (n289).
[305] Ibid.
[306] HFEA (n289) sch.3 [6].

there was consent creation of the embryos, this could not be revoked as they were being treated together from that moment onwards. Wall J rejected this argument; there was treatment together on the day the eggs were fertilised and remained this way until the breakdown of their relationship.[307] In order for there to be continuing 'treatment together' where a couple has separated, a clinic would need to be satisfied that both parties retained their effective consent.[308] Thus, there was no consent to the implantation of the frozen embryos. Despite it being reiterated that this was Evans' last chance at having genetic children, the case was dismissed, and Evans could not use the embryos. This case confirms that consent must be granted at all stages of the IVF process.

For a couple wishing to use AAPT, consent must be present at all stages of the process. However, this becomes a contentious issue as, whilst a frozen embryo only represents hypothetical potential for life, a gestateling is a more tangible demonstration of 'life' as it has already begun the process of gestation.[309] Where partial ectogestation requires a period of in utero gestation, it would be necessary that for this period the pregnant person's consent is prioritised over the other non-gestating genetic progenitor to retain reproductive autonomy, however once the physical pregnancy is ended as should the priority. Where the fetus is entirely gestated in utero, the non-gestating progenitor having no legal weight in such a decision is logical. However, a gestateling is ex utero hence it would be difficult to argue that the non-gestating genetic progenitor's consent would be legally impotent. After the gestateling is inside of the biobag it seems unlikely that a court would declare that due to one party's removal of consent, the parents are no longer being treated together as the 'treatment' has already been carried out. The gestateling is at a considerably more advanced stage of development than an embryo, therefore in a situation of differing consent,[310] it is likely the courts would hold in favour of continuing the gestation process.

In order to attempt to solve these issues in using reproductive technology, an argument is that there should be a contractual model in order to regulate consent.[311] Alghrani argues that this would

[307] *Evans* (n289) Wall J [134].
[308] *Evans* (n289) Wall J [148].
[309] Romanis (n286) 32.
[310] Romanis (n286) 32.
[311] Alghrani (n4) 95.

provide certainty to both gamete progenitors in the event that the couple separates, whilst enabling couples to store embryos under a consent agreement appropriate for their circumstances.[312] AAPT will be new territory once in use, and therefore ensuring that a contract is signed prior to the treatment would assist in any potential legal disputes over the gestateling once it is in the device. Yet, in England and Wales the law has been reluctant to follow this as it treats, or at least purports to treat, embryos as property.[313] Yet creating a contractual model, I believe, is the only way both genetic progenitors could protect their interests when entering into an agreement to become parents. Prospective parents would likely feel that their reproductive interests were better protected if a similar model to IVF were followed than if it were not, for fear of labelling embryo's 'property'. If issues arose between genetic progenitors regarding whether to continue AAPT post-fetal extraction, this dispute could be resolved much easier if there were pre-existing terms each party had already agreed to.

The HFEA, and current common law, is not so clearly defined that genetic progenitors currently feel secure in their positions prior to implantation. Implementing a form of contract between genetic progenitors would only benefit both parties, as they could both feel protected that their needs would be met based on a pre-agreed set of circumstances and outcomes. Having this level of protection would prevent such disputes as *Evans* and potential disputes as in scenario two between genetic progenitors. However, if there has been reluctance to follow this due to fears concerning aligning embryos with property, it would appear more contentious to call a gestateling property as it is at a much later stage of development

Having the time for a contractual model is an ideal, pre-supposed on an idea that there would be sufficient time to organise such an agreement. If AAPT were used in the event of an emergency or a suddenly dangerous pregnancy in which the medical professionals needed to act quickly, there would not be the time for such an arrangement. This marks the largest difference between IVF and AAPT – that AAPT could be a necessary, emergency medical treatment whilst those who undergo IVF

[312] Alghrani (n4) 95.
[313] Alghrani (n4) 96.

opt to do so. How emergency use of AAPT would be legislated is difficult to assess, for example what would happen if the genetic progenitors did not consent to the use of AAPT? Neonates currently who are born prematurely after an emergency delivery would be put in NIC as it is the treatment which is in their best interests at that time. If AAPT becomes a treatment routinely used as NIC is it is likely that it would be treat the same and if it were in the best interests of the gestateling, the entity would be put into AAPT. How this would be regulated is uncertain and if a contractual approach could work in this context is unknown and will continue to be until AAPT is approved and in use.

Any cases of AAPT use which begin with an artificially implanted embryo and an IVF procedure, 'effective consent' would be required. I argue that it would be beneficial, if AAPT were likely to be used to complete the gestation of the entity, that there should be an extra contractual provision stating that AAPT will be used. By ensuring that there was a legally binding agreement in which both genetic progenitors have agreed that their offspring will be gestated artificially until it reaches term regardless of any external circumstance (relationship breakdown or other change in circumstances which could mean they no longer want a child together). This would be necessary to ensure that all parties felt secure in choosing to use AAPT.

Chapter Summary

Applying the AA to a gestateling in AAPT highlights that it is ill-suited for such a purpose. Therefore, should the courts declare that the gestateling is not born alive, the entity would exist in limbo outside of direct legal protection. In this eventuality, an alternative and effective legal framework should be implemented by the courts to ensure that gestatelings are protected by the law. I still believe that it is unlikely that the courts would decide that a gestateling is not born alive, even if it's physiology supports such an argument.

Yet it would be incongruous of the law to not permit abortions under the same circumstances that they would be permitted in utero *if* the gestateling was legally akin to a fetus. Equality between the entities should be enforced, even if this creates uncomfortable situations. Two fetuses at identical

stages in their development should be afforded the same legal protections, so as to not create a hierarchy in which an externally gestated entity is presented as more viable.

Even if it is unlikely that such an outcome is declared by the court, it is still important that this is an eventuality that is considered. It is important to emphasise that a gestateling is more physiologically akin to a fetus than a neonate, and to emphasise that there is a strong argument for not granting the entity legal personhood. It is important to make it as clear as possible that a gestateling is not a neonate. The courts can only make a decision upon the consultation of experts in AAPT, for which both sides of the argument need to be presented convincingly.

Implementing a contractual model to regulate the use of AAPT, should the gestateling not be granted legal personhood, would ensure that both genetic progenitors are protected throughout the process. This would ensure their consent is given to a specified set of conditions, with rules on what occurs in the event of a relationship breakdown or if one progenitor no longer wishes to move forward with the procedure. The most important feature of any legislation governing AAPT will be ensuring that all parties involved in the treatment feel protected in their decision to use this form of treatment. Signalling a point where 'treatment together' begins, or a similar point at which it is no longer possible for either party to dispute proceeding with the treatment, will be significant in achieving this.

The AA is not suitable in its current state for application to an entity undergoing any form of ectogestation. I argue that abortion is only something which can happen to a physically pregnant person rather than a procedure for the fetus it is terminating. This thesis does not offer an alternative legal framework which could be applied to the gestateling without legal personhood as there is not enough discussion regarding the switching off of AAPT to make a logical suggestion. To offer an alternative would be an entirely separate thesis.

CHAPTER THREE: NON-TREATMENT DECISIONS ON BEHALF OF A GESTATELING WITH LEGAL PERSONHOOD

The legal status of the gestateling is the single most important question to be answered by the court, as this will determine how ectogestation is legislated. If the gestateling is determined to have been born alive and granted legal personhood, it will have significantly more protections than it would as a fetus. A gestateling with legal personhood would be a neonate. Before beginning any further analysis, it must be reiterated that because of these protections it is very unlikely that AAPT would ever be switched off. It is highly likely that if a pregnant person has already undergone at least 20 weeks of pregnancy, they are likely to want the entity to survive ex utero.

Unlike in the previous chapter where more uncertainty is present, if the gestateling with legal personhood did not have any diagnosed life-limiting conditions AAPT would not be switched off. Gaining legal personhood means that you can be a victim of crimes, such as murder, and therefore the threshold for switching off AAPT would be significantly higher than if the gestateling were not born alive. This chapter follows this idea, examining what these additional rights mean for the gestateling and it's genetic progenitors.

This chapter will consider the following scenario.

James and Betty's gestateling is 25 weeks old and is inside of AAPT. Due to complications during the extraction procedure, the gestateling was without oxygen for longer than intended and has suffered hypoxia which caused brain damage.

It is not implausible that during the extraction process, or during the course of AAPT, something could go wrong. In EVE prototype, only one of the lamb fetuses endured the entire control period in AAPT and remained stable, with 4 others being euthanised before the control period ended or exhibited continuous deterioration in wellbeing throughout.[314] Whilst this was only a small sample

[314] EVE (n16) 9.

size of a prototype, it still highlights the complexities of this technology. It is impossible to say that AAPT will be foolproof, and as gestation is such a complex process normally regulated by the gestating body, it is not unreasonable to suggest that the regulation of this process externally will be a complex process requiring high levels of care and attention from healthcare professionals.

A gestateling going through partial ectogestation being diagnosed with a life limiting condition or disability would be a very uncommon scenario. As has been discussed in the prior chapter, testing for pregnant people is widely available and at an early stage of development. It is likely that AAPT would be a treatment offered on the condition that the fetus and pregnant person undergo the necessary genetic testing to establish if it has any conditions or disabilities. [315] PND would ensure that the gestateling has the best chances of survival, to prevent the compromising of the effectiveness of AAPT and that fetal extraction can be completed with as little complication as possible. Therefore, the chance of a gestateling being placed into AAPT with a life-limiting condition is very unlikely. It is still important that this area is discussed for those rare occurrences in which this could become an issue, or if an error arose during the process of extraction or over the course of AAPT.

As this chapter is concerned with the born alive gestateling, I look to non-treatment decisions made by the courts, healthcare professionals and families to determine if it would ever be possible to switch of AAPT. I will first explore the law surrounding non-treatment decisions for children, as it is important to understand the framework of the current law. The most important consideration in these cases is the welfare of the child as is protected in s.1 of the Childrens Act 1989, synonymous with their best interests. There are a range of components which comprise best interests, all of which are explored in relation to the gestateling diagnosed with brain injury, as introduced at the start of this chapter. The end of this chapter concludes that it is difficult to argue that ending AAPT would ever be legally determined to be in the best interests of a gestateling.

Acts and Omissions

[315] Kendal (n3).

Under common law in England and Wales that murder is a crime defined as the unlawful killing of a reasonable person in being under the King or Queen's peace with malice aforethought express or implied.[316] To be a victim of murder, the most severe form of homicide, the person must have been born alive and have legal personhood at the time of the crime.[317] The courts have held that there is a distinction between actively causing a patient's death and omitting to do something which will inevitably cause that person's death. This act/omission distinction has been relied upon[318] in various case law including *Bland.[319]* This distinction is reinforced applied in the doctrine of double effect; a principle which makes it lawful for a healthcare professional to administer painkilling or sedative drugs which may consequently quicken death.[320] A doctor who intends a positive effect to the administering of treatment, for example relieving pain, and does not intend any negative consequences (including death) will not be guilty of murder. Whilst administering painkillers or sedatives is an act, because of other tangible benefits that the treatment can have, the intention is not to end the life of the patient. Thus, administration of a non-excessive dose of painkillers, reasonable in the circumstances which the patient is in, is not a positive act causing the death of a person.

A doctor can remove life-sustaining treatment from a patient, even if doing so will cause their death, and not be prosecuted. The law regards the withdrawal of life-sustaining treatment as an omission instead of an action.[321] This was discussed at length in *Bland,[322]* in which the removal clinically assisted nutrition and hydration (CANH) was debated. It was argued that as the withdrawal of CANH is an act, the removal of the tubes providing nutrition and hydration, which inevitably causes death, it cannot ever be lawful to do so.[323] It was held that CANH amounted to medical treatment (not basic care) and its removal was an omission rather than an act.[324] Whilst it was acknowledged that it is difficult to describe what the doctor physically does when withdrawing any

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[316] Edward Coke *First Part of the Institutes on the Laws of England* (1st edn, W Rawlings, 1680).
[317] *Attorney General's Reference* (n138).
[318] Tom Stacy 'Acts, Omissions, and the Necessity of Killing Innocents' (2002) 29 Am J Crim L 481, 488.
[319] *Airedale NHS Trust v Bland* [1993] AC 789 (HL) 857.
[320] Jackson (n174) 961.
[321] Jackson (n174) 966.
[322] *Bland* (n319).
[323] *Bland* (n319) 835.
[324] *Bland* (n319) 843.

life-sustaining treatment as an omission, it was analogised with never beginning the treatment in the first place. Instead 'the doctor is allowing the patient to die in the sense that he is desisting from taking a step which might, in certain circumstances, prevent his patient from dying as a result of his pre-existing condition.'[325] Lord Browne-Wilkinson stated that as the tube itself, where no food is being supplied, does nothing therefore the removal of said tube does not cause the death as it did not actively sustain life.[326] The intention behind the act is more significant than the actual act itself. Removing CANH because it ends unnecessary invasive treatment which offers little, or even no, chance of improving a patient's condition is more important than the end of the patient's life.[327] The distinction between acts and omissions is the core of any non-treatment decision as it is what permits the removal of life sustaining treatment without any crime taking place.

AAPT needs to be a form of medical treatment for the act/omission principle to ever apply. This is difficult firstly because the contexts in which AAPT and other life-sustaining treatment is used is vastly different. Life-sustaining treatment is used at the end of a person's life, preventing death from occurring. AAPT would be a treatment used in order to fully begin life outside of gestation, and in the case of a healthy gestateling it would be life sustaining, but only until the gestateling was developed enough to take over the performance of its life functions and was able to do so outside of AAPT. For a gestateling diagnosed with a life-limiting condition, for example, the brain damage caused by hypoxia used in the scenario, AAPT could have an entirely different purpose; if it became apparent that the gestateling could not be able to sustain itself outside of AAPT and would never be able to breathe independently for example, AAPT would be alike ventilator keeping the entity alive with no prospect of life outside of the treatment. Therefore, AAPT can be included in the same category of life-sustaining treatment. This is something that is not necessarily dependent on the stage of development that the gestateling is at. If the gestateling was at 29 weeks, or 20 weeks, AAPT carries out the same form of treatment. As has been explored earlier in this thesis, regardless of the gestateling's age and, for example, lung maturation AAPT would treat the entity the same. Therefore, there will always be a

[325] *Bland* (n319) 840.
[326] *Bland* (n319) Lord Browne-Wilkinson 882.
[327] *Bland* (n319) 814.

distinct difference between a fetus and a gestateling because of the treatment methods used to support them. If AAPT were life-sustaining treatment, it follows that the removal of AAPT from the gestateling would have to be understood as an omission rather than an act and would therefore be permissible (although if the circumstances could ever arise will be discussed throughout this chapter). Removal of AAPT from a born alive gestateling is a non-treatment decision.

Clinical Indication of Treatment

For there to be a discussion about a non-treatment decision regarding AAPT, it must be first determined if it the treatment is clinically indicated. It will be the attending healthcare professional's decision as to whether the AAPT would be clinically indicated, and this would be done on a case-by-case basis. Generally, this would involve an assessment of best interests (explained more fully later in this chapter) to determine if the medical treatment would be appropriate.

AAPT is a treatment that is being designed for extremely premature neonates in order to continue their gestation period outside of the womb, allowing them to continue their growth in a manner only gestation can permit, until they develop to term.[328] There is no current suitable treatment option for neonates born before 24 weeks, and generally they will be given palliative care when born.[329] As AAPT continues the process of gestation, it is favourable to neonatal intensive care (NIC), which involves ventilation and therefore requires more mature lungs, as it will be able to support the gestateling from an earlier point in development without the damage of invasive ventilation. There will be limitations as to when AAPT is clinically appropriate treatment. It has already been stated by the research groups that the premature birth will need to be able to be anticipated in order for a planned EXIT procedure to take place,[330] involving a caesarean section before a quick transition into AAPT to minimise the time the neonate is without oxygen. If a premature birth were to happen spontaneously and there was no chance to arrange such a procedure, AAPT would not be an appropriate treatment option. Similarly, if it were determined during PND that the fetus had a life-

[328] Partridge (n16) 11.
[329] Manjiri Dighe et al 'Is there a Role of Palliative Care in the Neonatal Intensive Care Unit in India?' (2011) 17 Indian J Palliat Care 104, 105.
[330] Partridge (n16) 10.

limiting condition, such as anencephaly, it may be determined by healthcare professionals that AAPT would not be an appropriate treatment option.

As long as the premature birth could be anticipated, and the fetus had not been diagnosed with any serious conditions, it is likely that AAPT would be found to be clinically indicated where a pregnancy has to end prematurely. This is, however, hypothetical as human tests have not begun, although are growing closer each day,[331] so it is not yet possible to determine the exact effectiveness of the treatment. As AAPT could be a clinically indicated treatment, it would be used by the healthcare professionals to treat a gestateling and therefore the non-treatment question can arise.

Consent to treatment

For medical treatment to take place of a child, there must be consent. Neonates and other extremely young children clearly do not have capacity to make their own medical decisions and therefore depend on others to make such a decision on their behalf.[332] The Children Act 1989 sets out the role of the parents, as well as who is granted parental responsibility. The person who gave birth to the child will have automatic parental responsibility, however, if the two genetic parents are not married the other parent will not automatically gain parental responsibility,[333] but can acquire it by being registered as the child's parent, via a parental responsibility agreement or if the court declares they should have parental responsibility.[334] If both of the genetic parents are married, they will both have parental responsibility for the child.[335]

James and Betty can be assumed to have parental responsibility for their gestateling as they are married. Consequently, James and Betty would be able to make medical decisions on behalf of the gestateling. They would have the ability to consent to the treatment of AAPT, and to consent to any non-treatment decisions proposed by healthcare professionals.

[331] FDA (n3)
[332] Margaret Brazier 'An intractable dispute: when parents and professionals disagree' (2005) 13 Med Law Rev, 412, 415.
[333] Children Act 1989 s.2(1)(2).
[334] Children Act (n333) s.4(1) and s.4ZA(1).
[335] Children Act (n333) s.2(1).

Common law has stated that if it becomes apparent that the decisions being made by the parents are not in the child's best interests and could have severe consequences, the courts can be asked to intervene.[336] There are two ways in which the court can gain the jurisdiction to consent on behalf of the child; either by making the child a ward of the court or via a s.8 order.[337] By making a child the court assumes responsibility for the child's welfare as protected by s.1 Children Act 1989 and the Official Solicitor can be appointed to act as the child's guardian.[338] Under s.8 Children Act 1989 the court can declare either Prohibited Steps order or a Specific Issue order (both of which are relevant to the provision of medical treatment). A Prohibited Steps order means that the court can prevent a person with parental responsibility for the child from taking a specific action, as detailed in the order, without the consent of the court.[339] A Specific Issue order permits the court to give a direct answer to a specific question which has, or may, arise.[340] In relation to this thesis, such orders could permit the child to receive medical treatment where parent's objected, for example as occurred in *Re B*[341] where a child diagnosed with Down's Syndrome was made a ward of the court, allowing the court to consent to a life-saving surgery that the parents would not consent to.

AAPT could not be withdrawn from a gestateling without consent. Equally, AAPT could also not be administered without consent. Consenting to the non-treatment decision regarding the above scenario firstly would require healthcare professionals to make an assessment that continued treatment was not in the gestateling's best interests. Should both James and Betty disagree with the use of AAPT, it would be unlikely that anything could proceed without the court's intervention. How a healthcare professional could make an assessment concerning what treatment options are appropriate will be considered before discussing consent to withdrawal and the role that healthcare professionals take in these decisions.

Best Interests

[336] K Leask 'The role of the courts in clinical decision making' (2005) 90 Arch Dis Child 1256, 1256.
[337] Children Act (n333) s.8.
[338] Leask (n336) 1256.
[339] Children Act (n333) s.8(1).
[340] Children Act (n333) s.8(1).
[341] *Re B (A Minor) (Wardship: Medical Treatment)* [1981] WLR 1421 (CA) Civ.

Under s.1 Children Act 1989, it states that where a court makes a decision on behalf of a child the child's welfare must be the 'paramount consideration'. The court must regard 'the ascertainable wishes and feelings of the child…in light of his age and understanding',[342] 'physical, emotional and educational needs',[343] and 'any harm which he has suffered or is at risk of suffering'.[344] Where a neonate is receiving with life-sustaining treatment, as is stated above those who have parental responsibility will be the first people able to consent to a non-treatment decision if healthcare professionals decide that it is not in the patient's best interests to continue. Parents often make decisions alongside the healthcare professionals and there is no need for any further intervention to take place. Where conflicts do arise between parents and healthcare professionals, the courts will intervene. These cases, although in recent years have gained media traction, are rare and generally decisions are made within hospitals between staff and the families of the patient.[345] The court will use powers, as described in s.8 Children Act 1989, to make a decision on behalf of the child.

'Best interests' is a broad phrase encompassing various elements which constitute the overall quality of the patient's life. Assessing an incapacitated patient's wishes is difficult, and it is even more so challenging to evaluate a neonates hypothetical wishes if they have never been able to express them or had the capability to understand. However, such assumptions are unavoidable, even explicitly permitted by legislation,[346] as somebody must step in and make the decision on behalf of the patient. Because best interests have garnered such discussion and interpretation, there are multiple features including the beliefs of the patient and their family, the futility of the life-sustaining treatment and the patient's own dignity balanced against the court's ever-present presumption in favour of life while placing the child's welfare as paramount above all else. It is a complex balancing act which is individualised to each and every patient.

[342] Children Act (n333) s.1(3)(a).
[343] Children Act (n333) s.1(3)(b).
[344] Children Act (n333) s.1(3) (e).
[345] This includes cases such as *Re Gard (A Child) (Child on Life Support: Withdrawal of Treatment)* [2017] EWCA Civ 410, [2018] 4 WLR 5 (MacFarlane LJ) 10 and *Dance v Barts Health NHS Trust* [2022] EWCA Civ 1055, [2022] 7 WLUK 321.
[346] Children Act (n333) s.1(3).

Determining what is in the entity's best interests is a difficult task. If they have never been able to express any past wishes or beliefs, have never had the capability to understand their situation and have never known any other existence than that which they have been born into, deciding what would be in their best interests becomes a difficult task. The Royal College of Protection and Child Health issued guidance on the withdrawal and withholding of life-sustaining treatment on children and neonates. They described 'best interests' as not being confined to medical or clinical interests, but including social, emotional and welfare factors, highlighting that the court is not tied to the clinical assessment of what is in the patient's best interests.[347] Whilst this is not legally binding, it aligns with the idea that what is medically beneficial may not actually be of overall benefit to an individual, and that a holistic approach is more beneficial in assessing best interests.

The court was challenged with determining a child's best interests in the Charlie Gard litigation. This was a high-profile case which concerned Charlie, who had a rare inherited mitochondrial disease and was entirely dependent on a ventilator. The court had to decide if it was in his best interests to travel to the US and receive experimental nucleoside therapy treatment.[348] In making that decision, the court acknowledged that those who have parental responsibility for the child have the power to consent for their child to undergo treatment, but 'overriding control is vested in the court exercising its independent and objective judgement in the child's best interests'.[349] The court looked to past cases as guidance for determining a child's best interests. Importantly, they reaffirmed that a judge should not make the decision as if they themselves – or one of their children - were in that situation.[350] It was also emphasised that weight must be given to prolongation of life because 'individual human instinct and desire to survive is strong and must be presumed to be strong in the patient', but that this is not absolute and can be outweighed depending on the quality of life and

[347] Vic Larcher et al on behalf of the Royal College of Paediatrics and Child Health 'Making decision to limit treatment in life-limiting and life-threatening conditions in children: a framework for practice' (2015) 100 ADC 1, 12.
[348] *Great Ormond Street Hospital for Children NHS Foundation Trust v Yates* [2017] EWHC 972 (Fam), [2017] 4 WLUK 460.
[349] Ibid [36].
[350] *An NHS Trust v MB* [2006] EWHC 507 (Fam), [2006] 3 WLUK 379 [16].

pleasures are small and burdens of living, pain, and suffering were greater.[351] It is these concepts which are used throughout all common law regarding non-treatment decisions on children.

The best interest test has been interpreted liberally, with no hard restrictions on the concepts definition. Consequently, it is easier to apply it to AAPT despite it being a new, unregulated technology. Whilst in the previous chapter the law's rigidness meant that it was difficult to construe legislation to apply to ectogestation, the best interest test does not attempt to confine in this manner. A gestateling's best interests would firstly be assessed by the healthcare professionals, who would make a decision using their medical expertise and knowledge to assess the expected quality of life compared to the burdens of treatment and the other factors mentioned above. As the healthcare professionals do not have the power to consent to a non-treatment decision on behalf of their own patient, this decision would need to be taken by the parents, James and Betty. If James and Betty agreed that it would be in their gestateling's best interests for AAPT to be switched off, this would be a decision made within the hospital with no court involvement. However, if James and Betty disagreed with the healthcare professionals, the NHS trust could make an application to the court to ask them to determine if continued treatment would be in their patient's best interests and if palliative care should be administered. The NHS trust could then ask the court for a s.8 order under the Children Act 1989 or for the child to be made a ward of the court.

Non-treatment decisions often involve the removal of mechanical ventilation. Ventilation removal is comparable to the hypothetical switching off of AAPT (in both cases oxygen is withdrawn), and it is therefore useful to look to cases which have dealt with ventilation removal. Whilst AAPT will not use a ventilator, it will perform breathing for the gestateling via liquid ventilation.[352] Removal of a ventilator removes the breathing support that the patient is receiving, just like how switching off AAPT could mean removal of oxygen from the gestateling. This is hypothetical, as in pilot studies on lambs, the subjects were weaned from the biobags to current

[351] Ibid.
[352] Partridge (n16) 2.

methods of artificial ventilation before being euthanised for post-mortem analysis.[353] As in mechanical ventilation withdrawal,[354] the gestateling would be likely given sedatives to control the symptoms and relieve pain. The preferred method of ventilation removal is immediate cessation of ventilation followed by sedatives instead of terminal weaning (gradually reducing oxygen and ventilation) especially where the patient is conscious.[355]

Part of the assessment of an individual's best interests is determining the level of pain the patient is in. There is no certainty in these evaluations, as it not possible to determine often if an unconscious patient, especially a neonate, has the awareness to feel pain. Often, pain is presumed to be possibly felt, especially where there is no evidence contrary, and the known pains associated with the treatment the patient is receiving will be assessed. For example, in the Charlie Gard litigation, it was determined that no-one could be certain if he felt pain,[356] but ventilator support and the continued pain of intensive care could involve Charlie suffering.[357]

The potential pain of the patient was also assessed in the case involving Isaiah Haastrup.[358] Isaiah was diagnosed with an acute brain injury following severe hypoxia during labour and birth[359] and was ventilator dependent.[360] The NHS trust applied for a declaration that the continuing life-sustaining treatment was no longer in Isaiah's best interests. One of the key factors in determining Isaiah's best interests was that the conditions he was known to suffer from were very painful.[361] This, alongside the pain of mechanical ventilation via a tracheostomy and the involuntary contraction of muscles due to the brain injury, were determined to only add to the pain suffered. The court held that continuing treatment was not in his best interests.[362]

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[353] Partridge (n16) 13.
[354] Alexandra Clinch, Brian Le 'Withdrawal of mechanical ventilation in the home: A case report and review of the literature' 25 Palliative Med 378, 379.
[355] Ibid.
[356] *Gard* (n345) [113]
[357] *Gard* (n345) [114]
[358] *Haastrup v King's College Hospital NHS Foundation Trust* [2023] 3 WLR 575.
[359] Ibid [19].
[360] Haastrup (n358) [32].
[361] Haastrup (n358) [37].
[362] Haastrup (n358) [97].

Mechanical ventilation can either be non-invasive via a close-fitting mask or by a tube in the neck (tracheostomy).[363] The impact of mechanical ventilation on the lungs causes ventilator-induced lung injuries (VILI).[364] VILI causes increased morbidity and mortality for patients with acute respiratory distress syndrome and is commonly caused by mechanical ventilation.[365] It is also possible for the patient to be diagnosed with ventilator-associated pneumonia, a serious complication often in neonates on mechanical ventilation.[366] Mechanical ventilation does perform essential functions; its intention is to correct compromised lung function, restore adequate gas exchange and reduce the work of breathing.[367] However, as demonstrated above, mechanical ventilation (especially when invasive) can cause pain and suffering for the patient.

Mechanical ventilation can also simultaneously be beneficial for a patient. In *An NHS Trust v MB*[368] continuing mechanical ventilation was found to be in the best interests of the patient,[369] a child diagnosed with spinal muscular atrophy who still had a level of consciousness and could experience pleasure from his life.[370] Despite ventilation, and the procedures to maintain the ventilation including suctioning and replacement of the tube, the pain of those procedures was determined to not outweigh the benefits of the child's life.[371] The pain suffered is only an element to determining a child's best interests, and just because pain is being suffered does not mean that a life will not be worth continuing.

A gestateling in AAPT will only be 'connected' to the machine via its umbilical cord[372] in the same way it would be connected to the placenta in utero. This is significantly less invasive that

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[363] Eleanor Wilson et al 'The Use of Mechanical Ventilation Support at the End of Life in Motor Neurone Disease/Amyotrphic Lateral Sclerosis: A Scoping Review' (2022) 12 Brain Sci 1162, 1162.
[364] Arthur Slutsky, V Ranieri 'Ventilator-Induced Lung Injury' (2014) 369 NEJM 2126, 2128.
[365] Michael Matthay et al 'Acute respiratory distress syndrome' (2019) 5 PRIMER <https://www.nature.com/articles/s41572-019-0069-0> accessed 16 March 2023, 1.
[366] Fumiko Kawanishi et al 'Risk factors for ventilator-associated pneumonia in neonatal intensive care unit patients' (2014) 20 J Infect Chemother 627, 627.
[367] Anton van Kaam et al 'Modes and strategies for providing conventional mechanical ventilation in neonates' (2021) 90 Pediatric Research 957, 957.
[368] *MB* (n350).
[369] *MB* (n350) [89]
[370] *MB* (n350) [102]
[371] *MB* (n350) [102].
[372] Partridge (n16) 4.

methods of mechanical ventilation. It is also unclear if AAPT could have any side effects on the gestateling which could amount to a significant harm. It can be assumed that the ideal model will have no innately negative impacts on a gestateling in terms of pain and suffering (although as with any medical treatment it would be subject to human error which is an entirely separate issue) continuing the process of gestation as this be the most effective treatment method for extremely premature neonates. If pain and discomfort could be felt by a gestateling, this has not been referenced within the scientific reports regarding prototypes. This will need to be assessed upon human testing of the treatment, although it appears that there would be less burdens associated with AAPT than ventilation because AAPT is no more invasive than in utero gestation.

Presumption in Favour of Life

An ever-present principle which is balanced while determining any person's best interests is the presumption in favour of life. However, this is not an absolute principle and other factors can be determined to be more significant in deciding if continuing medical treatment is in the best interests of the In a case concerning an 8-month-old with a serious heart condition after surgical complications, it was held that the further risk of anaesthesia and sedation for ventilation to carry out CPR would not only be not in her best interests, but 'inimical…and unconscionable'.[373] Continuing treatment of an 11-year-old whose surgeons had 'left no stone unturned'[374] and who had to be given the maximum dosage of ketamine to make any procedure, even turning, tolerable, was held to be no longer in his best interests.[375] Despite the presumption in favour of life being at the forefront of the judge's minds when considering these non-treatment decisions, it was held that continuing treatment was not in any of those patient's best interests. The medical condition of the patient is paramount when making these decisions; the patient in question must essentially have no prospect of recovery and be suffering in some capacity, whether that be through pain or burdensome treatment.

[373] *Great Ormond Street Hospital v NO & KK & MK* [2017] EWHC 241 (Fam), [2017] 2 WLUK 361, 147.
[374] *An NHS Trust v W* [2015] EWHC 2778 (Fam), [2015] 10 WLUK 31, [16].
[375] Ibid.

Throughout court judgements the human instinct for survival is always be presumed to be strong for the patient[376] and is integral to any non-treatment decision. The presumption in favour of life is adopted into law via the Homicide Act 1957 and article 2 of the Human Rights Act 1998, both prima facie evidence of English law's advocacy.[377] The principle protects people from being intentionally killed,[378] prohibiting euthanasia. Coggon set out basic principles which are the most 'potent' which includes that although intentional killing is always wrong, death can be foreseen and hastened as long as it is not intended and medical futility also includes a disproportionate level of treatment.[379] The presumption is not an irrebuttable[380] as is demonstrated in the many cases in which the court conclude that it is not in the child's best interests to continue life-sustaining treatment. This principle is implicit in the distinction between acts and omissions. Whilst the law acknowledges that there are circumstances in which the continuation of life is not in the best interests of the patient, it does not ever endorse an individual to act intentionally to end a life.

A case where the court upheld sanctity of life is *Re B*. [381] Templeman LJ held that it was in the best interests of the child for the operation to rectify the cleft palate to take place, stating that the court must assess whether the life of this child is 'demonstrably so awful that the child must be condemned to die'.[382] A child with Down's Syndrome is not born severely ill therefore *continuing* their life is in their best interests.. This case is unique as there are few in which the parents and medical professionals disagree because the parents wish to stop treatment. The court made the child a ward of the court in order to permit them to make decisions regarding what medical treatment is in their best interests. Because there is a presumption in favour of life, it is entirely possible for treatment to be in a

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[376] *Manchester University NHS Foundation Trust v Fixsler and others* [2021] EWHC 1426, [2021] 4 WLR 95, [97].
[377] Abdul-Rasheed Rabiu, Kapil Sugand 'Has the sanctity of life law gone too far?:analysis of the sanctity of life doctrine and English case law shows that the sanctity of life law has not 'gone too far''(2014) 9 Phil, Ethics and Hum 1, 3.
[378] John Keown 'The Legal Revolution: From Sanctity of Life to Quality of Life and Autonomy' (1998) 14 J Contemp Health L & Pol'y 253, 257.
[379] David Gurnham 'The Ethics of Side Effects: Sanctity of Life and Doctrine of Double Effect as Political Rhetoric' (2007) 2 Asian J WTO & Int'l Health L & Pol'y 141, 144.
[380] *Gard* (n343) [38]
[381] *Re B* (n341).
[382] Ibid (Templeman LJ) 1424.

child’s best interests even if there is opposition either from the parents, as in *Re B*, or from healthcare professionals.

Switching off AAPT would be an incredibly rare situation, requiring severe circumstances to arise for the question to even be considered. The gestateling in this scenario will find itself protected even under article 2 European Convention on Human Rights (ECHR), the right to life. The article states that ‘everyone’s right to life shall be protected by law’ and that no-one’s life should be intentionally deprived, except in the conviction of crimes.[383] The European Court on Human Rights (ECtHR) have declared that a fetus is not regarded as a person and the unborn do not have a right to ‘life’, this is instead implicitly limited by the pregnant person’s rights.[384] *Vo v France*[385] was a unique case in which the ECtHR had to rule on the protections for fetuses under French criminal law, after a doctor’s error had resulted in a non-viable pregnancy which had to be aborted. The ECtHR stated that it would be ‘paradoxical’ for the ‘margin of appreciation’, which is afforded to all member states for certain unqualified rights, to permit the exclusion of the fetus from the article’s protection, if this was not also the case where a pregnancy is ended due to negligence.[386] A fetus that has been afforded legal personhood would have access not only to the full protections of the law in England and Wales, but also the protection of international and European human rights law. Therefore, if a gestateling with legal personhood had AAPT switched off, this could constitute a violation of it’s art.2 rights; especially if it did not have any diagnosed life-limiting conditions or disabilities.

Values of the Patient’s Family

The religious beliefs and values of those who surround the patient are also considered as part of a non-treatment decision. For example, if the parents hold religious beliefs this will be acknowledged by the court. It does not appear that it often goes much further than an acknowledgement, as common law frames these beliefs as not an integral part of the decision.

[383] European Convention on Human Rights <https://www.echr.coe.int/documents/d/echr/convention_ENG> accessed 18 November 2023.
[384] *Vo v France* (2005) 40 EHRR 12, [80].
[385] Ibid.
[386] *Vo* (n384) [57].

Archie Battersbee[387] was as 12--year--old boy who sustained a catastrophic hypoxic brain injury. While this case concerns a much older child, it still offers a significant insight into how the court makes non-treatment decisions as it has been one of the most widely publicised cases ever. The NHS trust sought a declaration that it was lawful to undertake brain stem testing and to withdraw mechanical ventilation. As Archie was older, his parents reported that he had spoken about life support, stating that he had stated that he would not want to leave his mother,[388] and had requested to be christened, although this did not occur until he was in hospital.[389] The judge explicitly stated that his concern is Archie's best interests, 'but what he might have wanted is integral to [the] evaluation'.[390] Despite Archie's explicit wishes, continuing ventilation was found to not be in his best interests, adding that Archie would could not have foreseen in any way the circumstances in which he faced.[391]

The parent's beliefs were also an important part of the case concerning Alta Fixsler,[392] receiving life-sustaining treatment which the NHS trust applied for a declaration that it was not in the best interests of the child for life sustaining medical treatment to be continued and palliative care implemented.[393] Alta's parents were practising Chassidic Jews and Israeli citizens and had taken rabbinical advice which was presented to the court. This advice stated that it would be contrary to their faith to adopt palliative care.[394] The ruling judge placed considerable weight on the fact that there is a strong presumption in favour of life[395] and stated that while the rabbinical evidence was considered alongside the parent's religious views, continuing life-sustaining treatment was not in Alta's best interests.[396] It was explicitly stated that 'it is not religious law that governs the decision…but the secular law of this jurisdiction'.[397] It was also acknowledged that while a child is

[387] *Battersbee* (n345).
[388] Ibid [31].
[389] Battersbee (n345) [30].
[390] Battersbee (n345) [32].
[391] Battersbee (n345) [43].
[392] *Fixsler* (n376).
[393] Ibid 2.
[394] Fixsler (n376) [13].
[395] Fixsler (n376) [100].
[396] Fixsler (n376) [108].
[397] Fixsler (n376) [105].

often influenced by their parent's views and beliefs, they are still an individual.[398] While religious beliefs are acknowledged, they are given little weight if the condition of the patient is held to be so severe (it was said that the main question was how to balance the presumption in favour of life with the need to alleviate Alta's suffering)[399] that there is no foreseeable way that continued treatment could be in their best interests.

In the case of *MB*[400] the child's father was a practising Muslim and believed that it is not right for people to choose when another should live or die.[401] While in the above examples the judges stated that they did take their parent's views into consideration, here it was stated that the father' religious beliefs were 'irrelevant' to the non-treatment decision and that they would not be taken into account at all.[402] This is a different approach, although in the above mentioned cases it is clear that the religious views of the parents did not matter more than the pain and suffering of the child, and therefore were essentially unimportant in assessing the final decision.

If James or Betty held religious views that life-sustaining treatment should never be removed, it would be unlikely to have an impact on the non-treatment decision for their gestateling independently. While the values and beliefs of the parents are referred to in case law, it is not enough if the condition of the child is held to be severe or the pain suffered is extreme. This may also be the case if it is not certain if the child is capable of feeling pain. If it were held that a gestateling in AAPT was not able to feel pain, this would not mean that a non-treatment decision could ever be made. It would be impossible for any person to know exactly what the gestateling was capable of feeling and what affect AAPT would be having. It is impossible for any person to experience what the child is feeling and experiencing, and therefore it is necessary that a more objective approach is taken which considers the condition of the patient, not solely the promotion of life. For a gestateling in AAPT, this same approach would be taken.

[398] Fixsler (n376) [96].
[399] Fixsler (n376) [105].
[400] *MB* (n341)
[401] *MB* (n341) [49].
[402] *MB* (n341) [50].

Futility

A significant assessment must be undertaken by the court when assessing a patient's best interests as to whether the medical treatment that they are receiving if 'futile.' Broadly, this concept has been defined as whether the patient will receive any benefit from the treatment.[403] If the treatment they are receiving is held to be futile, this is another factor that will be considered in the non-treatment decision.

Futility was first considered in *Bland*.[404] It was held that treatment which 'has no therapeutic purpose of any kind…because the patient is unconscious and there is no prospect of improvement' is futile and thus can be withheld or withdrawn.[405] Butler-Sloss LJ P defined futility as to whether or not it can produce 'a benefit' for the patient which includes an improvement to their condition, their condition not deteriorating further or prolongation of their life.[406] These conditions only give a broad definition of what constitutes futility, and does not account for patients with conditions so severe that remaining in the same state or prolonging life is not in their best interests. Following *Bland*, the two most significant aspects in determining futility are whether the treatment available is ineffective and if the person derives any benefit from it (if it can enable them to enjoy a quality of life that they themselves would regard as worthwhile).[407]

The concept of futility was significant in the Charlie Gard litigation. Charlie's parents argued that the court should only intervene in their decision to continue treatment if the child was likely to 'suffer significant harm'.[408] Lady Hale dismissed this claim stating that where there is a significant dispute in a child's best interests, the child 'must have an independent voice' and decisions about their treatment cannot be left to the parents alone.[409] Charlie's parents wanted Charlie to be able to travel to America to receive nucleoside therapy, a treatment designed for mitochondrial illnesses – however

[403] Cressida Auckland 'A Façade of Futility' (2021) 137 LQR 451, 451.
[404] *Bland* (n319).
[405] *Bland* (n319) 869.
[406] *Simms v Simms and Another* [2002 EWHC 2734 (Fam) [2003] Fam 83 (Butler-Sloss P) 97.
[407] Auckland (n403).
[408] Supreme Court 'In the matter of Charlie Gard' (2017) <https://www.supremecourt.uk/news/permission-to-appeal-hearing-in-the-matter-of-charlie-gard.html> accessed 9 March 2023.
[409] Ibid.

importantly had never been tested even in animals that had Charlie's exact condition.[410] The judgement of the Court of Appeal was reaffirmed by the Supreme Court; the benefits of nucleoside therapy were 'as close to zero as makes no difference' and therefore no positive benefits could be attributed and would only prolong his suffering which is no longer in their best interests.[411] Simply prolonging an existence is not enough to consider the treatment a benefit. Auckland claims that these decisions are problematic as it enables the court to make a judgement considering if an individual's quality of life is acceptable, which they from an outside perspective could never actually ascertain.[412] It is argued that the concept of futility deployed in best interests decisions is ineffectual in young children and neonates due to their lack of ability to comprehend and communicate their medical circumstances, and the extent to which this is applied by the courts highlights the decision-maker's opinion on what is an acceptable quality of life (being either the medical professionals or the court), or the parents beliefs.[413] It must also be acknowledged that a degree of personal opinion seeping into judgements is inevitable and little can be done to prevent this issue – someone's views must be substituted in place of the patient's in order for a decision to be made.

Following the ideas formed in *Bland,* for AAPT to be 'futile' (which would be part of the case against the continuation of the treatment to the gestateling) could there ever be a situation where there could be no positive benefits associated with AAPT. In the case of Charlie Gard, the experimental nucleoside treatment was stated in court as having not even reached experimental stages on mice with the type of condition from which Charlie suffered.[414] It was the view of the healthcare professionals that had treated him, as well as external opinions, that nucleoside therapy would be futile, clarified to mean that 'it would have no effect but may well cause pain, suffering, and distress'.[415] Life-sustaining treatment, such as ventilation, performs functions for the patient that are needed to be alive e.g. breathing.

[410] *Gard* (n345)
[411] *Gard* (n345) 10.
[412] Auckland (n403) 29.
[413] Imogen Goold, Jonathan Herring, Cressida Auckland *Medical Decision-Making on Behalf of Children Post-Great Ormond Street Hospital v* Gard (Hart Publishing, 2019) 183-4.
[414] *Gard* (n345) [49].
[415] *Gard* (n345) [49].

Gestation is a more gradual process, increasing the gestateling's development until, ideally, it would reach full term and be extracted. Ectogestation fundamentally is a process at the beginning of life, whilst other life-sustaining treatments are a part of end-of-life care. In this chapter's scenario, James and Betty's gestateling has a brain injury. The extent of this brain injury would need to be tested, as well as tests regarding the gestateling's likely capacities outside of AAPT. The amount of time taken to determine the level of damage caused would be a lengthy process, as healthcare professionals want to offer the best level of care to any patient, could even mean that the gestateling may have to be extracted from AAPT due to spatial limitations within ectogestative devices or perhaps tests being unable to be completed whilst undergoing ectogestation. Assuming that the gestateling is still in AAPT and is undergoing ectogestation, if the brain injury was found to be catastrophic resulting in ventilator dependence if extracted, with no prospect of recovery or improvement would AAPT have no positive benefit? Continuing ectogestation would sustain the entity whilst in AAPT, but it would be unable to benefit from this process as regardless of development it is unable to sustain itself externally. A more holistic approach could consider the benefits to allowing a possibly developmentally immature gestateling to physically grow in order to be held by James and Betty, as AAPT prevents any physical touch before extraction. At its most basic level continuing AAPT for a gestateling with no prospect of recovery would not medically benefit the entity and would cause no physical improvements or effects.

Futility is also linked to the burden the potential treatment can have on the person. Elliston gives two examples of how treatment can be futile. First, an antibiotic-resistant infection which would render the administration of antibiotics futile.[416] Second, where treatment may be physiologically effective; there would still be no overall benefit to the patient – for example, where a patient can be resuscitated but their condition is so poor they would likely suffer repeated respiratory failure.[417] Treatment being invasive and burdensome was part of the assessment of it's futility in the case of

[416] Sarah Elliston 'Treating the Preterm Infant – The Legal Context' in Jane Norman, Ian Greer *Preterm Labour: Managing Risk in Clinical Practice* (Cambridge University Press, 2005) 376.
[416] Ibid, 379.
[417] Elliston (n416) 379.

Archie Battersbee[418] and the pain caused by treatment was taken into consideration in the case of Charlie Gard.[419] The courts have indicated that where there is no chance of recovery or that the treatment could bring about any benefits to the patient, and it could be causing discomfort, pain or suffering it is futile to continue its administration. Furthermore, the burden that AAPT could cause must be assessed. The withdrawal of mechanical ventilation is the closest current non-treatment decision to refer to, yet the potential harms of ventilation outweigh AAPT. It is unlikely that AAPT would be as damaging. As considered previously, AAPT is arguably not as invasive a treatment as other forms of life-sustaining treatment. Consequently, the burden of AAPT will likely be minimal to the gestateling.

It is possible, that in this chapter's scenario, the court could find that even though AAPT will not improve the gestateling's condition, it will equally not be of detriment to the entity and so continuing gestation until it can be extracted and held by it's loved ones would be in the gestateling's best interests. As with any form of treatment, there are only limited resources and how these are best used is undoubtedly a factor which must be considered by the health professionals. This has been examined in the context of neonatal intensive care units where lack of staff, physical space or equipment could mean that treatment that *would* be in the best interests of the neonate is not available.[420] In situations where multiple patients require the same treatment that would be in all of their best interests, but the resources are not available to treat them all this becomes a difficult moral question for doctors. Whilst the effects of resource allocation will not directly impact the gestateling's best interests assessment, continuing to administer AAPT solely to allow the parents to be able to hold their developed child may not be the best allocation of the limited resources if there were to be another extremely premature entity requiring ectogestation for the best chance of survival.

[418] *Battersbee* (n345) [46].
[419] *Gard* (n345)[49].
[420] C Arora et al 'The Intensive Care Lifeboat: a survey of lay attitudes to rationing dilemmas in neonatal intensive care' (2016) 17 BMC Medical Ethics 1,2.

How the court assesses if AAPT can be futile will impact the non-treatment decision. For James and Betty's gestateling, AAPT will not improve its condition. Therefore, AAPT could be considered by the court to be futile, which forms a part of the non-treatment decision.

Could AAPT be switched off for a gestateling with legal personhood?

James and Betty's gestateling has been diagnosed with a brain injury, so severe there is no prospect of recovery, and it is likely the gestateling will be unable to sustain itself outside of AAPT. It must be reiterated that the scenario imagined within this chapter is not one which would be common, in fact the circumstances in which AAPT could be questioned to not be in the best interests of the gestateling would have to be incredibly severe, amounting to only the rarest of circumstances. This alongside the inevitable requirement for increased PND means that AAPT would not commonly even be considered as life-sustaining treatment. Yet I believe it is still important that this possibility, however unlikely, is explored in order to assess the full legal ramifications of the technology. It is vital that genetic progenitors feel comfortable using the technology. A gestateling with a life-limiting condition is not impossible and would have stark consequences for all individuals involved in the gestateling's care and treatment, family and medical professionals. Uncertainty would only exacerbate this. AAPT will only work as a technology if it is trusted by prospective users and part of this is ensuring that there is no uncertainty in its use. While without it very developmentally young gestatelings would be unable to survive without the continued gestation it facilitates, it is a treatment which is intended to mark the beginning of life; permitting development to continue until the gestateling can sustain itself.

Nothing is impossible. There is a small chance that the gestateling could have a life-limiting condition that could be determined to cause such suffering, and little chance of improvement, which continued AAPT is not in the entity's best interests. I argue that this would be in very limited circumstances, as gestation is not, at least presently or intended to be, a process which could ever be harmful. If ectogestation can ever be prematurely ended is a new question that the law will have to

address. If the gestateling is found to be born alive, the legal framework in place regarding non-treatment decisions is flexible enough that it could permit ectogestation. Therefore, it is possible for this question to be addressed by the courts and the issues raised by AAPT to be considered. It could be that this more flexible approach, reliant more on common-law and case precedent, is beneficial to the gestateling, an entity which strengthens each day it spends continuing it's gestation. A more rigid approach may not permit such analysis of the gestateling's ever growing strength.

It is unlikely that a gestateling that has been declared to be born alive upon extraction and placement into AAPT would ever have AAPT ended. This is reflective of the presumption in favour of life which the court upholds in all non-treatment decisions, and the many benefits that ectogestation can have on the gestateling.

Chapter Summary

Any non-treatment decision that could ever take place on behalf of a gestateling in AAPT will be exceptionally challenging. There are too many unknowns to ever be certain of what conditions would need to be present, or lacking, in order to amount to continuing ectogestation to not be in the gestateling's best interests. Gestation is a process which is inherent to all developing entities, a process which has never needed to be taken away from something which has been born alive. Ectogestation changes the intrinsic link that gestation and pregnancy have always held.

With this change, gestation becomes akin to any other form of medical treatment which could increase the likelihood of survival in it's patients. As I have explored within this chapter, it is likely that the gestateling would have to be diagnosed with a life-limiting disability or condition for a non-treatment decision to even be considered. Yet it is also likely that the majority of fetuses who are found to have these conditions through PGD would not be considered viable for transfer to AAPT. This does not mean that it is not important for this eventuality to be explored, as no medical test or treatment is entirely foolproof.

No exact conclusions can be reached. The level of uncertainty surrounding the gestateling's legal existence and the courts interpretation of factors such as best interests, dignity and presumption

of life consequently mean that no certain answers can be determined by looking at common law. It instead highlights the importance of the initial decision of whether the gestateling should be granted legal personhood, because of the wider legal implications of such a decision.

CONCLUSION

It is not possible to answer if it would ever be possible to switch of AAPT to terminate the gestateling. This is because so much of the law surrounding the legal status of the gestateling is unclear and will be entirely dependent on how the court interprets the meaning of various pieces of legislation, and if it values historic case law as meaningful in modern times. This thesis has explored multiple possible outcomes to the court's interpretation of born alive, and the subsequent impact that the gestateling's legal status will have on switching off AAPT. This issue will almost certainly arise in the future use of AAPT, especially if the gestateling were diagnosed with a disability of life-limiting condition. Whilst these are difficult questions to be raised with eugenic concerns, this does not diminish that practically these issues must be addressed in order to ensure that future gestateling's and their families feel protected by the law whilst undergoing the treatment.

Until the exact definition of what makes an entity 'born alive' is clarified, it is not possible to state whether or not a gestateling in AAPT has been born alive. This does not diminish the test's importance however, as it remains the only viable option of determining if an entity has been afforded legal personhood and consequently the full protection of the law. Splitting 'born alive' into 'birthed' and 'born alive' as almost two separate requirements is a significantly better framework to use when considering the status of an entity undergoing ectogestation as it is this process which makes it possible to be 'birthed' but not 'born alive.' Ectogestation signifies a change in the traditional birth process – there no longer has to be a singular event which marks the end of gestation and the change of location from in utero to ex utero, these stages do not need to happen concurrently.

It is almost certain that a gestateling that has been transferred into AAPT has been birthed. This is because 'birthed' appears to mark the physical change of location that occurs during traditional birth from in utero to ex utero. It is a matter of fact that a gestateling in AAPT is no longer in utero and is being gestated ex utero. This indisputable fact only makes up part of what is required of being 'born alive' and therefore cannot be relied upon solely to prove that a gestateling should have legal personhood.

Questioning if the gestateling has been ‘born alive’ is considerably harder, largely because what constitutes a sign that an entity has capacity for independent life is not conclusive. Defining what constitutes a sign of life is difficult as the law does not explicitly state exactly how exertive or passive these signs can be. An entity exhibiting passive signs of life, such as a fetal heartbeat, is not as developed as one which is breathing, or at least attempting to breathe. Both of these signs are necessary for life, but only one is done actively by the entity. It has been recognised that there is a conflict within the law regarding what constitutes a sign of life, but the change that would be needed to make the definition of ‘born alive’ cohesive has not yet materialised.

The uncertainty in the law is only exposed further by advances in medical technology which reinvent pregnancy and birth, such as AAPT. The gestateling will be an entity that cannot be clearly legally defined within the current parameters the law has set in relation to being ‘born alive.’ What this highlights is that the law is not prepared to legislate ectogestation as it is currently formed. This is entirely logical, as key legislation such as the AA, ILPA and OAPA were conceived at a time where ectogestation was not considered even a distant possibility. The law has shown some flexibility, with the alteration of viability in line with increasing survival of premature neonates under 28 weeks due to advancements in treatment options. Yet is simultaneously rigid with abortion’s criminalisation despite the safety of the procedure.

What legal standing a gestateling will possess is difficult to assess. There is a compelling argument that the gestateling is not born alive upon transferral to AAPT as has been argued throughout this thesis, but this does not mean that this will be the decision made by the courts. The emotional weight of declaring an entities legal standing, and the significant implications the decision would have on the gestateling, will be a greater burden on those who decide. It is considerably easier to be discussing a hypothetical entity that is not in tangible existence.

This is why this thesis has explored both eventualities of the gestateling either being granted legal personhood, or not. Because the decision that the court could make is so unpredictable, it is

necessary that both options are fully explored to examine the laws preparedness to legislate ectogestation. Whether a gestateling is granted legal personhood or not are also two starkly different outcomes because it would mean moral equivalence to either a neonate or a fetus. Both of these entities are treated differently by the law, with the former being given substantially more protection than the latter, whilst a gestateling would exist in limbo between the two. The law does not permit for an entity to exist in between legal states as it constructs personhood as a binary. This is another example of the law being unable to legislate ectogestation as the process itself would lie between in-utero gestation and NIC as it facilitates further gestation but is administered like medical treatment. Arguing for a single stance on this matter would offer to narrow an analysis of the impact that AAPT and the gestateling will have on the law.

If a gestateling is not granted legal personhood, it will retain the protections of a fetus as an entity which has not been born alive. The only law which is applicable to the termination of an entity that has not been born alive is the AA. As the AA is a defence to the criminalisation of abortion in the OAPA and ILPA, an offence must be committed in order for it to be operable. Whether it would be possible for an offence to be committed is uncertain. It is likely that the, by the construction of the AA, an abortion is a procedure which can only happen to the pregnant person with the consequence of terminating the fetus in utero. A gestateling is no longer being gestated by a pregnant person, therefore there would be no pregnant person to have the abortion of the gestateling. The AA is written for a physical pregnant person, and without that presence it would likely not be possible for an abortion to take place. Consequently, the AA could not become operable as there is not an abortion taking place. Despite this, it is still useful to look to the AA as guidance for what could occur when terminating a gestateling.

It is also useful to consider the legislation of embryos and how disputes involving ownership of embryos have been managed. Even though a gestateling and an embryo are distant entities, how the courts manage where genetic parents have differing wishes for their embryo is interesting to consider.

If the gestateling was found to be born alive upon extraction from the womb and transferral into AAPT, this would require an entirely different application of law. It would be a decision

comparable to non-treatment decisions that are discussed at the end of a patient with a severe life-limiting condition or who has no chance of recovery. This requires an assessment of the patient's best interests. This would be assessed exactly the same as any other patient. What constitutes the gestateling's best interests, as discussed above, varies drastically on a case-by-case basis, as is the nature of the flexible test. Because of the flexibility of the best interests test, it is possible for it to be applied to ectogestation. However, because a non-treatment decision will only be taken in the most severe circumstances, it is unlikely that such a threshold would be reached for a gestateling in AAPT. Gestation is a process which can only benefit the entity by continuing development and increasing the likelihood of survival each day that passes.

This thesis wide consideration of hypothetical scenarios that genetic parents and healthcare professionals will have to inevitably face when considering the partial ectogestation of a gestateling. As has been repeatedly emphasised, this thesis is not an exploration of the moral quandaries that arise when considering if AAPT could be switched off. That would require an entirely separate thesis. Instead, the aim throughout was to explore if current legal framework could ever be applied to ectogestation and a gestateling. What becomes apparent is that the law struggles to adapt to ectogestation, a medical advancement which entirely transforms the process of pregnancy and birth. Change is required regardless of if the courts declare the gestateling to be born alive or not.

I have argued that the root of the issues raised throughout this thesis lies in the law's binary view of legal personhood. A gestateling that has been born alive is the most cogent outcome with the present state of the law, but it does not acknowledge the flaws in equating such a developmentally young entity with a neonate. Moreover, the law should not label a gestateling born alive just because that is what 'fits' better. Ectogestation is an entirely new concept, and thus should be treated legally as such. It must be emphasised that the determination of the gestateling's legal status will be the single most important decision made on the entity's behalf. It will impact every consequential question raised, including if AAPT can be switched off. That legal personhood remains a binary system, in which an entity possesses it or does not will become an outdated concept. It is not possible to apply such a clean-cut concept to ectogestation, a treatment which alters the entire process of gestation and

birth. Clarifying the legal status of the gestateling is paramount, and it is only then that the legal implications of AAPT can be fully explored.

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