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Subject: Termination of Pregnancy Bill 2018 - law reform submission by Eunice Tay
Date: Wednesday, 5 September 2018 11:37:46 AM
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Dear Queensland Parliamentary Committee,

I am Eunice Tay (LLB and BSc candidate, The University of Queensland, Brisbane, Australia).

I would like to make a submission regarding the Termination of Pregnancy Bill 2018 (Qld) (attached document) asking the Committee to reconsider the proposed bill.

I wish to address some shortcomings of the QLRC's report with regards to the development and moral status of the foetus and present medical and legal evidence in light of the shortcomings. The evidence can be summarised as follows:

1. The heart activities of the unborn child which begin at 3 weeks and 1 day after fertilisation;
2. The brain activities of the unborn child which begins at 6 weeks after conception and reaches exhibition of regular wave patterns at 25 weeks; and
3. The framework for all peripheral nerves and spinal cords (in order to feel pain) is grown by the 12th week of gestation so there is evidence of the foetus perceiving pain at around 15 weeks of gestation.

The evidence proffered above leads to serious ramifications regarding the termination of a child both before and after 22 weeks as proposed by the bill. Through my submission I hope to shed light on the failings and shortcomings of the proposed bill and ask that the Committee take this into consideration.

My contact details are on the final page of the submission. Please do not hesitate to contact me if you have any questions regarding my submission.

Kind regards,

Eunice Tay

LET'S PUT THE HEART AND MIND OF THE UNBORN CHILD INTO THE HEART AND MIND OF THE ABORTION DEBATE

EUNICE TAY*

I INTRODUCTION

Upon examining the Queensland Law Reform Commission's report on the review of termination of pregnancy laws,[1] in particular, Appendix D: 'Development and Moral Status of the Fetus', several shortcomings in the report have been observed and I wish to make submissions about the evidence on this question. This submission will argue that in outlining the stages of foetal development and differing views about the moral status of the foetus, the QLRC failed to take into consideration the heart and brain activities of a child *en ventre sa mère*, as well as the ability of the unborn child to feel pain. This paper intends to adduce medical evidence in light of the current criminal law in requesting the QLRC to reconsider the *Termination of Pregnancy Bill 2018* (Qld), in particular clauses 5 and 6.

II THE CURRENT CRIMINAL LAW

In Queensland, pursuant to the *Criminal Code 1899* (Qld) ('*Criminal Code*'), s 292 provides that a child only becomes a human being capable of being killed when it has 'completely proceeded in a living state from the body of its mother'. However, the *Criminal Code* does not define 'living state', thus the common law definition of life is adopted which is usually associated with brain or heart activity.[2] The case of *R v Iby*[3] involved the issue of what it meant to be 'born alive'. Spigelman CJ, with whom Grove and Bell JJ agreed, concluded that although there is no single test of what constitutes 'life', there was 'clear authority that the *beating of the heart is sufficient evidence* to establish "life" for the purposes of the born alive rule' (emphasis added), and that evidence of respiration was not necessary to establish life after birth.[4] At trial, the trial judge accepted and adopted the opinion of Dr Jacqueline Stack, a neonatologist and paediatrician, who held strongly to the view that it is not necessary for all

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Members of Providence Church Brisbane.

[1] Queensland Law Reform Commission, *Review of termination of pregnancy* laws, Report No 76 (2018).
[2] Heather Douglas, 'Abortion reform: A state crime or a woman's right to choose?' (2009) 33 *Criminal Law Journal* 74, 75 (footnote 9).
[3] [2005] NSWCCA 178.
[4] R v Iby [2005] NSWCCA 178, [60], [62].

organs to be functioning in order for a child to be alive. She gave examples of congenital malformation, including missing organs and in some cases even a missing cortex.[5] Further, Spigelman CJ discussed the definition of life adopted by the World Health Organisation: 'Live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which, after such separation, breathes or shows *any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles*, whether or not the umbilical cord has been cut or the placenta is attached; each product of such a birth is considered live born' (emphasis added).

Other case authorities include *Brock v Kellock*[6] whereby it was said that in order to prove the existence of animal (including human) life, proof of the performance of one clear vital function is enough. The judge proceeded to state that he believed it is enough to prove pulsation in order to prove existence of life. In *R v Senior*,[7] a surgeon was convicted of manslaughter whereby in his gross incompetence, he crushed the skull of the child as its head had extruded from the mother's womb so that it died immediately after birth. The child had no circulation independent of the mother at the date of injury to it thus it was considered to be a pre-natal injury which caused death to the child after birth. Likewise, in *A-G's Ref (No 3 of 1994),*[8] although it was confirmed that an unborn foetus is not capable of being murdered, it was held that a manslaughter conviction can stand where the foetus was subsequently born alive but dies afterwards from injuries inflicted whilst in the womb. And interestingly, in *R v West*,[9] the trial judge directed the jury that it could convict of murder where an attempt at abortion had led to a premature birth and the baby died because it was too weak to survive.

With reference to the foregoing, clear analogies may be drawn between 'born alive' cases and cases involving pre-natal injury to the cases involving unborn children. The 'born alive' cases indicated what the court considers as constituting and amounting to evidence of 'life' through weighing up of scientific evidence. These include the beating of the heart, the definite movement of voluntary muscles, and brain activity. The cases involving pre-natal injury acknowledge a real sense of tragedy of death resulting from pre-natal injuries which begs the criminal law to intervene and procure proper punishments. This paper will present evidence of life present in a child *en ventre sa mère* in accordance with the case authorities

[5] Ibid [6]-[7].
[6] (1861) 30 LJ Ch 498; 3 Giff 58.
[7] (1832) 1 Moody CC 346.
[8] [1997] 3 WLR 421.
[9] (1848) 2 Car & K 748; 175 ER 329.

cited above and will submit that these protections should not only be afforded post-birth. For if such evidence amounted to life in accordance with the law, it would be arbitrary to not also afford such protections to those who possess the same medical attributes pre-birth.

III Heart Activity

A significant number of medical authorities agree that the heart begins to beat three weeks and one day after fertilisation.[10] Cardiovascular development in a human embryo occurs between three to six weeks after ovulation.[11] Valenti et al note that cardiac function is the first sign of independent cardiac activity that can be explored with non-invasive techniques such as Doppler's ultrasound.[12] Cardiac motion and heartbeats can be detected at the end of the fourth week of gestation.[13] By four weeks, the heart typically beats between 105 and 121 beats per minute (bpm).[14] The Biology of Prenatal Development has also provided a video of the heart beating at four weeks and four days.[15] The heart, whose development starts at the third week of gestation, has rapid and irregular contractions capable of pumping the blood inside the vessels. Echocardiographic and anatomical correlations in first-trimester foetuses show that by eleven weeks' gestation, the position of the foetal heart within the chest is similar to that in later gestation, and the spatial relation of the great arteries and their relative sizes are similar to those on second-trimester scans by twelve weeks' gestation.[16] The heart rate increases between the fifth week of gestation and ninth week of gestation and reduces after the thirteenth week of gestation.[17]

If the beating of the heart is sufficient evidence to establish 'life' for the purposes of the born alive rule as per *R v Iby*, it would be arbitrary for it to not also amount to life whilst still in the womb as the same vital requirement is met. The evidence above indicate that evidence of life is present at three weeks' and one day after fertilisation as that is when the heart

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[10] Stuart Campbell**,** *Watch me grow: A unique 3-dimensional week-by-week look at your baby's behavior and development in the womb* (St Martin's Griffin, 1st ed, 2004); Bruce M Carlson**,** *Human embryology & developmental biology* (Mosby, 3rd ed, 2004); PA de Vries and JB Saunders**,** 'Development of the ventricles and spiral outflow tract in the human heart' (1962) 37 *Carnegie Institution of Washington Contrib Embryol* 87.
[11] Julene S Carvalho, Gonzalo Moscoso and Yves Ville, 'First-trimester transabdominal fetal echocardiography' (1998) 351(9108) *The Lancet* 1023.
[12] Ibid.
[13] Oriana Valenti et al, 'Fetal cardiac function during the first trimester of pregnancy' (2011) 5(3) *Journal of Prenatal Medicine* 59.
[14] Marijke van Heeswijk, Jan G Nijhuis and Hans MG Hollanders, 'Fetal heart rate in early pregnancy' (1990) 22(3) *Early Human Development* 151.
[15] The Endowment for Human Development, *Prenatal Form and Function – The Making of an Earth Suit – Unit 4: 3 to 4 weeks* (2018) <[redacted]
[16] Valenti et al, above n 13.
[17] Ibid.

activity commences. The QLRC should hitherto review clause 5 of the proposed bill regarding whether 22 weeks is a reasonable timeframe for a child *en ventre sa mère* to be terminated legally when his or her heart would have been beating for approximately 19 weeks already.

IV Brain Activity

The definition of death amongst medical professionals and scientists is undisputed: it is considered the time when electroencephalography activity ceases, even if vital functions can be maintained artificially. A patient determined to be brain dead is both legally and clinically dead, and prior to this, the person is considered to be alive. Electroencephalography measures brain activity and for it to be considered valid, results must demonstrate regular wave patterns.[18] With reference to the foregoing, individualised but primitive brainwaves recorded via electroencephalogram have been recorded as early as six weeks after conception.[19] At around 25 weeks, foetal brain activity has already begun to exhibit regular wave patterns.[20]

Therefore, from six weeks after conception, the child *en ventre sa mère* may begin to fall under the medical definition of life as being the opposite of the definition of death, and the regular wave patterns in foetal brain activity at 25 weeks would constitute being 'alive' according to the medical definition of valid brain activity. This evidence brings into question termination of a child six weeks from conception, which clause 5 of the proposed bill seeks to do as it is terminating the life of a child with brain activity. Moreover, it would thus be absurd for clause 6 of the proposed bill to allow termination of a child after more than 22 weeks as it is the termination of human life – that is, 'life' for the purpose of having regular brain activity whilst containing the complete genetic makeup of a human being.

V Foetal Pain

The classical view of the proper perception of pain is related to the processing of afferent nociceptive signals at the level of the cortex cerebri. The perception of pain among adults encompasses the subject's consciousness and active cortex cerebri, which enables learning

[18] Ajay Kumar Goila and Mridula Pawar, 'The diagnosis of brain death' (2009) 13(1) Indian Journal of Critical Care Medicine 7.
[19] The Endowment for Human Development, *Prenatal Form and Function – The Making of an Earth Suit – Unit 7: 6 to 7 weeks* (2018) [redacted]
[20] Roman R O'Rahilly and Fabiola Müller, *The embryonic human brain: an atlas of developmental stages* (John Wiley & Sons, 3rd ed, 2006); G E Jones, 'Fetal brain waves and personhood' (1984) 10(4) *Journal of Medical Ethics* 216.

and activates memory and emotions in the process of pain processing.[21] The framework for all peripheral nerves and spinal cords is grown by the twelfth week of gestation, as are the hormones and neurotransmitters that participate in arousal and pain.[22] Further, Sekulic et al note that as the pathways that inhibit pain take longer to form, it is thus possible that the foetus is more prone to pain than adults. This is further evidenced by children born prematurely being more sensitive to pain than children born fully developed. Sekulic et al found that the foetus can appreciate an early form of pain at around 15 weeks of gestation as all anatomical frameworks required are already in the process of developing.[23] Similarly, Glover and Fisk, in considering the activity of cortex cerebri in pain processing, concluded that a foetus would begin to feel pain at the sixteenth gestation week.[24]

This medical evidence has serious moral and ethical ramifications for the proposed bill. Firstly, the evidence of foetal pain needs to be considered by the QLRC in determining the development and moral status of the child as the QLRC report is currently silent on this issue. As the law generally affords protection to prevent infliction of pain on all people, especially the vulnerable, the proposed bill needs to be amended in a way that will afford protection to this class of extremely vulnerable children who are able to perceive pain.

There is a further issue of whether the proposed bill would contravene international human rights law. In the 1992 case of *H v Norway*,[25] the applicant argued before the European Commission of Human Rights that during an abortion, no measures were taken to prevent pain to a foetus of 14 weeks gestation, amounting to a violation of the right to freedom from cruel and degrading treatment. The Commission rejected this argument on the basis that there was no material evidence of foetal pain upon which to base it. However, it has been 26 years since that case was argued before the Commission, and there have since been significant advances in medical research, such as the research cited above. Therefore in light of improved medical knowledge, the QLRC should take into consideration the above evidence regarding foetal pain so that more protection may be afforded to children *en ventre sa mère*, including measures taken to prevent pain to the foetus, such that the proposed bill

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[21] Franziska Denk, Stephen B McMahon and Irene Tracey, 'Pain vulnerability: a neurobiological perspective' (2014) 17(2) *Nature Neuroscience* 192.
[22] Slobodan Sekulic et al, 'Appearance of fetal pain could be associated with maturation of the mesodiencephalic structures' (2016) 9 *Journal of Pain Research* 1031.
[23] Ibid.
[24] Vivette Glover and Nicholas M Fisk, 'Fetal pain: implications for research and practice' (1999) 106(9) *British Journal of Obstetrics and Gynaecology* 881.
[25] Application No 17004/90 (1992).

would not amount to a potential violation of the foetus' right to freedom from cruel and degrading treatment.

VI Conclusion

This paper has brought medical evidence regarding the heart and brain activities of unborn children, as well as their ability to feel pain. I wish to encourage the QLRC to take these matters into consideration and revisit the shortcomings of the QLRC's report regarding the development and moral status of the foetus. Australian criminal law has taken into account heart and brain activities in determining whether a child was born alive, and the protections, albeit minimal, afforded to children who have subsequently died due to pre-natal injuries. Thus, in a similar manner, the proposed bill should take into consideration the heart and brain activities that unborn children do, in fact, have, as well as their ability to feel pain, and afford them greater protection than that which already exists, rather than lesser protection. As with any legislation, there must be a balancing of the rights of the stakeholders. This law must balance both the rights of women and the rights of the child *en ventre sa mère*. Currently, the proposed bill heavily disregards the rights of the latter in many ways, one of which is reflected in the shortcomings of the QLRC's report.

BIBLIOGRAPHY

A *Articles/Books/Reports*

Campbell**,** Stuart, *Watch me grow: A unique 3-dimensional week-by-week look at your baby's behavior and development in the womb* (St Martin's Griffin, 1st ed, 2004)

Carlson**,** Bruce M, *Human embryology & developmental biology* (Mosby, 3rd ed*,* 2004)

Carvalho, Julene S, Gonzalo Moscoso and Yves Ville, 'First-trimester transabdominal fetal echocardiography' (1998) 351(9108) *The Lancet* 1023

de Vries, PA and JB Saunders**,** 'Development of the ventricles and spiral outflow tract in the human heart' (1962) 37 *Carnegie Institution of Washington Contrib Embryol* 87

Denk, Franziska, Stephen B McMahon and Irene Tracey, 'Pain vulnerability: a neurobiological perspective' (2014) 17(2) *Nature Neuroscience* 192

Douglas, Heather, 'Abortion reform: A state crime or a woman's right to choose?' (2009) 33 *Criminal Law Journal* 74

Glover, Vivette and Nicholas M Fisk, 'Fetal pain: implications for research and practice' (1999) 106(9) *British Journal of Obstetrics and Gynaecology* 881

Goila, Ajay Kumar and Mridula Pawar, 'The diagnosis of brain death' (2009) 13(1) Indian Journal of Critical Care Medicine 7

Jones, G E, 'Fetal brain waves and personhood' (1984) 10(4) *Journal of Medical Ethics* 216
O'Rahilly, Roman R and Fabiola Müller, *The embryonic human brain: an atlas of developmental stages* (John Wiley & Sons, 3rd ed, 2006)

Queensland Law Reform Commission, *Review of termination of pregnancy* laws, Report No 76 (2018)

Sekulic, Slobodan, Ksenija Gebauer-Bukurov, Milan Cvijanovic, Aleksandar Kopitovic, Djordje Ilic, Djordje Petrovic, Ivan Capo, Ivana Pericin-Starcevic, Oliver Christ, and Anastasia Topalidou, 'Appearance of fetal pain could be associated with maturation of the mesodiencephalic structures' (2016) 9 *Journal of Pain Research* 1031

The Endowment for Human Development, *Prenatal Form and Function – The Making of an Earth Suit – Unit 4: 3 to 4 weeks* (2018) [redacted]

The Endowment for Human Development, *Prenatal Form and Function – The Making of an Earth Suit – Unit 7: 6 to 7 weeks* (2018) [redacted]

Valenti, Oriana, Fosca A F Di Prima, Eliana Renda, Marianna Faraci, Entela Hyseni, Robert De Domenico, Santo Monte and Elsa Giorgio, 'Fetal cardiac function during the first trimester of pregnancy' (2011) 5(3) *Journal of Prenatal Medicine* 59

van Heeswijk, Marijke, Jan G Nijhuis and Hans MG Hollanders, 'Fetal heart rate in early pregnancy' (1990) 22(3) *Early Human Development* 151.

B *Cases*

A-G's Ref (No 3 of 1994) [1997] 3 WLR 421

Brock v Kellock (1861) 30 LJ Ch 498; 3 Giff 58

H v Norway Application No 17004/90 (1992)

R v Iby [2005] NSWCCA 178

R v Senior (1832) 1 Moody CC 346

R v West (1848) 2 Car & K 748; 175 ER 329

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