

NON-MEDICAL SEX SELECTION IN AUSTRALIA: PUBLIC VIEWS AND BIOETHICAL CONCERNS

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In 2017, following an extensive review of its ethical guidelines on assisted reproductive technology (ART), the Australian National Health and Medical Research Council (NHMRC) upheld its moratorium on non-medical sex selection (NMSS) pending further public debate. Interestingly, the public consultation conducted by the NHMRC revealed a majority of submissions supported a permissive approach to NMSS, suggesting a potential shift in attitudes about NMSS in Australia. Historically, public consultation on NMSS both internationally and in Australia has revealed general opposition to this practice. This has reinforced concerns raised against NMSS in bioethical debates and been reflected in a restrictive regulatory approach to NMSS in many countries. The NHMRC public consultation highlights a potential disconnect between the concerns raised about NMSS in scholarly literature and more liberal community views. This paper reviews the submissions made to the NHMRC on NMSS and argues that the current moratorium should be revisited with a view to exploring a more nuanced approach to regulating NMSS in the future.

I INTRODUCTION

In 2017, following an extensive review of its ethical guidelines on assisted reproductive technology ('ART'), the Australian National Health and Medical Research Council ('NHMRC') upheld its moratorium on non-medical sex selection ('NMSS') pending further public debate.¹ As part of its review, in 2015 the NHMRC conducted a public consultation and a range of submissions were made on the specific issue of NMSS.² Interestingly, a majority of the submissions to the NHMRC in 2015 reflect a permissive attitude towards NMSS. Although the public consultation by the NHMRC may not represent the overall views of the Australian public toward NMSS, it is the first time in Australia that a consulted majority has expressed support for NMSS. The NHMRC public consultation highlights a potential disconnect between the concerns raised about NMSS in scholarly literature (which supports a restrictive approach to regulation) and more liberal community views.

Internationally, public opinion towards NMSS has had a significant influence on its regulation.³ The potential shift in public attitudes toward NMSS revealed by the NHMRC public

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¹ National Health and Medical Research Council (NHMRC), *Draft Ethical Guidelines on the Use of Assisted Reproductive Technology in Clinical Practice and Research: Public Consultation – 2015* (2015) <https://consultations.nhmrc.gov.au/public_consultations/assisted-reproductive-tech>.

² NHMRC, above n 1, 72.

³ Michelle Taylor-Sands, 'Non-Medical Sex Selection: Sliding Down the Slippery Slope?' in Ian Freckelton and Kerry Peterson (eds), *Tensions and Traumas in Health Law* (Federation Press, 2017).



consultation suggests that it may be time to take a less restrictive approach to regulating NMSS in Australia than the current moratorium provides. This paper analyses 117 publicly available submissions made as part of the NHMRC's review.⁴ The purpose of this analysis is to gain a greater insight into the reasons put forward both in support of, and against, NMSS. The authors explore the relationship between the public views expressed and the theoretical arguments canvassed in bioethical literature on NMSS. Given the potential disconnect between public attitudes and theoretical concerns raised about NMSS, the authors argue that the current moratorium on NMSS be reviewed in light of currently available evidence arising out of the submissions to the NHMRC. The authors acknowledge that the 117 submissions analysed as part of this study constitute only 54 per cent of the total submissions (217) received by the NHMRC during the consultation process. The remaining submissions were not published by the NHMRC on the basis that the authors of those submissions had requested that they remain confidential. Although the analysis therefore relates to only a proportion of all submissions on the topic, the data contained within the publicly available submissions nevertheless provides a very rich source of information about what might constitute the public's view of NMSS.

Part II of this paper outlines the regulatory framework for NMSS in Australia, placing the relevance of the NHMRC review in the context of the regulatory landscape. Part III briefly outlines the outcomes of public consultations on NMSS internationally and highlights some practical limitations in relying on a public consultation process to reflect public opinion. Part IV of the paper sets out the key bioethical arguments concerning NMSS raised in scholarly literature, providing a basis to contrast the key themes in the literature with those canvassed in the submissions to the NHMRC. In Part V of the paper, the authors outline the methodology adopted for analysis of the submissions, before presenting the findings from the data analysis. In Part VI, we contrast our findings from the analysis with the key concerns raised in the bioethical literature. We conclude in Part VII that the potential shift in public opinion toward NMSS supports a more nuanced approach to regulating NMSS in the future.

II REGULATORY FRAMEWORK

ART regulation in Australia is comprised of state legislation, national professional standards and ethical guidelines. Four states have passed specific ART legislation – New South Wales, South Australia, Victoria, and Western Australia.⁵ Except for New South Wales, all of these legislative frameworks impose eligibility criteria under statute, limiting services to those who have a medical need for them.⁶ Prospective parents wishing to access ART services for the sole purpose of NMSS are unlikely to meet these eligibility requirements as the desire to utilise IVF and PGD is not motivated by a medical need (such as avoiding a genetic condition). Where legislation does not address specific aspects of ART, or where there is no specific ART legislation, the ART guidelines apply, which are silent on the issue of eligibility.

Aside from eligibility requirements, some legislative frameworks prohibit NMSS explicitly.⁷ However, Victoria's legislative framework is unique in that it provides an option to apply to the Patient Review Panel to circumvent either the prohibition on NMSS, or to overcome the restriction based on the statutory eligibility criteria (or a presumption against accessing

⁴ National Health and Medical Research Council, *Public Submissions* (2015)

<https://consultations.nhmrc.gov.au/public_consultations/submissions/assisted_reproductive_tech>.

⁵ *Assisted Reproductive Technology Act 2007* (NSW); *Assisted Reproductive Treatment Act 1988* (SA); *Assisted Reproductive Treatment Act 2008* (Vic); *Human Reproductive Technology Act 1991* (WA).

⁶ *Assisted Reproductive Treatment Act 1988* (SA) s 9; *Assisted Reproductive Treatment Act 2008* (Vic) s 10; *Human Reproductive Technology Act 1991* (WA) s 23.

⁷ *Assisted Reproductive Treatment Act 2008* (Vic) s 28.

treatment services if one applies).⁸ The role of the Patient Review Panel in Victoria is demonstrated by the case *JS and LS v Patient Review Panel*,⁹ which concerned a couple who wished to use IVF and PGD to determine the sex of a prospective child, following the death of their child. It was decided that the couple were not permitted to access IVF and PGD for NMSS as it did not primarily concern the welfare and interests of the child to be born.¹⁰

Access to PGD for non-medical sex selection is similarly restricted in South Australia and Western Australia as a result of general statutory eligibility criteria (although, in those states there is no option of applying to a review panel to circumvent such restrictions). Aside from legislation, the ART guidelines also prohibit the use of PGD for NMSS.¹¹ The ART guidelines recognise that sex selection is an ethically contentious topic, noting that ‘[a]ttitudes towards some of the more controversial practices and aspects of ART differ considerably, and are shaped by an individual’s own particular set of values, preferences, and beliefs, or those of their family and/or community’.¹² Although the national guidelines are not legally enforceable, the national accreditation system for state- and territory-based ART clinics in Australia requires adherence to them, and compliance is linked to federal funding.¹³ On this basis, NMSS is not currently permitted in Australia.

III PUBLIC OPINION ON NMSS AND CONSULTATION PROCESSES

A Public Opinion Concerning NMSS

Regulatory prohibition of NMSS might be thought to reflect public opinion on the topic. Public opinion has, in the past, generally opposed NMSS. This is certainly evident in the context of the regulatory framework in place in the United Kingdom (UK). Thus, in the UK, NMSS was initially prohibited by regulatory policy issued following a consultation undertaken in 1993 by the UK’s regulator, the Human Fertilisation and Embryology Authority (HFEA).¹⁴ Since then, strong public opinion against NMSS appears to have influenced regulators in continuing its prohibition. NMSS is now prohibited on the face of the UK legislative framework following amendments to the UK’s ART legislative framework, set out in the *Human Fertilisation and Embryology Act 2008* (‘UK’).¹⁵ This position is supported by the HFEA’s policy, which regulates ART services.¹⁶ This prohibitive approach was informed by the results of public consultation conducted by the HFEA from 2002-2003.¹⁷ However, in 2005, the UK House of Commons Science and Technology Committee (‘STC’) recommended to the UK Government that sex selection be allowed for family balancing.¹⁸ The STC endorsed the view of the Ethics

⁸ *Assisted Reproductive Treatment Act 2008* (Vic) ss 15(1), 85(b)(e). For a discussion of the regulatory position in Victoria and how the statutory framework applies to NMSS, see Malcolm K Smith and Michelle Taylor-Sands, ‘Comparing Non-medical Sex Selection and Saviour Sibling Selection in the Case of *JS and LS v Patient Review Panel*: Beyond the Welfare of the Child?’ (2018) 15(1) *Journal of Bioethical Inquiry* 139-153.

⁹ (*Health and Privacy*) [2011] VCAT 856.

¹⁰ See Smith and Taylor-Sands, above n 8.

¹¹ NHMRC, above n 1 [8.14.1].

¹² NHMRC, above n 1, 69.

¹³ Fertility Society of Australia, Reproductive Technology Accreditation Committee 2010. Accreditation is now mandatory under Commonwealth legislation regulating embryo research and human cloning (*Research Involving Human Embryos Act 2002* (Cth) ss 8 and 11).

¹⁴ Human Fertilisation and Embryology Authority, *Sex Selection: Options for Regulation* (2003, London) 7.

¹⁵ See, in particular, Schedule 2, s 1ZB of the *Human Fertilisation and Embryology Act 2008* (UK).

¹⁶ Heather Strange, ‘Non-medical Sex Selection: Ethical Issues’ (2010) 94(1) *British Medical Bulletin* 10.

¹⁷ *Ibid* 8.

¹⁸ House of Commons Science and Technology Committee (STC) Fifth Report of Session 2004-05, *Human Reproductive Technologies and the Law HC7-1* (24 March 2005) (STC Report) [142].

Committee of the American Society of Reproductive Medicine in 2001, which noted:

Until a more clearly persuasive ethical argument emerges, or there is stronger empirical evidence that most choices to select the gender of offspring would be harmful, policies to prohibit or condemn as unethical all uses of non-medically indicated preconception gender selection are not justified.¹⁹

The UK Government ultimately rejected the STC's recommendation based, at least in part, on the strength of public opinion (82.85 per cent) that NMSS should not be a matter of choice open to potential parents.²⁰ This reliance on public opinion was however met with controversy with expert scientists and bioethicists concerned that lay people's ethical judgments are less trustworthy, based on intuition and prejudice, rather than on knowledge and rational argument.²¹

Even in the United States of America ('USA'), where NMSS is generally permitted,²² a public survey revealed that 68 per cent of Americans were opposed to the use of PGD for NMSS.²³ A 2005 German study revealed even stronger opposition, with only eight per cent in favour of the use of PGD for non-medical reasons.²⁴ In the UK, an opinion poll in 2003, revealed that over 80 per cent of the UK public were opposed to sex selection for non-medical reasons.²⁵ Similarly, public opinion in Australia appears strongly opposed to NMSS. A 2011 poll showed that only 17 per cent of Australians were in favour of sex-selection for non-medical reasons.²⁶ Whilst the results of such polls cannot be said to truly reflect a representative sample of the population of the relevant jurisdictions in which the polls were undertaken (based on limited response rates and/or sample sizes), they do provide an insight as to what many members of the public might think about the issue of NMSS.

In Australia, when re-drafting the ART guidelines, the AHEC noted that 'with any controversial practice, society's readiness to accept a practice is a relevant and important consideration'.²⁷ Interestingly, the majority of submissions in response to the NHMRC's 2015 public consultation supported NMSS. This apparent change in support of NMSS marks a change in opinion since the last public survey undertaken in 2013 and is the first time the Australian public has responded with a majority in favour of NMSS. While this change is

¹⁹ Ibid. See also: ECASRM, 'Preconception Gender Selection for Nonmedical Reasons' (2001) 75(5) *Fertility and Sterility* 861, 863.

²⁰ Department of Health (UK), *Review of the Human Fertilisation and Embryology Act: Proposals for Revised Legislation (Including Establishment of the Regulatory Authority for Tissue and Embryos)*, Cm 6989 (2006) [2.45]–[2.47].

²¹ Mairi Levitt, 'Public Consultation in Bioethics. What's the Point of Asking the Public When They Have Neither Scientific nor Ethical Expertise?' (2003) 11 *Health Care Analysis* 38.

²² Arizona, Pennsylvania, Illinois and Oklahoma all prohibit abortion based on sex selection: Seema Mohapatra, 'Global Legal Responses to Prenatal Gender Identification and Sex Selection' (2013) 13 *Nevada Law Journal* 690, 709.

²³ Ethics Committee of the American Society for Reproductive Medicine (ECASRM), 'Use of Reproductive Technology for Sex Selection for Nonmedical Reasons' (2015) 103(6) *Fertility and Sterility* 1418, 1420.

²⁴ Tanja Krones et al, 'Public, Expert and Patients' Opinions on Preimplantation Genetic Diagnosis (PGD) in Germany' (2005) 10(1) *Reproductive BioMedicine Online* 116.

²⁵ Human Fertilisation and Embryology Authority (HFEA), *Sex Selection: Options for Regulation. A Report on the HFEA's 2002-03 Review of Sex Selection Including a Discussion of Legislative and Regulatory Options* (2003) [47] Appendix F.

²⁶ Gab Kovacs et al, 'The Australian Community Does Not Support Gender Selection by IVF for Social Reasons' [2013] *International Journal of Reproductive Medicine*, Article ID 242174.

²⁷ NHMRC, above n 1, 71.

noteworthy, the opinions expressed cannot necessarily be relied upon as a true representation of the views of the Australian public more generally. Additionally, by its very nature, a call for submissions is self-selecting insofar as those who participate are likely to hold a vested interest in the topic. The data from those submissions nevertheless provides a unique opportunity to analyse a range of public views on the topic. The publicly available submissions represent just over half (54 per cent) of all submissions made to the NHMRC. Thus, the thematic analysis below is a true analysis of submissions of members of the public who both consciously chose to participate and opted to make their submissions public. The change in opinion from restrictive to permissive is at least informative and worthy of consideration for future regulatory review of this issue.

B *Public Consultation: Reflective of Public Opinion?*

Whilst public consultation is an important element in the reform process in a liberal democracy, its role in shaping reform can be problematic, especially when seeking to regulate ethically controversial issues.²⁸ Some of the practical problems of conducting public consultations should be acknowledged. Some have noted that these include: the ability to engage a sufficient number of participants, and ensuring participants are equipped with sufficient knowledge of the issues and their complexity;²⁹ that even if knowledge is sufficient, respondents to public consultations often provide an intuitive ‘gut reaction’ response, based on false information, prejudice and/or fear.³⁰ This may be inconsistent with their other views and, therefore, results in an unrepresentative sample of responses which are likely difficult to justify.³¹ Further, given the contentious nature of this debate, consensus is unlikely because of the very nature of the issue itself. Thus, if public opinion is to serve as the foundation of regulation, yet public opinion does not provide a clear direction; then how do we find agreement amongst disagreement?³²

Some commentators argue that in addition to public debate, good regulation should be supported by robust ethical analysis and empirical evidence, particularly when it impacts on reproductive choice.³³ According to Harris, reproductive choices should ‘not simply be dismissed wherever and whenever a voting majority can be assembled against them’.³⁴ For societies that value respect for individual autonomy, the harm principle is central in guiding the making of law.³⁵ According to the harm principle, ‘the only purpose for which power can be rightfully exercised over any member of a civilised community, against his will, is to prevent harm to others’, and ‘the conduct from which it is desired to deter him, must be calculated to produce evil to someone else’.³⁶

The regulation of NMSS is not, however, driven by the harm principle alone. Arguably NMSS is no more harmful than other forms of selective reproduction that are currently allowed,

²⁸ Sarah Jane Fovargue and Rebecca Bennett, ‘What Role Should Public Opinion Play in Ethic-Legal Decision Making?: the Example of Selecting Sex for Non-medical Reasons Using Preimplantation Genetic Diagnosis’ (2016) 24(1) *Medical Law Review* 34.

²⁹ *Ibid* 54.

³⁰ *Ibid* 55.

³¹ *Ibid*.

³² *Ibid* 5.

³³ Taylor-Sands, above n 3.

³⁴ John Harris, ‘Sex Selection and Regulated Hatred’ (2005) 31 *Journal of Medical Ethics* 291, 293.

³⁵ *Ibid*. See also, Kathryn Boyd, ‘Reproductive Autonomy and Social Sex Selection: A Chance of Choice?’ (2018) 25 *Journal of Law and Medicine* 1106-1118.

³⁶ John Stuart Mill, *On Liberty and Other Essays* (Oxford University Press, Oxford 2008) 14.

including donor conception, selecting out disability and saviour sibling selection.³⁷ Debate over NMSS reflects a myriad of ethical concerns that move beyond harm and go to the very nature of the role and values of parents. We explore the ethical concerns and empirical evidence around NMSS below.

IV ETHICAL CONCERNS ABOUT NMSS

Various social, political and ethical objections have been raised against NMSS in public debate. These objections are well canvassed in the bioethical literature. As part of this research project, we examined this literature in order to synthesise the key arguments. We determined that the objections fall roughly into three broad categories, which we summarise below,³⁸ comprising of:

- negative impacts on society;
- the welfare of the child to be born; and,
- the slippery slope of ‘designer babies’.

A *Negative Impacts on Society*

Demographic change and gender inequality are frequently cited as key problems associated with NMSS. Some commentators argue that allowing NMSS could lead to a disproportionate number of males in some cultures and compound already existing injustices between men and women.³⁹ Although empirically unsubstantiated in Australia, some cultures have shown a preference for male babies.⁴⁰ In other cultures, the vast majority of people seek NMSS for ‘gender balancing’ reasons.⁴¹ Either way, the practice could be regulated to prevent sex ratio imbalances. For example, restricting NMSS for family balancing would address concerns related to demographic imbalance. This could be achieved by limiting access to PGD for NMSS to couples who already have a child and are seeking to have another child of a different sex.

Others argue that selecting the sex of a child bases the worth of an individual on his/her sex, which is inherently sexist and perpetuates gender discrimination.⁴² This speculation has been

³⁷ For a discussion of some of these issues, see: Michelle Taylor-Sands, *Saviour Siblings: A Relational Approach to the Welfare of the Child in Selective Reproduction* (Routledge, 2013); Smith and Taylor-Sands, above n 8.

³⁸ For a more detailed discussion of the ethical concerns raised by non-medical sex selection, see: M Taylor-Sands, above, n 3, 317, esp. 321-329.

³⁹ See, for eg, Giuseppe Benagiano and Paola Bianchi, ‘Sex Preselection: An Aid to Couples or a Threat to Humanity?’ (1999) 14 *Human Reproduction* 868. Gender imbalances in favour of males in India and China are frequently cited as examples of the dangers of social sex selection.

⁴⁰ China and India have revealed a marked preference for boys over girls: Mohapatra, above n 22, 691.

⁴¹ Edgar Dahl et al, ‘Preconception Sex Selection for Non-Medical Reasons: A Representative Survey from Germany’ (2003) 18 *Human Reproduction* 2231; Edgar Dahl et al, ‘Preconception Sex Selection for Non-Medical Reasons: A Representative Survey from the UK’ (2003) 18 *Human Reproduction*, 2238. The term ‘gender balancing’ is potentially misleading, as sex does not necessarily correlate with gender.

⁴² See, for eg, Eric Blyth, Lucy Frith and Marilyn Crawshaw, ‘Ethical Objections to Sex Selection for Non-Medical Reasons’ (2008) 16 *Reproductive BioMedicine Online* 41; Neil Levy, ‘Against Sex Selection’ (2007) 100 *Southern Medical Journal* 107; Don Chalmers, ‘Regulatory Legitimacy: The Case for Controlling and Restricting Access to PGD for Sex-Selection Purposes’ in Sheila AM McLean and Sarah Elliston (eds), *Regulating Pre-Implantation Genetic Diagnosis: A Comparative and Theoretical Analysis* (Routledge-Cavendish, 2013) 167.

refuted for its lack of empirical basis.⁴³ In the US, the majority of couples seeking NMSS do so for ‘family balancing’ purposes.⁴⁴ Wanting to parent both male and female children does not in itself signify a sexist attitude as the desire for a child of a particular sex may simply be based on the ‘recognition that the experience of parenting a boy is different from that of parenting a girl’.⁴⁵ This attitude has been criticised as promoting ‘gender essentialism’ insofar as parents ‘assume that gender follows from sex’ and anticipate that children of a particular sex will ‘fulfill preconceived binary roles’.⁴⁶ Rather than justifying a blanket ban on NMSS, the gender essentialist critique highlights the need for greater counselling to educate parents that, despite the strong correlation between biological sex and gender, they are not the same thing and there are ultimately no guarantees about the roles their children will take on. Counselling around sex and gender might run along similar lines as genetic counselling. However, as Mikhalevich and Powell point out, it is difficult to predict how such counselling would operate given the ‘there is no broad agreement about the properties that make up gender or even whether gender is a legitimate category’.⁴⁷

B Welfare of the Child

Although the welfare of the child is a primary concern for all forms of selective reproduction,⁴⁸ the two key concerns raised in the context of NMSS are commodification and harm. In terms of commodification, the desire to select the sex of a child is often criticised as treating the child as a commodity rather than an individual in breach of Kant’s categorical imperative to treat people ‘never simply as a means, but always at the same time as an end’.⁴⁹ However, having a preference for a child of a particular sex does not prevent parents from treating the child as an individual in his/her own right once the child is born. Moreover, Kant’s dictum only prohibits treating another person *exclusively* as a means to an end and therefore envisages people may be treated as a means, provided they are also treated as an end. NMSS would not offend Kant’s categorical imperative provided the parents desire a child in his/her own right even though they may have a preference for a child of a particular sex and choose to act on that preference.⁵⁰

In terms of harm, a child could potentially be harmed either physically from the selection process (which involves embryo biopsy) or psychologically from learning they have been chosen for *what* they are rather than *who* they are. Some commentators argue that a child selected on the basis of sex may feel bound by parental expectations based on gender

⁴³ See, for eg, Eike-Henner W Kluge, ‘Sex Selection: Some Ethical and Policy Considerations’ (2007) 15 *Health Care Analysis* 73; John A Robertson, ‘Preconception Gender Selection’ (2001) 1 *American Journal of Bioethics* 2.

⁴⁴ A Kalfoglou et al, ‘Ethical Arguments For and Against Sperm Sorting for Non-Medical Sex Selection: A Review’ (2013) 26 *Reproductive BioMedicine Online* 231, 234.

⁴⁵ Bonnie Steinbock, ‘Sex Selection: Not Obviously Wrong’ (2002) 32(1) *Hastings Center Report* 23, 25.

⁴⁶ Tereza Hendl, ‘Queering the Odds: The Case Against “Family Balancing”’ (2017) 10(2) *International Journal of Feminist Approaches to Bioethics* 4. See also: Tamara Kayali Browne, ‘Why Parents Should Not be Told the Sex of their Fetus’ (2017) 43 *Journal of Medical Ethics* 5.

⁴⁷ Irina Mikhalevich and Russell Powell, ‘Sex Lies and Gender’ (2017) 43(1) *Journal of Medical Ethics* 14, 16.

⁴⁸ For a detailed discussion of the welfare of the child in selective reproduction, see: Taylor-Sands, above n 3.

⁴⁹ Immanuel Kant, *Groundwork of the Metaphysics of Morals* (Cambridge University Press, first published 1785, 2005 ed) [4.429]. Professor Tonti Filippini, for example, has expressed concerns about acceptance of a child being conditional on gender: *JS and LS v Patient Review Panel (Health and Privacy)* [2011] VCAT 856 [36].

⁵⁰ For a more detailed discussion of the debate around the relevance of Kant’s categorical imperative to selective reproduction, see Taylor-Sands, above n 37, 12-13.

stereotypes or that sex selection interferes with a child's 'right to an open future'.⁵¹ There is also a risk of harm to any child born who is not the desired sex when the technology is not 100 per cent accurate, as with sperm sorting. Some commentators argue that so long as the child born has a life worth living, s/he is not harmed, based on Parfit's non-identity principle.⁵² However, this justification is problematic and it is important to address all potential harms in selective reproduction.⁵³

Current evidence suggests minimal risk of physical harm associated with the embryo biopsy process in PGD, and the technique adopted for sperm sorting, although future monitoring is important to measure long-term safety.⁵⁴ Psychological harm is more speculative and difficult to measure. However, a recent US study suggests that couples seeking sex selection are conscious of the potential for psychological harm to the child to be born and capable of adapting their expectations when a child of the opposite sex is born.⁵⁵ As noted above, concerns about gender expectations can be addressed through pre-conception counselling.⁵⁶ Future monitoring of long-term outcomes for children and families utilising sex selection would build an empirical basis in relation to these concerns.

C *Slippery Slope Toward 'Designer Babies'*

In contrast to the practical concerns discussed above, the slippery slope objection raises ideological concerns about how we value life and view parental love. In contrast to other permitted forms of selection, allowing parents to choose the sex of their child for purely social reasons represents a shift in focus from therapeutic outcomes to parental preferences for a particular 'type' of child. NMSS potentially opens the floodgates to selecting a raft of other traits, such as hair colour, height, athleticism and intelligence (assuming this becomes possible).

Ideological opposition to 'designer babies' stems from a variety of concerns based on a range of religious, political and ethical views about the impact of selection on our humanity. While some writers argue that NMSS breaches the core parental virtue of unconditional acceptance,⁵⁷ others suggest that it violates human dignity by interfering with the principle of unconditional

⁵¹ For a discussion of the oppressive nature of 'genetic programming' see: Jürgen Habermas, *The Future of Human Nature* (Polity, 2003), 92; Bill McKibben, *Enough: Genetic Engineering and the End of Human Nature* (Bloomsbury, 2003) 58. Regarding the right to an open future, see: Joel Feinberg, 'The Child's Right to an Open Future' in William Aiken and Hugh LaFollette (eds), *Whose Child? Children's Rights, Parental Authority, and State Power* (Rowman and Littlefield, 1980) 124. The notion of a child's right to an open future has, however, been criticised as 'self-contradictory' and 'problematic': Lainie Friedman Ross, *Children, Families, and Health Care Decision Making* (Clarendon Press, 1998); Stephen Wilkinson, *Choosing Tomorrow's Children: The Ethics of Selective Reproduction* (Clarendon Press, 2010) 500.

⁵² See, for eg, John Harris, 'The Welfare of the Child' (2000) 8 *Health Care Analysis* 27, 29.

⁵³ For a detailed discussion of the non-identity principle and its limitations in the context, see: Taylor-Sands, above n 37, 17-20.

⁵⁴ In relation to PGD, see Human Genetics Commission, *Making Babies: Reproductive Decisions and Genetic Technologies* (January 2006) [4.13]. A more recent study of mice conceived using PGD suggests that the developing nervous system may be sensitive to embryo biopsy: Silvestre Sampino et al, 'Effects of Blastomere Biopsy on Post-natal Growth and Behavior in Mice' (2014) 29 *Human Reproduction* 1875. Regarding sperm sorting, see: HFEA, *Sex Selection: Options for Regulation*, above n 22 [107].

⁵⁵ Richard R Sharp et al, 'Moral Attitudes and Beliefs among Couples Pursuing PGD for Sex Selection' (2010) 21 *Reproductive BioMedicine Online* 838, 843-5.

⁵⁶ This was suggested by ECASRM Ethics Committee in 2004: Kalfoglou et al, above n 44, 234.

⁵⁷ See, for example: R McDougall, 'Acting Parentally: An Argument Against Sex Selection' (2005) 31 *Journal of Medical Ethics* 601; R Wong and G Gillett, 'Think of the Children: Sex Selection and Child Welfare' (2015) 22 *Journal of Law and Medicine* 751.

love.⁵⁸ By way of contrast, Fovargue and Bennett argue that NMSS is no more problematic than other forms of ART, which are ultimately based on parental preferences for a child who is biologically related or free from a particular genetic condition.⁵⁹ Moreover, there is little empirical evidence to suggest that parents who have a preference for a particular type of child will not love and accept the child they end up with. Whilst commonly held ethical concerns are valid considerations in regulating controversial practices, ‘public policy should not be based on unproven fears’.⁶⁰

The ethical debate around NMSS raises practical concerns about negative impacts on society and the child to be born and ideological concerns about how we valued life and view the role of parents. An important threshold is reached insofar as NMSS is based on *parental preference* rather than any *therapeutic purpose*. This sets it apart from other forms of selective reproduction that are currently allowed. The bioethical literature canvassing these concerns is extensive and a detailed discussion of the ethical debates is beyond the scope of this paper. The key focus of our analysis is to contrast the bioethical concerns raised in scholarly literature with the views expressed in the NHMRC’s public consultation in order to ascertain the degree to which the theoretical concerns are reinforced by broader community attitudes. The next part of this paper outlines the methodology adopted for analysing the data obtained from the 2015 public consultation before discussing some key themes that arise in relation to NMSS.

V METHODOLOGY AND ANALYSIS OF THE 2015 PUBLIC CONSULTATION

When reviewing the ART guidelines, the NHMRC was keen to ensure the Australian community had a sufficient opportunity to participate in the consultation process and invited public opinion on the proposed guidelines.⁶¹ To guide responses, the Working Committee responsible for reviewing the Guidelines, requested submissions not only on the ART Guidelines more generally, but for submissions on specific issues, including NMSS. Five case studies were developed to illustrate common scenarios that arise within the debate about whether NMSS should be permitted. Essentially, submissions were framed by the following question: *Should the current position on sex selection be relaxed, if so, what boundaries should be on the practice, and why?* In this part, we outline the methodology that was adopted to identify and select the relevant submissions from the NHMRC’s consultation website for analysis, the methods adopted for analysis of the data, and our findings following the analysis.

A Methodology

Overall, there were 217 responses made as part of the consultation process.⁶² Of these, 117 submissions (just under 54 per cent of the total submissions received by the NHMRC) were accessible to the public.⁶³ These publicly available submissions were analysed thematically for their key attitudes to NMSS. This section outlines the methods used in the project, the key

⁵⁸ Blythe, Frith and Crawshaw, above n 42. See also: Leon R Kass, *Life, Liberty and the Defense of Dignity: the Challenge for Bioethics* (Encounter Books, 2002); Francis Fukuyama, *Our Posthuman Future: Consequences of the Biotechnology Revolution* (Strauss & Giroux, 2002); Michael J Sandel, ‘The Case Against Perfection: What’s Wrong with Designer Children, Bionic Athletes, and Genetic Engineering’ (2004) 292 *The Atlantic Monthly* 50, 52.

⁵⁹ Fovargue and Bennett, above n 28.

⁶⁰ Andrea L Kalfoglour, ‘Attitudes about Preconception Sex Selection: a Focus Group Study with Americans’ (2008) 23(12) *Humans Reproduction* 2731, 235.

⁶¹ Anne Kelso, *An Invitation to Make a Submission* (15 July 2015) Australian Government: National Health and Medical Research Council <<https://www.nhmrc.gov.au/guidelines-publications/e79>>

⁶² NHMRC, above n 4.

⁶³ *Ibid.*

characteristics of the publicly available submissions, and the core themes evident within the submissions to provide support or otherwise for NMSS in Australia.

1 *Data Management and Analysis*

The 117 publicly available submissions were analysed thematically using NVivo.⁶⁴ The submissions were coded initially by categorising the author (if possible) and the core attitude of the submission to NMSS (positive, negative, or unknown). At the detailed analysis stage, the submissions were thematically coded. Two researchers worked on coding material at this stage of the project, and several submissions were cross-checked and coded by both researchers to enhance the reliability and robustness.⁶⁵

Thematic analysis drew from existing themes in academic literature as a framework for analysis. This allowed direct assessment of the research question underlying the project – whether the themes in the broader literature about NMSS were evident in public opinion, as conveyed in the submissions.⁶⁶ Using existing themes drawn from the literature formed the groundwork for analysis. However, the analysis in this project was also responsive and abductive in nature.⁶⁷ This allowed the existing literature to form a thematic scaffold of inquiry, while permitting further themes to emerge as needed from the data. This kind of axial,⁶⁸ abductive coding in the analysis stage is appropriate when working with and assessing existing thematic structures in qualitative data,⁶⁹ while also allowing full representation of the data set in the thematic framework.

⁶⁴ NVivo provides a rigorous framework with which to structure analysis: Megan Woods et al, 'Advancing Qualitative Research Using Qualitative Data Analysis Software (QDAS)? Reviewing Potential Versus Practice in Published Studies using ATLAS.ti and NVivo, 1994–2013' (2016) 34(5) *Social Science Computer Review* 597; Joy D Bringer, Lynne Halley Johnston and Celia H Brackenridge, 'Using Computer-Assisted Qualitative Data Analysis Software to Develop a Grounded Theory Project' (2016) 18(3) *Field Methods* 245.

⁶⁵ Juliet M Corbin and Anselm L Strauss, *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory* (SAGE Publications, 3rd ed, 2008); Kakali Bhattacharya, 'Coding is Not a Dirty Word' in Shalin Hai-Jew (ed), *Enhancing Qualitative and Mixed Methods Research with Technology* (IGI Global, 2015) 1.

⁶⁶ While 'thematic analysis' can be a term used too broadly in some work, here it was chosen to fit the project aims and research question. For a useful analysis of thematic work in qualitative research, see Lorelli S Nowell et al, 'Thematic Analysis: Striving to Meet the Trustworthiness Criteria' (2017) 16(1) *International Journal of Qualitative Methods* 1.

⁶⁷ *Responsive* research reflects back on emerging themes, using the researcher's knowledge, existing literature as well as the analysis process to contribute to identifying themes and concepts; Jo Reichertz, 'Abduction: The Logic of Discovery of Grounded Theory' in Antony Bryant and Kathy Charmaz (eds), *The SAGE Handbook of Grounded Theory* (SAGE, 2011) 214; Kathy Charmaz, 'Constructivist Grounded Theory' (2016) 12(3) *The Journal of Positive Psychology* 299. An *Abductive* process is one where theme emergence can be shaped and informed by existing literature and other research (that is, it is not inductive, or solely emergent from the data; nor is it deductive, solely involving the testing of existing concepts against data); Reichertz, above n 69; Stefan Timmermans and Iddo Tavory, 'Theory Construction in Qualitative Research: From Grounded Theory to Abductive Analysis' (2012) 30(3) *Sociological Theory* 167.

⁶⁸ *Axial Coding* is a strategy where categories emerge during the analysis, and are tested against the remaining data. Once concept saturation occurs, the core themes are used to analyse the remaining data, while also being sensitive to any emergent themes or outlying cases; Judy Kendall, 'Axial Coding and the Grounded Theory Controversy' (1999) 21(6) *Western Journal of Nursing Research* 743; and, more generally, see David Silverman, *Doing Qualitative Research* (SAGE, 2017) and Kathy Charmaz, *Constructing Grounded Theory: A Practical Guide through Qualitative Analysis* (SAGE, 2006).

⁶⁹ *Abductive* work is both inductive and deductive, moving flexibly from open data-led analysis, to testing existing theory or concepts. It allows researchers to reflect on themes from wider literature and check for their emergence in the data. It also allows new themes to emerge, which can then be tested and assessed against other research and theoretical work.

2 *Submission Source and Attitude to NMSS*

The 117 publicly available submissions were coded for core attitude to NMSS as either unknown, positive, or negative (see Table 1). The Review examined other aspects of ART not directly relevant to the sex selection issue, so 12 submissions did not express an opinion about NMSS. 59 per cent of publicly available submissions were positive about NMSS and supported changes to make it available in Australia (note that the positive group forms 65 per cent of the 105 submission which expressed views on NMSS).

Table 1: Attitude to NMSS by Submission

<i>Attitude to NMSS</i>	<i>Number of Submissions</i>	<i>Percentage</i>
<i>Positive</i>	68	59%
<i>Negative</i>	35	29.9%
<i>Both Positive and Negative⁷⁰</i>	2	1.5%
<i>No view on NMSS expressed</i>	12	10.3%
<i>Total</i>	117	100%

The author of each submission was identified where possible, and a distinction was drawn between submissions from individuals,⁷¹ and submissions made on behalf of an organisation. The key role of the person making the submission was coded, as outlined in Table 2.

Table 2: Submission Author

<i>Author</i>	<i>Number</i>	<i>Percentage⁷²</i>
<i>Parent/Family</i>	48	41%
<i>Father/Prospective Father</i>	3	2.5%
<i>Mother/Prospective Mother</i>	39	33%
<i>Parent (unable to determine)</i>	2	1.7%
<i>Other Family Member</i>	4	3.4%
<i>Individual Submission (Other)</i>	41	35%
<i>Academic</i>	7	6%
<i>Health Professional</i>	4	3.4%

⁷⁰ In two cases submissions were both positive and negative about allowing NMSS and a view one way or the other was not possible to determine.

⁷¹ Submissions in this category may include more than one individual author, but where the submission was not on behalf of an identified organisation.

⁷² Sub-group percentages may not total 100 per cent due to rounding.

<i>Legal Professional</i>	2	1.7%
<i>Member of Parliament</i>	3	2.5%
<i>Other Individual</i>	25	21.4%
<i>Organisation</i>	28	24%
<i>ART Provider</i>	7	6%
<i>Health Related Organisation</i>	1	0.9%
<i>Advocacy Group</i>	10	8.5%
<i>Government Agency</i>	3	2.5%
<i>Religious Organisation</i>	7	6%
<i>Total</i>	117	100%

41 per cent of the publicly available submissions identified themselves as a mother, father, parent, or other family member. One third of the total public submissions (39) were from women identifying themselves as mothers affected directly by the review, in particular by NMSS.

Other individuals identified themselves by their role, including: academic, lawyer, health professional, or Member of Parliament. This group also includes 25 submissions, which did not sufficiently identify the individual into a role or as a family member. Individual submissions, both from family or other interested individuals, made up 76 per cent of all publicly available submissions, the remaining 24 per cent from organisations. Organisations were coded by type as outlined in Table 2.

Attitudes to NMSS were, as expected, shaped by the author of the submission (Table 3), with family submissions overwhelmingly supportive of allowing NMSS in Australia.

Table 3: Attitude to NMSS by Author Type

	<i>Positive</i>	<i>Negative</i>	<i>Both Positive and Negative</i>	<i>Unable to Determine</i>	<i>Total</i>
<i>Family</i>	47	0	0	1	48
<i>Individual Submission</i>	17	19	1	4	41
<i>Organisation</i>	4	16	1	7	28
<i>Total</i>	68	35	2	12	

Other individual submissions were split more evenly between positive and negative, and submissions from organisations were more likely to be negative about NMSS. Table 4 provides a detailed breakdown of attitude by submission author/organisation. As indicated, providers of ART services are positive about NMSS, while religious organisations are negative.

Table 4: Individual and Organisation by Attitude

	<i>Positive</i>	<i>Negative</i>	<i>Both Positive and Negative</i>	<i>Unable to Determine</i>	<i>Total</i>
<i>Individual Submissions</i>					
<i>Academic</i>	4	3			7
<i>Health</i>	2			2	4
<i>Professional</i>					
<i>Legal</i>		1		1	2
<i>Professional</i>					
<i>Member of Parliament</i>		3			3
<i>Other</i>	11	12	1	1	25
<i>Individual Organisation</i>					
<i>Advocacy Group</i>		8		2	10
<i>ART Provider</i>	4		1	2	7
<i>Government Agency</i>				3	
<i>Health Related Organisation</i>		1			1
<i>Religious Organisation</i>		7			7

Advocacy groups were an interesting case (see Table 5). There were 10 advocacy submissions and 8 were negative in attitude toward NMSS. The four advocacy groups related to ‘genetics’ or ‘unborn rights’ are possibly religious in nature but were not coded as such if this was not specifically mentioned in their submissions. The 5 submissions from LGBTI and feminist groups were also negative in attitude to NMSS. The reasons presented in these cases against NMSS, related to gender discrimination and the distinction between sex and gender, and, more rarely, to concerns about the exploitation of women. These emergent themes are discussed further in the next section.

Table 5: Advocacy Groups by Type

<i>Advocacy Groups</i>	<i>Number</i>
<i>LGBTI Groups</i>	3
<i>Women’s Rights</i>	2
<i>Civil Liberties</i>	1
<i>Support and Advocacy relating to Genetics and “unborn children”</i>	4

B Thematic Analysis

This section discusses the results of the thematic analysis of publicly available submissions to the NHMRC. The three underlying themes evident in the literature were identified in part IV of this paper, as including: negative impacts on society; the welfare of the child to be born; and, the slippery slope of ‘designer babies.’ Each of these themes (and their variations) was identified in the submissions to the NHMRC Review (see Table 6). In this sense, the bioethical arguments put forward in the scholarly literature were clearly evident in the public views put forward in the submissions, as outlined below. Variations of these core themes emerged during the analysis process, reflecting the axial and abductive approach used by the research team. Additionally, we also examine the positive themes used in support of NMSS.

Table 6: Key Negative Themes by Attitude to NMSS

<i>Theme</i>	<i>Number of Submissions</i>	
	Positive	Negative
<i>Gender Discrimination</i>	6	24
<i>Sex versus Gender</i>	0	16
<i>Welfare of the Child: Commodification</i>	0	25
<i>Welfare of the Child: Right to an ‘open future’</i>	4	4
<i>Slippery Slope</i>	12	11
<i>Sanctity of Life</i>	0	15

1 *Negative Impacts on Society*

Key themes against NMSS emerged from our analysis of the submissions, including: issues of gender discrimination (primarily of selecting one sex over another, reflecting presumed and perceived cultural values), of valuing sex over gender, and issues of gender essentialism.

(a) Gender Discrimination

Gender discrimination was raised to support negative views of NMSS in 24 submissions, and mentioned as a concern in six submissions, which were in favour of NMSS. Those opposed perceived sex selection as fundamentally discriminatory.

In summary, if sex selection for any non-medical reasons were available it would perpetuate and reinforce rigid ideas about gender roles - the idea that each sex must act, think, behave and be treated in distinctly different ways. So instead of moving toward a society in which women and men had the same life prospects, we would go backwards to one in which being male or female was restrictive, limiting, proscriptive, and defining. This is unacceptable. *Submission 127 (Other Individual: Negative)*

Sex selection is founded on gender stereotypes and strong parental expectations. These should be rejected as being harmful to children. *Submission 202 (Advocacy Group: Negative)*

Interestingly, this concern about gender discrimination was sometimes framed in ways that could itself be viewed as supporting rigid gendered views:

If parents are allowed to choose the sex just because ... of their preferences ... and without any real or pressing reasons, there could be longer term problems in the future especially if one sex is substantially selected over the other, e.g. Too many males may lead to a higher rate of increase in violent crimes and assault, while an excess of females could lead to over exploitation [sic] of female related industries like beauty and fashion industries. *Submission 121 (Other Individual: Both Positive and Negative)*

For submissions that were mostly in favour of NMSS, gender issues were occasionally raised as a concern and reason for close future monitoring:

If there is clear evidence that sex selection is leading to discrimination against girls or an overall gender imbalance (data that we currently have no access to because the practice is occurring off-shore) or is otherwise detrimental in its impact then this issue should be re-visited. *Submission 120 (Academic: Positive)*

(b) Sex Versus Gender

Sixteen submissions raised concern that NMSS is the manifestation of gender selection, rather than sex selection. Submissions commonly treated ‘sex’ and ‘gender’ as synonymous, rather than treating them as analytically distinct. Further, this emergent theme moves beyond the idea of discrimination on the basis of gender and into new territory around more recent recognition of intersex and transgender rights. It could be seen as representing the core of a more ‘progressive’ critique of NMSS.

Sex selection is based on a fundamental misconception, that selecting sex is the same as selecting gender. *Submission 136 (Academic: Negative)*

The existence of both intersex and transgender populations demonstrates flaws associated with sex selection technologies: inherent assumptions that sex characteristics are unambiguous, and that sex classification predetermines future gender identity. *Submission 119 (Advocacy: Negative)*

Sex selection, in effect, constitutes gender selection. In choosing specific genitalia that pertain to a future person one is, in fact, selecting a set of normative traits or behaviours (i.e. ‘gender’) that are presumed to be oppositional and complementary, and in turn to correlate with one of two biological sexes. *Submission 204 (Academic: Negative)*

(c) Welfare of the Child

Negative arguments in this thematic group fell primarily into two categories: that the child should not become a commodity or be ‘commercialised’ (reflecting the wishes of the parents); and that the child has a ‘right to an open future,’ free from predetermined influence and expectations. In accordance with one of the leading bioethical arguments put forward in the literature, fundamental here is the idea that the welfare of the child should be paramount.

(i) *Commodification*

Concern was raised that NMSS is practiced simply because parents wish for a child of a particular sex. This was not a concern generally raised by parents making submissions, but rather by organisations and other experts.

The most powerful reason why the prohibition for NMSS is reasonable is due to the idea that parental love is unconditional, that a child is not a product but rather a human being, equal in worth whatever his or her sex. *Submission 64 (Religious Organisation: Negative)*

It is essential for Australia to ensure that children will be born into a family that will nurture and support them. Commoditising children through NMSS cannot do that and will leave the child questioning whether their parents are there to support them or whether they were created to support their parents.⁷³ *Submission 182 (Religious Organisation: Negative)*

Arguments concerning the commodification of children were often interrelated with ‘slippery-slope’ arguments that NMSS was opening a door to ‘designer babies.’ Commodification of children was raised in nine submissions, and the slippery slope argument appeared in 14. Six submissions (all negative) raised both issues, and these submissions were all from organisations or experts.

(ii) *Welfare of the Child / Right to an Open Future*

Arguments based on the welfare of the child were found in 25 submissions, all of which were negative in relation to NMSS, and none of which were from family members. These arguments focused on the child’s interests as paramount, and often referred to embryos and unborn children as having the same interests and protections as children.

Children are always the most vulnerable. They have no choice in the decisions their parents, the clinics, the donor and the legislators make in regard to them. The least we can do is provide them with the utmost protection to ensure that they themselves have the ability to retain their own full autonomy and that their flourishing is not adversely affected by the decisions of these others. *Submission 116 (Academic: Negative)*

Overall, allowing parental choice for non-medical reasons would not necessarily serve the best interests of the parents, would be unjust to the child to be born (or not born) *Submission 209 (Religious Organisation: Negative)*

The term ‘open future’ was mentioned explicitly by eight submissions, half of which went on to critique it. Only four submissions used this specific argument to prevent NMSS.

The autonomy of the parent should never trump the dignity of the child. In both of the provided scenarios the parent’s misplaced desire to control the natural process of reproduction has damaged their children. Parents do not have a right to put their own desires and needs before the health and wellbeing of their children. The principle of autonomy is not supreme and must be subject to the rights of children,

⁷³ ADF International, Submission No 182 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 17 September 2015.

who are the more vulnerable party and therefore unable to exercise their autonomy. *Submission 188 (Religious Organisation: Negative)*

The idea of an open future was critiqued by four of the eight submissions mentioning it directly. These were all from positive submissions and sought to reframe the idea of ‘open future’:

How is selecting gender disrespectful to the child's right to an "open future"? If there is concern, a compulsory family balancing course or counselling specifically relating to sex selection would educate parents and address the any parental expectations of a child of a specific gender. *Submission 72 (Mother: Positive)*

As long as one loves the child as end, and gives the child an open future and a good life, having reasons to have that child is perfectly ethically acceptable. *Submission 126 (Individual Submission: Positive)*

While ‘open future’ is used widely in academic literature, it was not commonly seen in the publicly available submissions, and when it was mentioned, was critiqued in only half of the cases.

(d) Slippery Slope Toward ‘Designer Babies’

While the slippery slope argument pervades academic literature, it was not a common concern in the public submissions. Twenty-three submissions raised the argument, but only eleven of these were negative, and all came from submissions of those in the Individual Submission or Organisation group. These eleven submissions presented the slippery slope argument as a basis for a fast track to other genetic manipulations:

The current ban on sex-selection for social reasons in Australia must be maintained. Sex selection is eugenics in action. [...] ‘Medical reasons’ can easily become a slippery slope for a whole host of insignificant conditions that might be tested with PGD on an embryo. This must be absolutely prohibited, and any breaches criminally punished. *Submission 212 (Advocacy Group: Negative)*

Finally, allowing parents to select the sex of their child is a large step onto the slippery slope towards a “designer child”. *Submission 182 (Religious Organisation: Negative)*

Further, the idea that children are a ‘gift’ and should be free from any artificial genetic manipulation was seen in the submissions. Concern was raised that shaping a child’s sex commodifies children and violates the essential quality of unconditional acceptance.

The increasing ability to control and commercialize childbearing will fundamentally transform parenting. A commitment to unconditional love is a core value of having and raising a child. Parents should be ready to accept their children as they are, not what they want them to be. If the culture shifts to accept this high degree of control over a child’s sex, it may damage the fundamental bonds between parents and children. *Submission 188 (Religious Organisation: Negative)*

Twelve of the 23 submissions, which raised the slippery slope theme, went on to refute the argument (seven of these positive submissions were from mothers). These critiques were usually on practical grounds, such as by raising limitations of current technology, or by distinguishing sex selection from other ‘designer’ characteristics:

Gender selection isn't shallow or superficial like 'designing' babies, it's about emotions and relationships missing from their lives, not hair or eye colour. It is hard enough to get a healthy embryo at the end of an IVF cycle let alone testing for characteristics. It is a completely separate topic and they should never be compared. *Submission 17 (Other Family Member: Positive)*

Currently, the technology to create an embryo with specific characteristics does not exist to the public anywhere in the world. This is a different argument to allowing families to do GS for family balancing. Gender selection creates embryos using the couple's existing genes. There is no control over the characteristics of these embryos, nor is there control over making them a specific gender. *Submission 28 (Health Professional: Positive)*

Both submissions 17 and 28 are examples of the tendency for participants in the debate to conflate 'sex' with 'gender'. This reveals potential problems in the measurement of attitudes toward NMSS, as some submissions more accurately express a desire for 'gender' selection.

There were also several arguments against the slippery slope, which advocated instead for a just society, which would prevent such eugenics, or for the use of legal regulation to prevent abuse.

The slippery slope: We do not believe that gender selection for family balancing is genetic engineering. We believe that it is possible for a mature society to distinguish between gender selection and preferential selection of criteria in society and to regulate accordingly. *Submission 199 (ART Provider: Positive)*

If the [main] reason is that people are concerned Sex Selection will lead to allowing testing to take place for other characteristics such as height, intelligence and sporting prowess then put restrictions regarding these issues. *Submission 20 (Other Individual: Positive)*

Again, the 'slippery slope' was not as commonly relied on as is suggested by the wider literature. Additionally, 'eugenics'-based arguments were used specifically in only seven submissions, and in three of these, it was distinguished or critiqued in some way.

There is a distinction between state-mandated eugenics and the personal right to seek better reproductive outcomes within a family. *Submission 218 (ART Provider: Positive)*.

2 *Other Negative Themes*

(a) Sanctity of life

Sanctity of life arguments based on religious and moral reasons were used in 15 submissions to argue against NMSS (and ART more broadly). Submission 186 (*Religious Organisation, Negative*) states: 'the life of each human embryo is to be considered inviolable', representing the essence of this type of submission. For these submissions, objections to interference with embryos in any way that may cause them to be 'abandoned' underlies a negative attitude to NMSS:

Methods of sex selection that take place after fertilisation are additionally abhorrent as they necessarily involved the wanton destruction of a human embryo merely because it is male or female. *Submission 219 (Religious Organisation, Negative)*

This idea can be framed specifically in relation to sex:

To discard a human life, including nascent human life in the form of an embryo, just because it is one sex and not another is, in my view, morally repugnant. The door, to open up such options, should remain firmly closed. *Submission 211 (Member of Parliament, Negative)*

Overall, sanctity of life reasons were not explicit in the majority of submissions, even in negative submissions, although they underlie many of the negative responses discussed in this section. Interestingly, religious organisations tended to attempt broader arguments against NMSS, without mentioning foundational religious principles.

3 *Positive Themes*

Themes of parental autonomy, gender desire and family balancing, and the positive use of existing technology emerged in support of NMSS (see Table 6). Harm minimization was also a common theme. The argument that NMSS is already in use overseas, forcing Australians to access it offshore was highlighted as a reason to regulate, rather than restrict, NMSS. Many positive submissions were also from parents who had either used NMSS personally or wanted to do so.

Table 7: Key Positive Themes by Attitude to NMSS

<i>Theme</i>	<i>Number of Submissions</i>	
	Positive	Negative
<i>Family/Gender Balancing</i>	42	15
<i>Freedom of Choice</i>	38	0
<i>Parental Autonomy</i>	37	0
<i>Gender Desire</i>	42	0
<i>Harm Minimisation</i>	15	5
<i>NMSS Already Available Overseas</i>	54	5

Table 7 demonstrates that few negative submissions discussed these positive themes, even to refute them, other than the issue of ‘family balancing’ or ‘gender balancing’ and NMSS being available overseas.

(b) Reproductive Autonomy

NMSS was presented as harming no one and being an issue in which individuals should choose whether to access NMSS or not. Submissions were parent-centric in so far as highlighting that, parents should be free to choose the gender of their children (within boundaries, as seen below).

Australia prides itself on being a nation with freedom of choice and autonomy. A couple wanting to select the gender of their next child in order to balance the genders in their families deserves this reproductive freedom. *Submission 28 (Health Professional: Positive)*

I don’t think that is fair that a government can dictate what medical procedures can be done in Australia, and then not have enough support to assist people that may

suffer due to this choice. This will not affect anyone else but the individual family.
Submission 153 (Mother: Positive)

While arguments about autonomy are often countered by arguments prioritising the rights of the child instead, this was also addressed by some positive submissions, which argue that all children will be equally valued.

We will love our baby more than anything regardless of gender, but all human beings should have the right to choose. *Submission 70 (Mother: Positive)*

You adore (or should adore) the children that you have, whether they are your preferred gender or not, whether they have a disability or not and whether they fit your idea of a gender stereotype or not. There is absolutely no reason not to allow gender selection in Australia so that couples who have a strong enough preference for gender can choose it. *Submission 76 (Individual: Positive)*

(c) Family Balancing and Gender Desire

Family Balancing was discussed in 57 submissions, 42 of these were positive. Gender desire was a theme in 42 of the positive submissions.

There are a range of circumstances in which non-medical sex selection should be deemed acceptable, family balancing is at the top of that list. I am proud of the boys we have and love them all the same but will never feel complete without a daughter’
Submission 142 (Father: Positive)

I believe that gender selection should be allowed for family balancing purposes. I know many people who have several children of the same gender and feel very strongly that they would like to balance their families with a son or daughter of the opposite sex. *Submission 100 (Mother: Positive)*

I never would have thought in my wildest dreams so much hurt, pain and grief could come from such a thing as gender desire. You can’t know that sort of pain unless you have experienced it. And it is most definitely not a choice! *Submission 9 (Mother: Positive)*

Forty submissions specifically mentioned gender desire as being an issue for their own family. Thirty of these parents expressed a desire for a female child, and ten for a male child. Four submissions were from mothers who had attempted NMSS, with three successfully conceiving a child of their desired sex. Three of these women had been to the United States, and one to Thailand. A further 21 parents indicated they were currently willing to travel overseas to attempt NMSS.

Several mothers said they had experienced difficulty coming to terms with the birth of a child when they had hoped for a child of the opposite sex.

As a mother of 3 healthy sons... my heart yearns for a daughter. Each time I fell pregnant and heard those words it's a boy my heart broke... My boys are wonderful I love them to bits but every time I see a little girl my heart aches... *Submission 95 (Mother: Positive)*

I have anxiety attacks after being in the girl section of children’s clothing, I am on medication and have to psych myself up to attend friends’ and family’s little girls’ birthday parties. *Submission 59 (Mother: Positive)*

I long for a mother/daughter relationship and the opportunity to parent the opposite sex. It has affected my life in such a negative way, that I was diagnosed with depression and have been seeing a psychologist. *Submission 9 (Mother: Positive)*

As the comments above (and indeed a number of the survey responses) reflect, many respondents conflate biological sex with gender. This reinforces the concern raised in the literature about non-medical sex selection promoting gender essentialism.

(d) Harm Minimisation

These arguments concern the idea that NMSS would be safer if undertaken in Australia, as opposed to offshore. Twenty submissions mentioned harm minimisation specifically, and fifteen of these were positive:

This is the most compelling argument for allowing sex selection in Australia and it is really a harm minimisation argument. If cross border travel for sex selection is inevitable then we would be better off having a system of controlled sex selection here in Australia where we could ensure sterile and healthy processes as well as appropriate counselling, regulated donation and record keeping. *Submission 120 (Academic: Positive)*

However by legalising this here, it does allow Australian women the choice to access it if they so choose, safely in their own country, with their own Doctors, without the added stress and financial burden of overseas travel. *Submission 201 (Mother: Positive)*

The next part contrasts the themes extracted from our data analysis with the key concerns about NMSS raised in the bioethical literature and discusses the implications of our thematic analysis for regulating NMSS in the future.

VI DISCUSSION

Overall, thematic analysis reveals that the views outlined in the submissions indicate a permissive approach to NMSS, rather than restrictive. The majority of respondents (59 per cent) held that the moratorium should be lifted, although the authors note that the permissive approach identified in the submissions publicly available for our analysis may have been outweighed by those that were not publicly available. However, what seems to have guided the decision to continue the moratorium on NMSS, is that there is limited research on whether public opinion supports such practices. As outlined in the 2017 edition of the NHMRC Guidelines:

Following lengthy consideration, and the application of the guiding principles in Chapter 2 of these Ethical Guidelines, AHEC concluded that in some circumstances, sex selection for non-medical purposes is consistent with the guiding principles. AHEC’s majority view is that there is an ethical difference between a desire to introduce variety to the existing sex ratio of a family and the desire to design the sex of the offspring based on the preferential selection of a particular sex due to an individual’s or a couple’s cultural or personal bias, influences or desires.

At the same time, AHEC acknowledges that the motivations of those seeking to use sex selection for non-medical purposes cannot be easily identified. What is presented as a desire to introduce variety could conceal cultural and/or personal biases.

AHEC also recognises that many of the issues surrounding ART are as much social and political as they are ethical. With any controversial practice, society’s readiness to accept a practice is a

relevant and important consideration. At the time of publication [2017], there is limited research into the question of whether Australians support the use of sex selection for non-medical purposes.⁷⁴

Our finding, from the analysis of the available submissions, that most of those respondents adopt a permissive approach to NMSS is worthy of discussion, as two prior studies from 2011 indicated public reluctance towards NMSS.⁷⁵ Although the data analysed is only that of the publicly available submissions and therefore has limitations in its general applicability, it does at least indicate the presence of a true parental desire to access NMSS, even if this cannot be regarded as representative of public opinion more generally. Notably, as outlined above, we discerned three key themes from the literature, including: negative impacts on society; the welfare of the child to be born; and the slippery slope towards ‘designer babies’. The overlaps between these themes and the analysis of the data undertaken as part of this research, is outlined below. It was clear that these themes were present amongst the submissions. However, given that 59 per cent of respondents advocated for the availability of NMSS, the ideology outlined in some of the scholarly literature – that the moratorium on NMSS is warranted – is at least a challenged by the views expressed as part of the consultation process.⁷⁶

A *Negative Impacts on Society*

As outlined above, concerns regarding the wider societal impact that might result from allowing NMSS, stem from the idea that such practices may alter the sex ratio of Australia’s population, and that NMSS reinforces binary gender norms.⁷⁷ The expectation that males would be favoured over females is nearly universal amongst scholars who consider such objections.⁷⁸ However, our analysis revealed that this was not substantiated by the submissions, with parents more commonly expressing desire to select in favour of a female child. Whilst ideologies of male supremacy were not evident in the submissions, preference for a daughter was, in some instances, based on gender norms. However, this is not necessarily unique to NMSS, as it is also possible that naturally conceived children could be commonly subject to a ‘gendered’ childhood experience.⁷⁹ Many parents in favour of NMSS seem to conflate biological sex with gender, giving support to the gender essentialist critique raised by feminist scholars.

Although the submissions made as part of the public consultation process are not necessarily representative of the general population, in terms of how prospective parents might exercise their choice in favour of one sex over another, concerns about the effect of NMSS on the sex ratio of Australia’s population, might be addressed by regulation that permits NMSS in circumstances where it is used for family balancing. This was certainly one view outlined in the NHMRC’s call for submissions.

Our analysis revealed that NMSS was considered to be justified by some who made submissions when used only for ‘family balancing’ after parents had at least two prior children

⁷⁴ NHMRC, above n 1, 71.

⁷⁵ Gab Kovacs et al, above n 26; Rebecca Kippen, Ann Evans and Edith Gray, ‘Australian Attitudes Toward Sex Selection Technology’ (2011) 95 *Fertility and Sterility* 1824.

⁷⁶ Tamara Browne, ‘How Sex Selection Undermines Reproductive Autonomy (2017) 14 *Journal of Bioethical Enquiry* 195; Taylor-Sands, above, n 37; Tereza Hendl, ‘A Feminist Critique of Justifications for Sex Selection’ (2016) *Journal of Bioethical Enquiry* 89; Chalmers, above n 42, 157.

⁷⁷ Kalfoglou, above n 60.

⁷⁸ Bratislav Stankovic, “‘It’s a Designer Baby!’” Opinions on Regulation of Preimplantation Genetic Diagnosis’ (2005) *UCLA Journal of Law and Technology* 28.

⁷⁹ Taylor-Sands, above n 3, 7.

of the same sex.⁸⁰ Respondents perceived NMSS for this purpose as ethically acceptable, which contradicts some of the common viewpoints outlined in the scholarly literature. This particular disconnect – between the views put forward in the public submissions and scholarly literature – should be noted and considered by regulators and policy makers moving forward, if the issue of NMSS is again subject to review.

B *Welfare of the Child*

The two key concerns of commodification and harm raised in academic literature were also present in many of the submissions. Many of the submissions outlining such concerns also overlapped with our first category above, concerning the perceived negative impact on society. Thus, Kant’s dictum of treating children as a means, rather than as a means to an end, is clearly evident within a number of the submission documents.⁸¹ A number of submissions premised desire for a daughter on a perceived mother/daughter bond that would be manifestly different from a mother/son bond. Additionally, we also identified a narrative within a number of submissions, that a mother suffering depression and/or anxiety as a result of having an ‘unbalanced’ family, would have such symptoms minimised by accessing NMSS. Such perspectives have certainly been put forward by some prospective parents who have sought to utilise NMSS in Australia. In the case of *JS and LS v Patient Review Panel*,⁸² a couple who wished to have a child of one particular sex following the earlier death of their child of the same sex, had put forward evidence to a tribunal to argue that utilising selective reproductive techniques to select the sex of their child would help them to move forward and balance their family. The Victorian Civil and Administrative Tribunal refused the couple’s request on the basis that they were motivated entirely by their own interests in conceiving a child of a particular sex, rather than prioritising the welfare of a prospective child who may be born following the use of the technology.⁸³ Notably, however, it has been argued that the desire to balance one’s family or conceive a child of one particular sex, does not equate to the outcome that the prospective child’s welfare will be compromised, or that the child will be regarded as a commodity.⁸⁴

A factor that is often used as a basis to support a more permissive approach to NMSS and as a basis to overcome some of the objections centered on the concern for the welfare of the child, is that individuals have a right to bodily autonomy and to determine the course of their own reproductive decisions. Such perspectives were outlined in many of the submissions and reflect liberal arguments underpinned by the harm principle, that reproductive decision-making should be unrestricted except for when there is a risk of harm to others.⁸⁵ The bioethical literature in the field of selective reproduction often adopts such liberal reasoning.⁸⁶ Nevertheless, a commonly adopted view among scholars is that choosing the sex of a child for social reasons represents a shift from a reproductive decision that prioritises the welfare of the child, towards

⁸⁰ Jayne, *Submission No 108*, 11, 124, 14, 143, 151, 153, 17, 205, 214, 90, 3

<https://consultations.nhmrc.gov.au/public_consultations/submissions/EGART/4873>.

⁸¹ This argument is, for example, outlined by Tamara Browne, above n 76.

⁸² [2011] VCAT 856.

⁸³ See Smith and Taylor-Sands, above n 8, 139-153.

⁸⁴ *Ibid.*

⁸⁵ Jonathan Berkowitz and Jack Snyder, ‘Racism and Sexism in Medically Assisted Conception’ (1998) 12 *Bioethics* 27.

⁸⁶ See, for eg, Malcolm K Smith, *Saviour Siblings and the Regulation of Assisted Reproductive Technology: Harm, Ethics and Law* (Routledge, 2015).

a parental preference for a particular ‘type of child’.⁸⁷ Ultimately, however, this was not a dominant view put forward in the submissions.

C *Slippery Slope Concerns*

In contrast to the notion of reproductive choice and liberal reasoning, is the ‘slippery slope’ argument.⁸⁸ While respondents did not move beyond the realms of NMSS in terms of expressing their desire to use embryo selection technologies to select additional traits, such as hair or eye colour, if NMSS were permitted in Australia, and ultimately supported by the notion that reproductive autonomy should prevail, there may be concern that such arguments will also be used to support selection on the basis of other genetic traits in future offspring.⁸⁹ This is certainly a view outlined in the scholarly literature. Thus, as Sandel cautions in relation to the use of PGD, ‘what began as an attempt to prevent a genetic disorder now beckons as an instrument of improvement and consumer choice’.⁹⁰ Notably, however, these views were not generally evident in the submissions we analysed as part of this research. Although this might be because the public consultation was focused on the circumstances, if any, when NMSS might be considered ethically permissible (thus directing submissions towards this issue only), it also potentially demonstrates that the slippery slope concerns are not reflected in the views of the public more generally. This potentially suggests that there is a disconnect between the views and concerns put forward in the scholarly literature concerning this particular issue and the views of the public more generally. If slippery slope concerns are not guiding public debate concerning NMSS, this particular finding is worthy of further research given that it is often the slippery slope argument that is put forward as the most persuasive basis for a restrictive regulatory approach concerning the issue of NMSS.⁹¹

VII CONCLUSION

This study highlights a potential shift in perception towards the issue of NMSS. The submissions analysed as part of our study demonstrate a permissive stance towards NMSS, running contrary to many of the views outlined in the scholarly literature, which generally adopt a restrictive approach. This disconnect justifies further exploration of the role that public opinion might have on the future regulatory direction of NMSS, particularly in terms of the future direction adopted by the NHMRC concerning the moratorium on NMSS.

The overarching permissive approach identified in the publicly available submissions is noteworthy, suggesting that many of the scholarly arguments against NMSS are potentially unsubstantiated. We outlined the key ethical concerns from the scholarly literature, including: potential negative impacts on society; the impact on the welfare of prospective children selected on the basis of their sex; and the slippery slope towards ‘designer babies’. Our analysis reveals that the views outlined in the publicly available submissions differ from those outlined in the scholarly literature, with the views outlined in the submissions prioritising the positive arguments that flow from a permissive approach. These include concepts of parental autonomy, family balancing and the positive use of available technology. Although the views expressed in the submissions are not necessarily reflective of wider public opinion on the topic of NMSS, the overwhelming support in favour of lifting the moratorium suggests that there may be a shift

⁸⁷ Taylor-Sands, above, n 37, 196.

⁸⁸ Taylor-Sands, above n 2.

⁸⁹ Ibid 8.

⁹⁰ Sandel, above n 58.

⁹¹ See Taylor-Sands, above n 3.

in public opinion towards a more permissive approach on the topic. Hypothetical concern expressed in the literature, that NMSS would lead to a skewed sex ratio due to a perceived preference for male children, was not evident in the submissions, despite the argument being present in the bioethical literature. However, one issue uncovered in our study is that there was a tendency in both the literature and submissions to conflate ‘sex’ with ‘gender’ when expressing a preference for a prospective child. If public and academic discussion around NMSS continues to treat sex and gender as synonymous, there is a risk that regulation will continue to reproduce beliefs that are disconnected from the diversity of gendered experiences.⁹²

While NMSS is fraught with legitimate bioethical concern, if there is indeed a shift in public perception concerning the ethical acceptability of NMSS, then this might be significant in shaping future debate and ultimately, future regulation. As discussed by Taylor-Sands, ongoing monitoring of families who wish to undertake NMSS is crucial to advance empirical evidence in this area.⁹³ And as the AHEC points out, ‘with any controversial practice, society’s readiness to accept a practice is a relevant and important consideration’.⁹⁴ Perhaps a more nuanced approach to regulation that provides parental support rather than blank prohibition is justified.

Annexure A – Public Submissions Analysed

ADF International, Submission No 182 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 17 September 2015

Alana Redacted, Submission No 3 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Alastair Lawrie, Submission No 213 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 17 September 2015

Amanda Rooks, Submission No 94 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Amy Green, Submission No 20 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 21 July 2015

Anita Stuhmcke, Jenni Millbank and Isabel Karpin, Submission No 120 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 11 September 2015

Australian Catholic Bishops Conference, Submission No 186 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 17 September 2015

⁹² Laurel Westbrook and Aliya Saperstein, ‘Rethinking the Measurement of Sex and Gender in Social Surveys’ (2015) 29 *Gender and Society* 536.

⁹³ Taylor-Sands, above n 3, 16.

⁹⁴ NHMRC, above n 1, 71.

Australian Christian Lobby, Submission No 188 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 17 September 2015

Australian Medical Association, Submission No 93 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Bianca Redacted, Submission No 40 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Bree Redacted, Submission No 9 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Bronwyn Redacted, Submission No 72 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 2015

Canberra Fertility Center, Submission No 104 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 11 September 2015

Carly Redacted, Submission No 205 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*.

Catholic Health Australia, Submission No 207 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 17 September 2015

Christa Redacted, Submission No 171 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Cindy Flores, Submission No 35 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*.

City Fertility Centre, Submission No 102 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 17 September 2015

Coalition for the Defence of Human Life, Submission No 103 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 16 September 2015

Cormac Nagle, Submission No 137 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. September 2015

Damian Adams, Submission No 116 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission* September 2015

Debra Redacted, Submission No 98 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Deanne Redacted, Submission No 100 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Department of Health, Submission No 101 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. August 2015

Denise Redacted, Submission No 17 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Donor Conception Support Group of Australia, Submission No 83 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Elizabeth Hockings, Submission No 6 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Emma Bolcina, Submission No 39 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Emma Evans, Submission No 150 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Family Voice Australia, Submission No 219 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 24 September 2015

FINRRAGE (Australia), Submission No 212 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 17 September 2015

Genea Ethics Committee, Submission No 218 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. September 2015

Genea Ltd, Submission No 217 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 2015

Greg Donnelly, Submission No 211 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 17 September 2015

Hope Kadouri, Submission No 141 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Human Genetics Society of Australasia, Submission No 194 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 17 September 2015

IVF Australia, Submission No 199 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Jacqueline Campbell, Submission No 220 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Jayne Redacted, Submission No 108 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Jay Davies, Submission No 27 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Jean Fazzolare, Submission No 4 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Jessica Mitchell, Submission No 76 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Jennifer Germon, Submission No 204 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Jenna Redacted, Submission No 153 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Joe Bullock, Deborah O'Neill and Chris Ketter, Submission No 125 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Julian Savulescu, Submission No 126 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Julie Velzen, Submission No 48 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Kamal Heer, Submission No 107 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Karen-Anne Wong, Submission No 183 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Kathryn Redacted, Submission No 75 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Kelley Irvine, Submission No 23 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Kelso, Anne, *An invitation to make a submission*, (15 July, 2015) Australian Government: National Health and Medical Research Council <<https://www.nhmrc.gov.au/guidelines-publications/e79>>

Kerri McKenzie, Submission No 12 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Lenetta Redacted, Submission No 95 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Linda Stevens, Submission No 51 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Malcolm Smith, Submission No 198 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 17 September 2015

Mandy Redacted, Submission No 63 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Martine Prunty, Submission No 28 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Megan Redacted, Submission No 70 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Meghann Redacted, Submission No 11 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Melanie Petrovski, Submission No 201 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Melbourne IVF, Submission No 208 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 17 September 2015

Micah Beveridge, Submission No 41 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Michelle Redacted, Submission No 10 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Michelle Taylor-Sands, Submission No 161 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Michelle Wratten, Submission No 192 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Minister for Health, *Report of the Review of the Assisted Reproductive Treatment Act 1988 (SA)* (2017)

Naomi Conway, Submission No 16 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Natasha Redacted, Submission No 66 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

National Health and Medical Research Council, 'An invitation to make a submission' (2015)

National Health and Medical Research Council (NHMRC) (2015) *Ethical Guidelines on the Use of Assisted Reproductive Technology in Clinical Practice and Research: Public Consultation - 2015*.

National Health and Medical Research Council (NHMRC) (2007) *Ethical Guidelines on the Use of Assisted Reproductive Technology in Clinical Practice and Research*

National Health and Medical Research Council (NHMRC) (2017) *Ethical Guidelines on the Use of Assisted Reproductive Technology in Clinical Practice and Research*

National LGBTI Health Alliance, Submission No 105 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 24 September 2015

Nick Goiran and Peter Abetz, Submission No 210 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

NSW Council for Civil Liberties, Submission No 216 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 17 September 2015

New South Wales Gay and Lesbian Rights Lobby, Submission No 189 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 17 September 2015

Office of the Australian Information Commissioner, Submission No 191 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 17 September 2015

Organisation Intersex International Australia Limited, Submission No 119 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 13 September 2015

Patrick Casanova, Submission No 26 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Penelope Redacted, Submission No 148 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Phil Tsafkopoulos, Submission No 142 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. August 2015

Pippa Sweet, Submission No 24 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

PIVET Medical Centre, Submission No 57 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*, 26 August 2015

Plunkett Centre for Ethics, Submission No 64 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*, 29 August 2015

Prue Redacted, Submission No 151 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Queensland Fertility Group, Submission No 89 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Raelene Redacted, Submission No 59 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Reproductive Technology Council, Submission No 99 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. September 2015

Rhiannon Redacted, Submission No 84 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Robert Phelps, Submission No 127 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 17 September 2015

Ryan Tonkens, Submission No 152 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 2015

Sara Redacted, Submission No 12 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*.

Sharon Scown, Submission No 15 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Selwyn Kadouri, Submission No 203 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Stephen Saunders, Submission No 49 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*.

Submission No 65 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Submission No 80 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Submission No 90 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Stephen Page, Submission No 91 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Submission No 106 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Sonia Allan, Submission No 117 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*.
13 September 2015

Stephen Wilkinson, Submission No 146 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Submission No 121 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Submission No 124 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Submission No 133 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Submission No 147 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Submission No 190 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Submission No 193 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Submission No 214 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Tamara Browne, Submission No 136 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Tanya Reiss, Submission No 97 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Tara Peoples, Submission No 132 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 17 September 2015

Tasmanian Baptist Churches, Submission No 209 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 17 September 2015

Teegan Stewart, Submission No 85 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Tegan Redacted, Submission No 179 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Tereza Hendl, Submission No 206 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Toni Redacted, Submission No 78 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Unborn Children’s advocacy Network, Submission No 52 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*, 16 September 2015

Wendy Rix, Submission No 143 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Wendy Rogers, Submission No 71 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Women’s Bioethics Alliance, Submission No 202 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*. 17 September 2015

Yasmin Redacted, Submission No 44 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*

Zoe Wheeler, Submission No 68 to National Health and Medical Research Council, *Draft Ethical guidelines on the use of assisted reproductive technology in clinical practice research submission*