# In the Context of Mitochondrial Replacement Therapy, Does Genetic Manipulation Produce Triparental Children in the Eyes of the Law?

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In the context of in vitro fertilization (IVF), when preimplantation genetic diagnosis reveals that the egg donor carries a mitochondrial mutation, the mutation may be neutralized with the introduction of a third party's healthy genetic material. This technique is called mitochondrial replacement therapy (MRT). If a healthy embryo emerges from MRT, it will have a triple genetic background and, thus, three biological parents. However, in the context of MRT, does genetic manipulation produce triparental babies in the eyes of the law? Although MRT has been legal in the United Kingdom (UK) since 2015, MRT falls under the prohibited activities of Canada's 2004 Assisted Human Reproduction Act (Act). Nevertheless, we propose to provide an answer to our question for the Canadian context, should MRT one day become legal. MRT challenges our binomial model of conception by raising complex ethical, legal and social issues (ELSI). In our study, we first explain the science behind MRT and discuss the ethical issues raised by this technology. Second, after reviewing the law in both the UK and Canada, we argue that biology itself is not sufficient to establish parenthood. Third, while current legal frameworks of family law mostly remain biparental, our study shows that two Canadian provinces derogate from this principle. Thus, not without criticizing the Act, we conclude that MRT can produce tri-parenthood under law, in the provinces that allow for more than two parents. In our modern Canadian society, assisted reproductive technologies (ARTs) participate in the redefinition of our vision of the nuclear family.

Dans le cadre de la fécondation in vitro, lorsque le diagnostic génétique préimplantatoire révèle que la donneuse d'ovules est porteuse d'une mutation mitochondriale, cette mutation peut être neutralisée par l'introduction de matériel génétique sain d'un tiers. Cette technique est appelée thérapie de remplacement mitochondrial (TRM). Si un embryon sain émerge de la TRM, il aura un triple bagage génétique et, donc, trois parents biologiques. Toutefois, dans le contexte de la TRM, la manipulation génétique produit-elle des bébés triparentaux aux yeux de la loi ? Bien que la TRM soit légale au Royaume-Uni depuis 2015, la TRM relève des activités interdites par la Loi sur la procréation assistée (Loi) de 2004 au Canada. Néanmoins, nous proposons d'apporter une réponse à notre question pour le contexte canadien, si la TRM devient un jour légale. Le TRM remet en question notre modèle binomial de conception en soulevant des questions éthiques, juridiques et sociales complexes. Dans notre étude, nous expliquons d'abord la science derrière la TRM et discutons des enjeux éthiques soulevées par cette technologie. Deuxièmement, après avoir examiné la loi au Royaume-Uni et au Canada, nous soutenons que la biologie en soi n'est pas suffisante pour établir la parenté. Troisièmement, alors que les cadres juridiques actuels du droit de la famille restent le plus souvent biparentaux, notre étude montre que deux provinces canadiennes dérogent à ce principe. Ainsi, non sans critiquer la Loi, nous concluons que la TRM peut produire une triparentalité en vertu de la loi, dans les provinces qui autorisent plus de deux parents. Dans notre société canadienne moderne, les technologies de reproduction assistée participent à la redéfinition de notre vision de la famille nucléaire.

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<sup>&</sup>lt;sup>1</sup> James Lindemann Nelson, "Genetic Narratives: Biology, Stories, and the Definition of the Family Essay" (1992) 2:1 Health Matrix 71 at 83.

### I. INTRODUCTION

The desire to start a family is extremely powerful. In western societies, science has been coming to the rescue of prospective parents for decades. Some may encounter obstacles to procreation because they are either undertaking this journey alone, are socially infertile or may not be able to give birth to a healthy child.<sup>2</sup> From one method to another, assisted reproductive technologies (ARTs) have since helped many families conceive healthy and genetically related children.<sup>3</sup> The story of ARTs began in the 1970s with the introduction of in vitro fertilization (IVF). Louise Brown, the world's first test-tube baby, was born in the United Kingdom (UK) in 1978.<sup>4</sup> Today, IVF is a technique commonly used in fertility treatments.

IVF consists in the collection of eggs that are fertilized by sperm in a laboratory, outside the woman's body, hence the non-medical expression "test-tube babies" used to refer to the artificial process of conception.<sup>5</sup> Once this step is completed, the embryo (fertilized egg) is implanted in the uterus for gestation.<sup>6</sup> In contrast, artificial insemination is achieved by the insertion of sperm directly into the uterus. The fertilization of the egg then takes place into the body.<sup>7</sup>

Since Louise Brown's birth over 40 years ago, fertility treatments underwent a phenomenal and rapid evolution. ARTs are used not only to assist families dealing with fertility issues, but also

<sup>7</sup> Nivin Todd, "Infertility and Artificial Insemination" (last reviewed 1 August 2021), online: *WebMD* 

<sup>&</sup>lt;sup>2</sup> Alain Roy, "Revue de la jurisprudence 2018 en droit de la famille: Quel droit pour les familles d'aujourd'hui et de demain ?" (2019) 121:1 R du N 1 at 12.

<sup>&</sup>lt;sup>3</sup> See generally S. Hendriks et al, "The importance of genetic parenthood for infertile men and women" (2017) 32:10 Human Reproduction 2076; Saskia Hendriks et al, "The relative importance of genetic parenthood" (2019) 39:1 Reprod Biomed Online 103.

<sup>&</sup>lt;sup>4</sup> Françoise Baylis, *Altered Inheritance: CRISPR and the Ethics of Human Genome Editing* (Cambridge, Massachusetts: Harvard University Press, 2019) at 37; Charlotte Pritchard, "The girl with three biological parents"

<sup>(1</sup> September 2014), online: BBC News < https://www.bbc.com/news/magazine-28986843>.

<sup>&</sup>lt;sup>5</sup> "What is the difference between IVF and test tube baby" (8 May 2018), online: Nova IVF

<sup>&</sup>lt; https://www.novaivffertility.com/blog/what-is-the-difference-between-ivf-and-test-tube-baby/>.

<sup>&</sup>lt;sup>6</sup> "In vitro fertilization (IVF)" (last visited 15 August 2022), online: *Mayo Clinic* <a href="https://www.mayoclinic.org/tests-procedures/in-vitro-fertilization/about/pac-20384716">https://www.mayoclinic.org/tests-procedures/in-vitro-fertilization/about/pac-20384716</a>.

to bypass the biological defects prospective parents may have. Modern and sophisticated ARTs often involve gene therapies to annul the effects of genetic mutations to avoid passing them on to children. Mitochondrial replacement therapy (MRT) is one of these gene therapies.

MRT is a technique preventing a baby to be born with life-threatening conditions due to mitochondrial defects.<sup>8</sup> The deoxyribonucleic acid (DNA)<sup>9</sup> of the mitochondria in each cell of our body can have mutations leading to serious diseases. MRT neutralizes defects in mitochondrial DNA (mDNA) by replacing unhealthy mDNA with healthy mDNA provided by a third party, the mDNA donor.<sup>10</sup> This technique takes place in the context of IVF once a preimplantation genetic diagnosis reveals that the egg donor carries a mitochondrial mutation.<sup>11</sup> In this case, the resulting embryo will have the nuclear DNA (nDNA) of the egg donor and the sperm donor, as well as the mDNA of the mDNA donor. Consequently, if a healthy embryo emerges from MRT, it will share genetic material with three biological parents.<sup>12</sup> But does this mean that MRT produces children with three parents by law?

The possibility to recognize a multiplicity of legal parents as a result of genetic manipulations raises complex ethical, legal, and social issues (ELSI) since it challenges our binomial normative model of conception.<sup>13</sup> There is no consensus in the ethical and legal literature as to whether MRT

<sup>9</sup> "Deoxyribonucleic Acid (DNA)" (last updated 15 August 2022), online: *National Human Genome Research Institute (NHGRI)* <a href="https://www.genome.gov/genetics-glossary/Deoxyribonucleic-Acid">https://www.genome.gov/genetics-glossary/Deoxyribonucleic-Acid</a>.

<https://time.com/magazine/us/5492614/january-14th-2019-vol-193-no-1-u-s/>.

<sup>&</sup>lt;sup>8</sup> Baylis, *supra* note 4 at 43–44.

<sup>&</sup>lt;sup>10</sup> Alice Park, "An Experimental Procedure Could Help More Families Have Healthy Babies. But It's Not Allowed in the U.S." (3 January 2019; issued: 14 January 2019), online: *Time Magazine* 

<sup>&</sup>lt;sup>11</sup> We respect gender neutrality as much as possible throughout the text, hence the use of egg/sperm donor instead of mother/father, except when citing or referring to texts using the latter expressions. We also note that in the context of ARTs, an egg donor is not always the gestational/birthing parent.

<sup>&</sup>lt;sup>12</sup> César Palacios-González, "Does egg donation for mitochondrial replacement techniques generate parental responsibilities?" (2018) 44:12 J Med Ethics 817 at 817.

<sup>&</sup>lt;sup>13</sup> Raphaëlle Dupras-Leduc, Stanislav Birko & Vardit Ravitsky, "Mitochondrial/Nuclear Transfer: A Literature Review of the Ethical, Legal and Social Issues" (2019) 1:2 Can J Bioeth 1 at 1; Alicia J Paller-Rzepka, "Are You My Mother? Why Mitochondrial DNA Transfers Require States to Rework Traditional, Two-Person Legal Parentage Frameworks" (2014) 33:5 Biotechnol Law Rep 193 at 193.

produces triparental children.<sup>14</sup> Some argue that MRT creates triparental children based merely on their genetic relatedness.<sup>15</sup> Others argue that the mDNA donor's genetic contribution is not sufficient for the donor to be considered a parent, since the contribution from the mDNA donor is too small to impart any character traits to the child.<sup>16</sup> Recognizing three legal parents to a child in the context of MRT may open the door to multi-parenthood in other types of ARTs involving multiple donors.<sup>17</sup> Multi-parenthood can complicate the implementation of parental rights and obligations, such as those related to custody and child support.<sup>18</sup>

Unfortunately, there is no clear legal definition of parenthood in the context of a permanent genetic manipulation. Legal scholars and policy-makers should fill in this gap. As a first step in that direction, we offer to answer the following question: in the context of MRT, does genetic manipulation produce triparental children in the eyes of the law? Although we narrow our argument to the current Canadian legal framework, some elements require that we explore a broader landscape.

To answer our question, we conducted a review of the global ethical literature followed by a review of English and Canadian legal literature. We identified and examined the scenarios in which triparental families were legally recognized, outside of gene therapies, given the scarcity of cases where the question was addressed for ARTs. We analyzed both the English and Canadian legal

<sup>&</sup>lt;sup>14</sup> Padmini Cheruvu, "Three-Parent IVF and Its Effect on Parental Rights" (2014) 6:1 Hastings Sci & Tech LJ 73 at 73; Mirko Daniel Garasic & Daniel Sperling, "Mitochondrial replacement therapy and parenthood" (2015) 26:3–4 Glob Bioeth 198 at 198; Ruth L Fischbach, Shawna Benston & John D Loike, "Creating a Three-Parent Child: An Educational Paradigm for the Responsible Conduct of Research" (2014) 15:2 J Microbiol Biol Educ 186 at 186. <sup>15</sup> Françoise Baylis, "The ethics of creating children with three genetic parents" (2013) 26:6 Reprod Biomed Online 531 at 531; Palacios-González, *supra* note 12 at 821.

<sup>&</sup>lt;sup>16</sup> Caroline Jones & Ingrid Holme, "Relatively (im) material: mtDNA and genetic relatedness in law and policy" (2013) 9:4 Life Sci Soc 1 at 6; Dupras-Leduc, Birko & Ravitsky, *supra* note 13 at 4.

<sup>&</sup>lt;sup>17</sup> César Palacios-González, John Harris & Giuseppe Testa, "Multiplex parenting: IVG and the generations to come" (2014) 40:11 J Med Ethics 752 at 756; Dupras-Leduc, Birko & Ravitsky, *supra* note 13 at 5.

<sup>&</sup>lt;sup>18</sup> Cheruvu, *supra* note 14 at 86; Fischbach, Benston & Loike, *supra* note 14 at 188.

literature in this respect. The United Kingdom (UK) became the first country to legalize MRT in 2015.<sup>19</sup> Given our shared common law heritage and legal cultures, the UK's legal ecosystem provides a relevant case of comparison for Canada.

In our Canadian federated system, competence over family laws is shared given the federal jurisdiction over divorce and marriage<sup>20</sup> and the provincial jurisdiction over parentage laws.<sup>21</sup> As a result, rules of filiation differ from one province to another. There are no overarching rules. A better understanding of the impact of ARTs on Canadian families' blueprints requires diving into provincial family laws. Preliminary research has shown that Quebec, Ontario, and British Columbia are the three provinces which have debated the issue of tri-parenthood the most. While Quebec does not allow for more than two legal parents per child, Ontario and British Columbia have incorporated the recognition of multiple parenthood into their family statutes. Our research seeks to contribute to a better understanding of parenthood in the context of ARTs as scientific breakthroughs and social transformations are redefining our notion of the nuclear family.

We argue that MRT does not automatically produce triparental children in the eye of the law. Before presenting the arguments supporting our statement, Chapter I introduces the scientific basics of MRT, such as which diseases it prevents and how. This first chapter also analyzes the main ethical challenges associated with MRT. The introduction of new reproductive technologies

<sup>&</sup>lt;sup>19</sup> Rebecca Dimond & Neil Stephens, "Three persons, three genetic contributors, three parents: Mitochondrial donation, genetic parenting and the immutable grammar of the 'three x x'" (2017) 22:3 Health 240 at 240; Rosamund Scott & Stephen Wilkinson, "Germline Genetic Modification and Identity: The Mitochondrial and Nuclear Genomes" (2017) 37:4 Oxf J Leg Stud 886 at 886; Kashmira Gander, "World's first three-parent baby could soon be born in UK" (22 July 2014), online: *The Independent* 

<sup>&</sup>lt;https://www.independent.co.uk/news/science/world-s-first-three-parent-baby-could-soon-be-born-uk-governmentapproves-treatment-9621572.html>; *The Human Fertilisation and Embryology (Mitochondrial Donation) Regulations 2015* (UK), SR & O 2015/572 [2015 MRT Regulations].

 <sup>&</sup>lt;sup>20</sup> Constitution Act, 1867 (UK) 30 & 31 Vict, c 3, s 91, reprinted in RSC 1985, Appendix II, No 5, s 91(26).
<sup>21</sup> Ibid, s 92(16).

is often perceived negatively, for fear that they would create a slippery slope into a world of "designer babies," generate a market for fetuses<sup>22</sup> and even lead to eugenics.<sup>23</sup>

Chapter II presents our first argument, which is that biology itself is not enough to establish parenthood. First, the genetic contribution of the MRT donor is too low to contribute to the child's identity. Second, the biological account of parenthood is an incomplete parenthood framework since the modern family is built on a combination of both the biological and intentional accounts of parenthood.

Chapter III further argues that MRT is unlikely to lead to a recognition of triparental families given that current legal frameworks, in the jurisdictions studied, remain binomial and heteronormative. In the context of ARTs, laws were originally drafted in a way that would reflect the traditional nuclear family composed of a man and a woman. Resistance from certain courts in recognizing a multiplicity of parents to a child is allegedly in the best interest of the child. However, it is in the name of the same principle that some Canadian provinces are legally recognizing tri-parenthood under certain circumstances.

The last part, Chapter IV, criticizes the current prohibitions targeting gene editing technologies under Canadian law. In that context, we propose an answer to our research question. Though we do not believe MRT leads to tri-parenthood by reason only of using this genetic technology, mDNA donors could be recognized as legal parents under specific circumstances, under both

<sup>&</sup>lt;sup>22</sup> Avery Kolers & Tim Bayne, "'Are You My Mommy?' On the Genetic Basis of Parenthood" (2001) 18:3 J Appl Philos 273 at 283, n 4: "It may soon be possible to have a rather large number of genetic (and gestational) parents, as well. People might use chromosome selection to produce designer babies, or even trade off fetuses — at least early on — among mothers. One is no longer confident to assume the impossibility of anything for which there could conceivably be a market."

<sup>&</sup>lt;sup>23</sup> "Letters: Eugenics fear over gene modification" (15 March 2013), online: The Guardian

<sup>&</sup>lt;https://www.theguardian.com/science/2013/mar/15/eugenics-fear-over-gene-modification> at 1: "The ugly beginnings of a eugenic market are already visible in the US, where Ivy League student donor eggs are priced 10 times higher than those of working-class women."

Ontario and British Columbia family statutes. As for Quebec's Civil Code, we hope it will soon recognize multiple parentage and embody the reality of many modern families.

## II. CHAPTER I: INTRODUCTION TO MITOCHONDRIAL REPLACEMENT THERAPY (MRT)

### A. What Does it Fix and How?

MRT is a technology used as part of ARTs to avoid passing mDNA mutations to an embryo. These mutations can cause life-threatening conditions and considerably reduce one's life expectancy. Since MRT is achieved by replacing unhealthy mDNA with healthy mDNA, it qualifies as collaborative reproduction. Compared to natural reproduction, the complexity of collaborative reproduction lies in the fact that "it introduces a third party into the usual situation of two-parenthood and the 'traditional' genetic, gestational and social unity of reproduction might be separated."<sup>24</sup> As a result, the embryo inherits the genetic material of three people. Before diving into the legal and ethical issues raised by MRT, the science behind MRT deserves our attention.

### i. Mitochondrial Mutations Lead to Mitochondrial Diseases

Mitochondria are an essential part of all cells of the human body as they are responsible for generating their energy.<sup>25</sup> This is why mitochondria are often compared to the batteries or power stations of the cells.<sup>26</sup> Not all cells have the same quantity of mitochondria, since the amount

<sup>25</sup> "Mitochondria" (last updated 15 August 2022), online: *National Human Genome Research Institute (NHGRI)* <a href="https://www.genome.gov/genetics-glossary/Mitochondria">https://www.genome.gov/genetics-glossary/Mitochondria</a>; Stephen Wilkinson, "The ethics of three-person IVF" (4 August 2014), online: *The Conversation* <a href="http://theconversation.com/the-ethics-of-three-person-ivf-29880">http://theconversation.com/the-ethics-of-three-person-ivf-29880</a>>.
<sup>26</sup> Alicia Kowaltowski & Fernando Abdulkader, "Mitochondria: The Batteries of Our Cells" in *Where Does All That*

*Food Go? How Metabolism Fuels Life*, ed by Alicia Kowaltowski & Fernando Abdulkader (Copernicus, Cham, 2020) 37; "Controlling the cell's batteries" (15 March 2019), online: *eLife Sciences* 

<https://elifesciences.org/digests/41927/controlling-the-cell-s-batteries>.

<sup>&</sup>lt;sup>24</sup> A L Bredenoord, G Pennings & G de Wert, "Ooplasmic and nuclear transfer to prevent mitochondrial DNA disorders: conceptual and normative issues" (2008) 14:6 Hum Reprod Update 669 at 674.

depends on how much energy the cells need.<sup>27</sup> For instance, muscles (e.g., the cardiac muscle), the liver, and the kidney have a lot of mitochondria.<sup>28</sup> Brain cells also have a considerable quantity of mitochondria.<sup>29</sup> Defects in the mDNA are extremely serious since it usually means that the batteries of the cells "[do not] produce enough energy to make [the] cells work properly."<sup>30</sup> When mDNA defects affect the cells of organs such as the brain, the kidney or the heart, serious and event fatal consequences can ensue.<sup>31</sup>

More precisely, mDNA mutations can lead to heart and respiratory failure as well as neurological disorders such as epilepsy, dementia, strokes, speech disturbances, and sensorineural deafness.<sup>32</sup> They can also cause thyroid disease and ovarian failure.<sup>33</sup> mDNA mutations are also associated with cardiac rhythm abnormalities, hypoventilation, anaemia, diabetes, epilepsy, optic atrophy, renal defects, as well as adrenal, and hepatic failure.<sup>34</sup> Unfortunately, most children born with a genetic disease caused by mDNA mutations have a short life expectancy as a result of these life-threatening conditions.<sup>35</sup>

However, not all mDNA mutations lead to fatalities since a certain quantity of mDNA defects is necessary to have a clinical impact on their carrier. For a child to develop symptoms, "the majority of the [mDNA] of a cell needs to be affected by mutations."<sup>36</sup> If there is a sufficient

<sup>&</sup>lt;sup>27</sup> NHGRI, *supra* note 25; Wilkinson, *supra* note 25.

<sup>&</sup>lt;sup>28</sup> Ibid.

<sup>&</sup>lt;sup>29</sup> Ibid.

<sup>&</sup>lt;sup>30</sup> Wilkinson, *supra* note 25.

<sup>&</sup>lt;sup>31</sup> Baylis, *supra* note 4 at 44.

<sup>&</sup>lt;sup>32</sup> Robert W Taylor & Doug M Turnbull, "Mitochondrial DNA mutations in human disease" (2005) 6:5 Nat Rev Genet 389 at 394; UK, Nuffield Council on Bioethics (NCoB), *Novel techniques for the prevention of mitochondrial DNA disorders: an ethical review* (London, 2012) at 21–24, paras 1.11-1.21. Taylor and Turnbull are the scientists who discovered MRT.

<sup>&</sup>lt;sup>33</sup> Taylor & Turnbull, *supra* note 32 at 394.

<sup>&</sup>lt;sup>34</sup> *Ibid*.

<sup>&</sup>lt;sup>35</sup> Robin Banerji, "The woman who lost all seven children" (20 September 2012), online: *BBC News* <a href="https://www.bbc.com/news/magazine-19648992">https://www.bbc.com/news/magazine-19648992</a>>.

<sup>&</sup>lt;sup>36</sup> "Methods of Inheritance" (last visited 15 August 2022), online: *London Health Sciences Centre (LHSC)* <a href="https://www.lhsc.on.ca/medical-genetics-program-of-southwestern-ontario/methods-of-inheritance">https://www.lhsc.on.ca/medical-genetics-program-of-southwestern-ontario/methods-of-inheritance</a>; Sabrina

quantity of mDNA defects to cause health consequences, then scientists can rely on MRT to remove mDNA mutations and, consequently, eliminate any risks of developing such symptoms. MRT can be achieved through two methods: maternal spindle transfer or pronuclear transfer.<sup>37</sup>

### ii. Maternal Spindle Transfer vs. Pronuclear Transfer

There are two techniques for MRT. The first is maternal spindle transfer which "involves removing damaged mitochondria from the mother's egg and replacing them with healthy mitochondria from a donated egg."<sup>38</sup> The second method is pronuclear transfer and it "involves removing damaged mitochondria from the parents' embryo and replacing them with healthy mitochondria from a donated embryo, or from an embryo made using the father's sperm and a donated egg."<sup>39</sup> The differences between the two methods are illustrated on the next page.

Sacconi et al, "A functionally dominant mitochondrial DNA mutation" (2008) 17:12 Hum Mol Genet 1814 at 1814. According to Sacconi et al., that threshold usually ranges from 70-90%.

<sup>&</sup>lt;sup>37</sup> Baylis, *supra* note 4 at 44–46; Rebecca Dimond, "Social and ethical issues in mitochondrial donation" (2015) 115:1 Br Med Bull 173 at 174; César Palacios-González, "Are there moral differences between maternal spindle transfer and pronuclear transfer?" (2017) 20:4 Med Health Care and Philos 503; Lyndsey Craven et al, "Pronuclear transfer in human embryos to prevent transmission of mitochondrial DNA disease" (2010) 465:7294 Nature 82; Louise A Hyslop et al, "Towards clinical application of pronuclear transfer to prevent mitochondrial DNA disease" (2016) 534:7607 Nature 383; César Palacios-González & María de Jesús Medina-Arellano, "Mitochondrial replacement techniques and Mexico's rule of law: on the legality of the first maternal spindle transfer case" (2017) 4:1 J Law Biosci 50.

<sup>&</sup>lt;sup>38</sup> Wilkinson, *supra* note 25; Dimond, *supra* note 37 at 174.

<sup>&</sup>lt;sup>39</sup> Ibid.



Figure 1. Maternal Spindle Transfer and Pronuclear Transfer<sup>40</sup>

Contrary to maternal spindle transfer, pronuclear transfer requires the destruction of two embryos to create a third healthy one.<sup>41</sup> This distinction is crucial for couples whose convictions go against the destruction of life at the embryo stage, because they believe life begins at the time of conception. This element was the turning point for a Muslim-Jordanian couple who opted for the maternal spindle transfer.<sup>42</sup> In 2016, their healthy child was delivered in Mexico, by a team of

<sup>&</sup>lt;sup>40</sup> Dimond, *supra* note 37 at 174.

<sup>&</sup>lt;sup>41</sup> *Ibid* at 177.

<sup>&</sup>lt;sup>42</sup> Jessica Hamzelou, "Exclusive: World's first baby born with new '3 parent' technique" (27 September 2016), online: *New Scientist* <a href="https://www.newscientist.com/article/2107219-exclusive-worlds-first-baby-born-with-new-3-parent-technique/">https://www.newscientist.com/article/2107219-exclusive-worlds-first-baby-born-with-new-3-parent-technique/</a>; Dimond, *supra* note 37 at 177; Palacios-González & Medina-Arellano, *supra* note 37 at 51–58; Palacios-González, *supra* note 37 at 508.

American doctors led by American Dr. John Zhang.<sup>43</sup> Their child was the world's first MRT baby, and their case was the first instance of MRT tourism.<sup>44</sup> The story of this Muslim-Jordanian couple offers a glimpse of some of the moral and ethical issues raised by MRT.

Regardless of the method chosen for MRT, the resulting and implanted embryo will carry the DNA of three people: the sperm donor, the egg donor, and the mDNA donor. Both parents (i.e., sperm and egg donors) will contribute to the nDNA of the child while the mDNA donor only provides mDNA. This triple genetic background is permanent and heritable, adding to the polemics already surrounding MRT. Indeed, the use of gene therapies modifying the germline is controversial.

### **B.** The Fears Associated with Germline Modifications

The introduction of gene therapies in ARTs is controversial as some argue that they could create a slippery slope into a world of "designer babies" and a market for fetuses.<sup>45</sup> For that reason and because the changes made to the child's DNA through MRT are permanent, many countries have banned or restricted the use of germline editing technologies in ARTs.<sup>46</sup> For instance, the United States bans MRT.<sup>47</sup> In 2020, a global survey of 106 countries published in the CRISPR Journal<sup>48</sup> established that 96 countries regulate in one way or another the genetic modification of

<sup>44</sup> Bartha Maria Knoppers et al, "Mitochondrial Replacement Therapy: The Road to the Clinic in Canada" (2017) 39:10 J Obstet Gynaecol Can 916 at 916; Hamzelou, *supra* note 40.

<a href="https://www.science.org/content/article/update-house-spending-panel-restores-us-ban-gene-edited-babies">https://www.science.org/content/article/update-house-spending-panel-restores-us-ban-gene-edited-babies</a>>.

<sup>&</sup>lt;sup>43</sup> Palacios-González & Medina-Arellano, *supra* note 37 at 51.

<sup>&</sup>lt;sup>45</sup> Kolers & Bayne, *supra* note 22 at 283; Baylis, *supra* note 4 at 36–42.

<sup>&</sup>lt;sup>46</sup> Motoko Araki & Tetsuya Ishii, "International regulatory landscape and integration of corrective genome editing into in vitro fertilization" (2014) 12:1 Reprod Biol Endocrinol 108 at 116; Katherine Drabiak, "Emerging Governance of Mitochondrial Replacement Therapy: Assessing Coherence Between Scientific Evidence and Policy Outcomes" (2018) 20:1 DePaul J Health Care Law 1 at 1; Jacqueline Detwiler-George, "Legal vs. Illegal Gene Editing: Here's What's Banned, and Why" (4 December 2018), online: *Popular Mechanics* 

<sup>&</sup>lt;a href="https://www.popularmechanics.com/science/health/a25385071/gene-editing-crispr-cas9-legal/>.</a>

<sup>&</sup>lt;sup>47</sup> US, HR244, *Consolidated Appropriations Act*, 115<sup>th</sup> Cong, 2017, s 736; Park, *supra* note 10; Jocelyn Kaiser, "Update: House spending panel restores U.S. ban on gene-edited babies" (4 June 2019), online: *ScienceInsider* 

<sup>&</sup>lt;sup>48</sup> Françoise Baylis et al, "Human Germline and Heritable Genome Editing: The Global Policy Landscape" (2020) 3:5 CRISPR J 365.

embryos in laboratory research. Of these countries, 75 prohibit the use of genetically modified embryos in fertility treatments,<sup>49</sup> though five of these countries provide for exceptions.<sup>50</sup> Despite this reluctance, other countries support germline editing technologies helping families bring healthy children into the world. For instance, the UK has legalized MRT.<sup>51</sup> We are also aware of unregulated MRT pregnancies in Mexico and Ukraine.<sup>52</sup>

Unfortunately, in our globalized world, national MRT regulations are insufficient to address concerns related to MRT since the use of MRT necessarily has an impact outside a country's border. This is why 55 members of the Italian parliament (from the entire political spectrum) published a letter in The Times (UK) on February 20, 2015, imploring their British colleagues not to legalize MRT.<sup>53</sup> According to them, the "creation of such embryos [would] affect[t] future generations, and modif[y] genetic heritage in an irreversible way, inevitably affecting the human species as a whole."<sup>54</sup> They also expressed worry that such unforeseeable consequences "cannot possibly be contained within the confines of the UK."<sup>55</sup> Thus, reducing the discussion of legalizing MRT at a national level is inadequate.

<sup>&</sup>lt;sup>49</sup> *Ibid* at 365.

<sup>&</sup>lt;sup>50</sup> Ibid.

<sup>&</sup>lt;sup>51</sup> 2015 MRT Regulations, supra note 19; US, National Academy of Medicine, National Academy of Sciences & and the Royal Society, *Heritable Human Genome Editing* (Washington, D.C.: The National Academies Press, 2020) at 24 [National Academies]: "Mitochondrial replacement techniques (MRT) constitute the only technology currently approved anywhere in the world that results in genetic changes that can be inherited."

<sup>&</sup>lt;sup>52</sup> Baylis, *supra* note 4 at 46; Dimond & Stephens, *supra* note 19 at 243; Andy Coghlan, "Exclusive: '3-parent' baby method already used for infertility" (10 October 2016), online: *New Scientist* 

<sup>&</sup>lt;a href="https://www.newscientist.com/article/2108549-exclusive-3-parent-baby-method-already-used-for-infertility/">https://www.newscientist.com/article/2108549-exclusive-3-parent-baby-method-already-used-for-infertility/</a>.

<sup>&</sup>lt;sup>53</sup> "Three person DNA" (20 March 2015), online: *The Times* <a href="https://www.thetimes.co.uk/article/three-person-dna-2cpp9l25lts">https://www.thetimes.co.uk/article/three-person-dna-2cpp9l25lts</a>.

<sup>&</sup>lt;sup>54</sup> Ibid.

<sup>&</sup>lt;sup>55</sup> Ibid.

### i. MRT: Therapy or Enhancement? The Path to Modern Eugenics

The expression "designer babies" often has a negative connotation as it evokes the idea of parents asking scientists or doctors to genetically modify embryos' traits in order to tailor them to the parents' desires, hence opening the path to modern eugenics. While the concept of "designer babies" may seem exaggerated or fictional, it may already be part of our reality due to genetic technologies such as CRISPR-Cas9. The controversial history behind CRISPR-Cas9 overflows to the use of other ARTs such as MRT.

The CRISPR-Cas9 technology was recently discovered by 2020 Chemist Nobel Prize laureates Jennifer Doudna (USA) and Emmanuelle Charpentier (France and Germany).<sup>56</sup> The acronym stands for "clustered regularly interspaced short palindromic repeats" (CRISPR).<sup>57</sup> CRISPR-Cas9 alters genes through a process that has the same simplicity of a text-editing tool.<sup>58</sup> The Cas9 protein can be compared to a pair of scissors that is inserted into a DNA sequence (i.e., the text) at a predetermined and specific location where it can "cut" to edit the sequence, either by inserting an additional sequence or by shortening it.<sup>59</sup> This is the first time that science has made it possible to carry out genetic modifications with such a high degree of precision.

CRISPR-Cas9 can be used not only in the human DNA, but in the DNA of all cells and microorganisms. It allows to literally "rewrite the code of life,"<sup>60</sup> leading to important advancements in diverse fields such as agriculture, climate change, and cancer research, to only

<sup>&</sup>lt;sup>56</sup> The Royal Swedish Academy of Sciences, Press Release, "The Nobel Prize in Chemistry 2020" (7 October 2020), online: *The Nobel Prize* <a href="https://www.nobelprize.org/prizes/chemistry/2020/press-release/>">https://www.nobelprize.org/prizes/chemistry/2020/press-release/></a>; Heidi Ledford & Ewen Callaway, "Pioneers of revolutionary CRISPR gene editing win chemistry Nobel" (2020) 586:7829 Nature 346 at 346; Martin Jinek et al, "A Programmable Dual-RNA–Guided DNA Endonuclease in Adaptive Bacterial Immunity" (2012) 337:6096 Science 816. Doudna and Chaprpentier and colleagues published their findings in Jinek et al. <sup>57</sup> Jinek et al, *supra* note 56 at 816.

<sup>&</sup>lt;sup>58</sup> The Royal Swedish Academy of Sciences, *supra* note 56.

<sup>&</sup>lt;sup>59</sup> Ibid.

<sup>&</sup>lt;sup>60</sup> *Ibid*.

name a few.<sup>61</sup> Despite all of the promises of CRISPR-Cas9, a lot of research remains necessary to fully understand the implications of this technology. The uncertainty surroundings the effects of the use of this technology is at the source of the current reluctance of the international community to consider its use on humans.

Regardless of this resistance, He Jiankui, a biophysicist<sup>62</sup> from Southern University of Science and Technology of China in Shenzhen,<sup>63</sup> claimed to have successfully used the CRISPR-Cas9 technology on embryos, prior to their implantation. In October 2018, the birth of the Chinese twin girls Lulu and Nana<sup>64</sup> stunned the world.<sup>65</sup> According to He Jiankui, the twins' DNA was permanently altered to make them immune to HIV infection.<sup>66</sup> Jiankui presented his work as the accomplishment of a new milestone in ARTs and a first step in human gene editing.<sup>67</sup> However, the world did not react as Jiankui was hoping.

The controversy lies in the fact that Jiankui's actions are in direct opposition with current scientific and ethical norms. First, there is no way to verify if the alleged immunization to HIV has been successful since tentatively infecting patients with HIV to challenge this hypothesis would be unethical. Second, even if Jiankui ensures that only targeted genes were edited,<sup>68</sup> there is no

<sup>62</sup> David Cyranoski, "What CRISPR-baby prison sentences mean for research" (2020) 577:7789 Nature 154 at 154. <sup>63</sup> Dick Ahlstrom, "Lulu and Nana are the result of a defiant experiment in human gene modification" (28 November 2019), online: *The Irish Times* <a href="https://www.irishtimes.com/business/innovation/lulu-and-nana-are-the-result-of-a-defiant-experiment-in-human-gene-modification-1.4095771">https://www.irishtimes.com/business/innovation/lulu-and-nana-are-the-result-of-a-defiant-experiment-in-human-gene-modification-1.4095771</a>>.

<sup>&</sup>lt;sup>61</sup> *Ibid*.

<sup>&</sup>lt;sup>64</sup> The He Lab, "About Lulu and Nana: Twin Girls Born Healthy After Gene Surgery as Single-Cell Embryos" (25 November 2018), online (video): *Youtube* <a href="https://www.youtube.com/watch?v=th0vnOmFltc">https://www.youtube.com/watch?v=th0vnOmFltc</a>. The names of the twins were changed to protect their identity.

<sup>&</sup>lt;sup>65</sup> Ahlstrom, *supra* note 63.

<sup>&</sup>lt;sup>66</sup> The He Lab, *supra* note 64; Baylis, *supra* note 4 at 48.

<sup>&</sup>lt;sup>67</sup> The He Lab, *supra* note 64.

<sup>&</sup>lt;sup>68</sup> David Cyranoski & Heidi Ledford, "Genome-edited baby claim provokes international outcry" (2018) 563:7733 Nature 607 at 607.

way to predict if this genetic manipulation will generate off-target mutations, i.e., unwanted genetic modifications.<sup>69</sup>

In short, in the case of Lulu and Nana, the "gene-editing technology was too premature to be used for [human] reproductive purposes."<sup>70</sup> Consequently, Jiankui was accused of experimenting with humans. Based on this accusation, the Chinese People's Court of Nanshan District of Shenzhen sentenced Jiankui to a fine of 3 million yuan (US\$430,000) and three years in jail.<sup>71</sup> Jiankui was also fired from the Southern University of Science and Technology of China in January 2019.<sup>72</sup> Two of Jiankui's colleagues also faced criminal charges, although they were condemned to lesser fines and sentences.<sup>73</sup> The purpose of these condemnations is to discourage scientists from engaging in similar practices.

This CRISPR-Cas9 scandal drew international attention to gene editing technologies in the specific context of ARTs. Voices against "designer babies" became louder. As a result, other genetic technologies used in ARTs, such as MRT, became controversial since they are perceived as a bridge into the world of "designer babies." The heritable and permanent nature of genetic changes generated by CRISPR-Cas9 and MRT are the main ethical issues at the source of this discomfort.

<sup>&</sup>lt;sup>69</sup> Heidi Ledford, "CRISPR fixes disease gene in viable human embryos" (2017) 548:7665 Nature 13 at 13; Alvaro Plaza Reyes & Fredrik Lanner, "Towards a CRISPR view of early human development: applications, limitations and ethical concerns of genome editing in human embryos" (2017) 144:1 Development (Stem Cells & Regeneration) 3 at 4.

<sup>&</sup>lt;sup>70</sup> Cyranoski, *supra* note 62 at 155.

<sup>&</sup>lt;sup>71</sup> *Ibid*.

<sup>&</sup>lt;sup>72</sup> *Ibid*.

<sup>&</sup>lt;sup>73</sup> *Ibid*.

#### ii. The Genetic Implications of MRT on Future Generations (Heritable Nature)

Another ethical issue with MRT is its heritable nature. mDNA is inherited through the maternal line, along with its defects and mutations.<sup>74</sup> The scientific reason behind the maternal heritability of mDNA is that only the egg contains mDNA, while the sperm does not.<sup>75</sup> Therefore, any modifications made to the mDNA of a female embryo are passed on to the next generation since "we inherit our mitochondria only from our mothers, [so] only female children would pass their unusual genetic code on."<sup>76</sup> Consequently, the egg donor contributes to both nDNA and mDNA while the sperm donor only contributes to nDNA.77

To further understand the science behind the heritability pattern of mDNA, it is important to distinguish the two families of cells of the human body: germ cells and somatic cells. Sex cells (i.e., gametes: egg and sperm) are part of the germline and can carry mutations. When a germline mutation occurs in a parent, the entire organism of the child carries the mutation as well as half of the child's gametes (see Figure 2 on the next page).<sup>78</sup> Consequently, germline mutations can be passed on to multiple generations. On the other hand, a somatic mutation occurs "only [...] in a specific area of the body [and is] not carried in the gametes, and [is] not hereditary."<sup>79</sup> For

<sup>&</sup>lt;sup>74</sup> Patrick F Chinnery, "Inheritance of mitochondrial disorders" (2002) 2:1 Mitochondrion 149 at 149; "Mitochondrial Diseases: Causes, Symptoms, Diagnosis & Treatment" (last reviewed 31 May 2018), online: Cleveland Clinic <https://my.clevelandclinic.org/health/diseases/15612-mitochondrial-diseases>. <sup>75</sup> The National Academies, *supra* note 51 at 24.

<sup>&</sup>lt;sup>76</sup> Pritchard, *supra* note 4.

<sup>&</sup>lt;sup>77</sup> Cleveland Clinic, *supra* note 74.

<sup>&</sup>lt;sup>78</sup> Christopher Evans, "Germline and Somatic Mutations in Advanced Prostate Cancer: Actionable Targets" (SIU Virtual Congress, 2020), online: <a href="https://www.urotoday.com/conference-highlights/siu-2020/siu-2020-gu-">https://www.urotoday.com/conference-highlights/siu-2020/siu-2020-gu-</a> malignancies-prostate/125093-siu-virtual-congress-2020-germline-and-somatic-mutations-in-advanced-prostatecancer-actionable-targets.html>.

instance, a tumour is a somatic mutation.<sup>80</sup> A patient receiving gene therapy in their eye is also a somatic mutation and it will not be passed on.<sup>81</sup>

In the case of MRT, since mDNA is carried in gametes, the mDNA mutation is a germline mutation and it can be passed on.<sup>82</sup> Thus, the donor's mDNA participating in the fertilization process is also inherited. For more on the distinction between somatic and germinal tissue, please refer to the illustration below:



Figure 2. Germ-line and somatic cell mutations.<sup>83</sup>

<sup>&</sup>lt;sup>80</sup> *Ibid*.

<sup>&</sup>lt;sup>81</sup> Ravichandran Vijaya Abinaya & Pragasam Viswanathan, "Chapter 2 - Biotechnology-based therapeutics" in *Transl Biotechnol*, 1<sup>st</sup> ed by Yasha Hasija (Academic Press, 2021) 27 at 2.2.1.

<sup>&</sup>lt;sup>82</sup> Cleveland Clinic, *supra* note 74.

<sup>&</sup>lt;sup>83</sup> Evans, *supra* note 78.

The genetic heritage of MRT is at the heart of the question of filiation and at the core of many regulatory debates given the biological, ethical, and legal implications on future generations. Indeed, since the mDNA of the embryo is modified with the introduction of healthy mDNA from a third party, a question that remains is can this person be a third legal parent to the child?

## III. CHAPTER II: BIOLOGY ITSELF IS NOT ENOUGH TO ESTABLISH PARENTHOOD

The main reason why MRT donors are not considered parents on the basis of sharing biological material with the child is that biology itself is not enough to establish parenthood. First, the genetic contribution of the MRT donor is too low to contribute to the child's identity. Second, the biological account of parenthood is an incomplete parenthood framework. Indeed, the modern family is built on a combination of both the intentional and the biological accounts of parenthood.

### A. The Relationship Between Genetics and Identity

Knowledge of genetics often contributes to a better understanding of one's identity.<sup>84</sup> Popular genealogy services such as ancestry.com<sup>™</sup> are a good illustration of this correlation. These services help people understand their ethnic heritage by mapping out their family trees. To do so, they often rely on genetic testing. By revealing the genetic relationship between individuals, genealogy services accentuate the value of genes as roots to the typical family tree. Some argue

<sup>&</sup>lt;sup>84</sup> Catherine Mills, "Nuclear Families: Mitochondrial Replacement Techniques and the Regulation of Parenthood" (2021) 46:3 Sci Technol Hum Values 507 at 519: "[...] genes more or less strictly determine our identity."

that technologies such as MRT may blur ancestry tracing and prevent people from uncovering their genetic truth,<sup>85</sup> which may be contrary to the right of the child to know their identity.<sup>86</sup>

A child's identity is central to the concept of parenthood since members of a family often share a common heritage and are part of the same genealogical lineage. Such heritage can be physiological or character resemblance (i.e., you have your mother's eyes, you laugh just like your father) or genetic material. The latter can be objectively verified through genetic testing. Consequently, it is not uncommon to see courts requesting DNA testing in custody cases.

Introduced in Canadian family law in the 1990s, DNA technology allows to establish filiation with a significant level of certainty.<sup>87</sup> In the name of the best interest of the child and the need for the "best available evidence,"<sup>88</sup> genetic testing took over filiation disputes and impacted other aspects of family law such as child support.<sup>89</sup> Timothy Caulfield qualifies the 1990s as the "geneticization" of Canadian family law.<sup>90</sup>

Identifying a child's biological parents through genetic testing has implications beyond the legal realm. Indeed, knowing a child's genetic profile plays an important role in forging their sense

<sup>&</sup>lt;sup>85</sup> Carol Smart, "Family Secrets: Law and Understandings of Openness in Everyday Relationships" (2009) 38:4 J Soc Policy 551 at 551; Jennifer Readings et al, "Secrecy, disclosure and everything in-between: decisions of parents of children conceived by donor insemination, egg donation and surrogacy" (2011) 22:5 Reprod Biomed Online 485 at 494; Baylis, *supra* note 13 at 533: "For some, genealogical information of the type available through ancestry tracing is important for identity. Mitochondrial replacement technology represents a potential threat to genealogical research using mtDNA analysis, as it would obscure the lines of individual descent, thereby providing a false or confusing picture."

<sup>&</sup>lt;sup>86</sup> UNHROHC, *United Nations Convention on the Rights of the Child (UNCRC)*, General Assembly Res 44/25 (1989), art 8.

<sup>&</sup>lt;sup>87</sup> Timothy Caulfield, "Canadian Family Law and the Genetic Revolution: A Survey of Cases Involving Paternity Testing" (2000) 26:1 Queen's LJ 67 at 90; Timothy A Caulfield, "Underwhelmed: Hyperbole, Regulatory Policy, and the Genetic Revolution" (2000) 45:2 McGill LJ 437 at 442 [Caulfield 2].

<sup>&</sup>lt;sup>88</sup> Caulfield, *supra* note 87 at 85–86.

<sup>&</sup>lt;sup>89</sup> *Ibid* at 93.

<sup>&</sup>lt;sup>90</sup> *Ibid* at 175.

of identity and in establishing their medical history.<sup>91</sup> The child's genetic profile is considered so significant that some even advocate to include it in adoption files.<sup>92</sup>

Before assessing the impact of genes on a child's identity, we will dive into some notions of biology such as the difference between nDNA and mDNA. This distinction ultimately allowed the UK to legalize MRT. The combined reading of the following sections supports our argument that the genetic contribution of the mDNA donor is too low to contribute to a child's identity.

### B. The Insufficient Genetic Contribution of the mDNA Donor

### i. The Biological Difference Between nDNA and mDNA

In a cell, DNA can be found in both the nucleus and the mitochondria. As Figure 3 on the next page shows, mitochondria have their own DNA, meaning that mDNA is distinct from nDNA. The former is situated in the cytoplasm of the cell while the latter is part of the cell's nucleus.<sup>93</sup> For a better understanding of these distinctions, please refer to the visual representation on the next page.

<sup>&</sup>lt;sup>91</sup> UK, Human Fertilisation and Embryology Authority (HFEA), *Mitochondria replacement consultation: Advice to Government* (London 2013) at 21, para 6.38.

<sup>&</sup>lt;sup>92</sup> Caulfield, *supra* note 85 at 99; Doris Chateauneuf & Françoise Romaine Ouellette, "Kinship Within the Context of New Genetics: The Experience of Infertility from Medical Assistance to Adoption" (2017) 38:2 J Fam Issues 177 at 183.

<sup>&</sup>lt;sup>93</sup> Baylis, *supra* note 4 at 42.



Figure 3. Mitochondria have their own DNA.94

Quantitatively, mDNA represents only 37 genes out of some 20,000 genes one person can have.<sup>95</sup> Thus, mDNA is the equivalent of 0.1% of the human genome while nDNA represents 99.90%.<sup>96</sup> The cell's nucleus contains most of our genes as well as chromosomes.<sup>97</sup> Chromosomes are a combination of genes inherited from the sex cells of biological parents (i.e., nDNA).<sup>98</sup> On the other hand, mDNA comes from the maternal line only, it is not a combination of both biological parents' DNA.<sup>99</sup> For that reason, mDNA is scientifically simpler than nDNA, which has led some to argue that modifications of the mDNA are less controversial than that of the nDNA.<sup>100</sup>

<sup>95</sup> Heidi Chial & Joanna Craig, "mtDNA and Mitochondrial Diseases" (2008) 1:1 Nature 217 at 217; Patrick Francis Chinnery & Gavin Hudson, "Mitochondrial genetics" (2013) 106:1 Br Med Bull 135 at 137; Iakes Ezkurdia et al, "Multiple evidence strands suggest that there may be as few as 19 000 human protein-coding genes" (2014) 23:22 Hum Mol Genet 5866 at 5866; Bredenoord, Pennings & de Wert, *supra* note 22 at 674.

<sup>&</sup>lt;sup>94</sup> Diana Kwon, "Could Mitochondria Be the Key to a Healthy Brain?" (17 June 2021), online: *Knowable Magazine* <a href="https://knowablemagazine.org/article/mind/2021/could-mitochondria-be-key-healthy-brain">https://knowablemagazine.org/article/mind/2021/could-mitochondria-be-key-healthy-brain</a>.

<sup>&</sup>lt;sup>96</sup> Bredenoord, Pennings & de Wert, *supra* note 24 at 674.

<sup>&</sup>lt;sup>97</sup> Chial & Craig, *supra* note 95 at 217; The National Academies, *supra* note 51 at 24.

<sup>&</sup>lt;sup>98</sup> Chial & Craig, *supra* note 95 at 217.

<sup>&</sup>lt;sup>99</sup> The National Academies, *supra* note 51 at 24.

<sup>&</sup>lt;sup>100</sup> A L Bredenoord et al, "Ethics of modifying the mitochondrial genome" (2011) 37:2 J Med Ethics 97 at 97.

Since nDNA comes from both biological parents', and since the amount of inherited nDNA is much higher than that of mDNA, science believes that nDNA provides most, if not all, personality traits and characteristics to the child.<sup>101</sup> Indeed, the contribution of mDNA is simply too low to have any impact on a child's identity. But is it really that simple? Author César Palacios-González wonders if, despite a much smaller contribution, mDNA may still have a significant impact on the child's identity.<sup>102</sup>

### ii. The Impact of Genes on Identity: The Quantitative and Qualitative Claims

The influence of genes on the identity of a child plays a significant role in the attribution of parenthood. One idea that is put forward is that in order to have an impact on a child's identity, not only should a parent contribute significantly to the child's genes, but such contribution should also provide personal features to the child.<sup>103</sup> These two aspects of the arguments are known as the quantity claim and the quality claim.<sup>104</sup>

The quantity claim is that the 0.1% genetic contribution of the mDNA to the child's total genetic material is insufficient to have an impact on the child's identity.<sup>105</sup> Therefore, the combined nDNA contribution of the egg and sperm donors, which is the remaining 99.90% of the child's genetic material,<sup>106</sup> has a much greater impact on the child's identity. As for the quality claim, it rests on the fact that, contrary to nDNA, mDNA "does [not] govern significant personal

<sup>&</sup>lt;sup>101</sup> UK, Department of Health (DoH): Public Health Science and Bioethics Division, *Mitochondrial Donation: A consultation on draft regulations to permit the use of new treatment techniques to prevent the transmission of a serious mitochondrial disease from mother to child*, (London, 2014) at 13, para 1.24.

<sup>&</sup>lt;sup>102</sup> Palacios-González, *supra* note 12 at 819.

<sup>&</sup>lt;sup>103</sup> *Ibid*; John Harris, "Germline Modification and the Burden of Human Existence" (2015) 25:1 Camb Q Healthc Ethics 6 at 11.

<sup>&</sup>lt;sup>104</sup> John B Appleby, "Should Mitochondrial Donation Be Anonymous?" (2018) 43:2 J Med Philos 261 at 264; Palacios-González, *supra* note 12 at 819.

<sup>&</sup>lt;sup>105</sup> Harris, *supra* note 103 at 11.

<sup>&</sup>lt;sup>106</sup> Bredenoord, Pennings & de Wert, *supra* note 24 at 674.

characteristics and traits."<sup>107</sup> Science believes that a child inherits most of their personal characteristics from the combined nDNA of their biological parents.<sup>108</sup> That is not to say, however, that mDNA has no impact at all on a child's identity. Indeed, author Catherine Mills argues that having a disease due to a mitochondrial mutation may rightfully be considered a personal characteristic.<sup>109</sup>

According to the quantitative and qualitative claim, nDNA has a greater impact on the child's identity. Indeed, a child inherits a larger quantity of nDNA, which also holds their personal traits. These crucial distinctions between nDNA and mDNA also have a significant impact on legislation. Because of the complexity of nDNA, the public, members of the parliament and policy-makers generally find it easier to accept genetic technologies involving mDNA instead. Indeed, changes to nDNA have a greater impact on the DNA (and identify) of the child. This is the reason why many countries heavily regulate gene editing technologies.<sup>110</sup> It is thanks to the distinction between nDNA and mDNA as well as the qualification of what constitutes "gene editing" that the UK was able to pass The Human Fertilisation and Embryology (Mitochondrial Donation) Regulations in 2015.<sup>111</sup>

## iii. The UK Relied on the Difference Between nDNA and mDNA to Pass the 2015 MRT Regulations

The clear distinction between nDNA and mDNA was one of the central pieces in the UK's parliamentary debates leading to the legalization of MRT in 2015. Just as there is a physical

<sup>&</sup>lt;sup>107</sup> Appleby, *supra* note 104 at 266; Bredenoord et al, *supra* note 100 at 97; Baylis, *supra* note 15 at 532.

<sup>&</sup>lt;sup>108</sup> Palacios-González, *supra* note 12 at n vii; Anthony Wrigley, Stephen Wilkinson & John B Appleby,

<sup>&</sup>quot;Mitochondrial Replacement: Ethics and Identity" (2015) 29:9 Bioethics 631 at 633.

<sup>&</sup>lt;sup>109</sup> Mills, *supra* note 84 at 516.

<sup>&</sup>lt;sup>110</sup> Baylis et al, *supra* note 48 at 365.

<sup>&</sup>lt;sup>111</sup> 2015 MRT Regulations, supra note 19.

boundary separating mDNA from nDNA in a cell, "regulators [tend to] establish an equally clear legal distinction between modifications to the different genomes [i.e., mDNA and nDNA]."<sup>112</sup>

One of the first obstacles the UK encountered when examining the legalization of MRT was whether this technology should be classified as gene editing. The use of gene editing technologies remains extremely controversial, especially when it comes to humans. Therefore, countries often ban or heavily regulate them.<sup>113</sup> However, the UK successfully worked around these issues with a clever wordplay.

In short, the UK's solution was to adopt a working definition of "genetic modification" which allowed it to exclude MRT. This exclusion is rooted in the differences between nDNA and mDNA. According to the UK Department of Health, MRT is not gene editing, just like blood, tissue, and organ donations are not considered gene editing either:

There is no universally agreed definition of 'genetic modification' in humans – people who have organ transplants, blood donations or even gene therapy are not generally regarded as being 'genetically modified.' While there is no universally agreed definition, the Government has decided to adopt a *working* definition for the purpose of taking forward these regulations. <u>The working definition that we have adopted is that genetic modification involves the germline modification of nuclear DNA (in the chromosomes) that can be passed on to future generations</u>. This will be kept under review.

<sup>&</sup>lt;sup>112</sup> UK, Nuffield Council on Bioethics (NCoB), *Mitochondrial DNA disorders* (London, 2012) at 65, para 4.65; Scott & Wilkinson, *supra* note 19 at 901, n 78.

<sup>&</sup>lt;sup>113</sup> Baylis et al, *supra* note 48 at 365.

On the basis of that working definition, <u>the Government's view is that the proposed</u> <u>mitochondrial donation techniques do not constitute genetic modification</u>.<sup>114</sup> [underlining added; italics in original]

The comparison with organ donation was important as it allowed the UK to build their arguments supporting the exclusion of MRT from the classification of genetic modification. A patient inheriting a healthy organ from an organ donor will share part of that donor's DNA,<sup>115</sup> without being genetically engineered. Indeed, the DNA of the organ does not change to fit the recipient's, hence why the recipient's body perceive organs as foreign.<sup>116</sup> According to the UK, this logic is transposable to mDNA donors, and thus MRT is "more like transplantation than genetic engineering."<sup>117</sup>

In order to radically distinguish MRT from other gene editing technologies, the UK also needed to demonstrate that modifying mDNA was not as controversial as modifying nDNA. To do so, it downplayed the importance of mDNA and put nDNA under the spotlight instead.<sup>118</sup> The UK presented mitochondria as both a foundational and superfluous component of the cell.<sup>119</sup> While mitochondria are essential to the healthy operation of all cells by providing them with energy, their nature and function were downplayed to being only a power pack of the cell.<sup>120</sup> This allowed the

<sup>&</sup>lt;sup>114</sup> UK, Department of Health (DoH): Public Health Directorate/Health Science and Bioethics Division/10250, *Mitochondrial Donation: government response to the consultation on draft regulations to permit the use of new treatment techniques to prevent the transmission of a serious mitochondrial disease from mother to child* (London, 2014); UK, *Mitochondrial Donation* (Research Briefing) Peter Border & Sarah Barber (London, 2015) at 20; Dimond, *supra* note 37 at 178.

<sup>&</sup>lt;sup>115</sup> "Does the DNA of a transplanted organ change to that of the recipient?" (last visited 15 August 2022), online: *BBC Science Focus Magazine* <a href="https://www.sciencefocus.com/the-human-body/does-the-dna-of-a-transplanted-organ-change-to-that-of-the-recipient/">https://www.sciencefocus.com/the-human-body/does-the-dna-of-a-transplanted-organ-change-to-that-of-the-recipient/</a>.

<sup>&</sup>lt;sup>116</sup>*Ibid*.

<sup>&</sup>lt;sup>117</sup> Wilkinson, *supra* note 25.

<sup>&</sup>lt;sup>118</sup> Ilke Turkmendag, "It Is Just a 'Battery': 'Right' to Know in Mitochondrial Replacement" (2018) 43:1 Sci Technol Human Values 56 at 56.

<sup>&</sup>lt;sup>119</sup> Mills, *supra* note 84 at 525.

<sup>&</sup>lt;sup>120</sup> Turkmendag, *supra* note 118 at 56.

UK to conclude that only germline modifications involving nDNA (not mDNA) qualified as gene editing in the UK<sup>121</sup> on the ground that nDNA was more complex than mDNA. Indeed, while mDNA provides power to our cells, nDNA is intricately linked to our identity. Thus, technologies modifying mDNA are less controversial than the ones modifying nDNA.

Germline is anything that is done to DNA that goes through the generations, and mitochondria go from woman to child through the generations. This is clearly a germline modification because it passes through, but we needed to make the distinction between nuclear DNA, which makes us who we are and how we are – our personalities, heights, weights and whether or not we get baldness – and the 37 genes in the mitochondria which are about energy for the cell, and which we describe as the power pack. That was why we adopted that working definition.<sup>122</sup> [underlining added; italics omitted]

The distinction between mDNA and nDNA was later formally integrated in the 2015 MRT Regulations in the definition of "mitochondrial donor" (see section 11(f), *in fine*): "the 'mitochondrial donor' in respect of a person who was or may have been born in consequence of treatment services using such a permitted egg or such a permitted embryo is the person whose mitochondrial DNA (but not nuclear DNA) was used to create that egg or embryo."<sup>123</sup> However, the first time the UK formally recognized this distinction was in 2004.

<sup>&</sup>lt;sup>121</sup> Scott & Wilkinson, *supra* note 19 at 898.

<sup>&</sup>lt;sup>122</sup> *Ibid* at 897–898: quote from Sally Davies, Chief Medical Officer (CMO), illustrating the government's position which can be partially found here (complete interview on file): UK, House of Commons: Science and Technology Committee, *Mitochondrial donation: Correspondence received relating to the evidence hearing on 22 October* 2014, (London, 2014) at 25, para 43.

<sup>&</sup>lt;sup>123</sup> 2015 MRT Regulations, supra note 19, s 11(f) in fine.

In May of 2004, Doug Turnbull and Mary Herbert<sup>124</sup> submitted a research license application to the HFEA Research Licence Committee, the appointed authority under the 1990 Human Fertilization and Embryology Act (HFEA 1990)<sup>125</sup> granting licenses for research involving human gametes and embryos.<sup>126</sup> They wanted to test pronuclear transfer on "abnormally fertilized"<sup>127</sup> human embryos to prevent mDNA disorders. However, on September 15, 2004, the HFEA Research Licence Committee refused to grant the license since it would breach paragraph 3(4) of Schedule 2 of the HFEA 1990 which prohibits "altering the genetic structure of any cell while it forms part of an embryo."<sup>128</sup> On November 1, 2004, Turnbull and Herbert made representations against this decision in front of the same committee, which maintained its decision on the same grounds.<sup>129</sup> Professors Turnbull and Herbert provided oral evidence.<sup>130</sup>

<sup>&</sup>lt;sup>124</sup> James Randerson, "Scientists seek to create 'three-parent' babies" (19 October 2004), online: *New Scientist* <https://www.newscientist.com/article/dn6547-scientists-seek-to-create-three-parent-babies/>. The research license was presented in the name of the Newcastle Fertility Centre at LIFE.

<sup>&</sup>lt;sup>125</sup> Human Fertilisation and Embryology Act (UK), 1990.

<sup>&</sup>lt;sup>126</sup> "HFEA awards licence for pioneering mitochondrial research" (last updated 13 September 2005), online: *European Commission* <a href="https://cordis.europa.eu/article/id/24404-hfea-awards-licence-for-pioneering-mitochondrial-research-">https://cordis.europa.eu/article/id/24404-hfea-awards-licence-for-pioneering-mitochondrial-research->; "Applying for a research licence" (last visited 15 August 2022), online: *Human Fertilisation & Embryology Authority (HFEA)* <a href="https://www.hfea.gov.uk/about-us/applying-for-a-research-licence">https://www.hfea.gov.uk/about-us/applying-for-a-research-licence</a>. The HFEA Research Licence Committee determines whether a license should be granted, suspended, varied or revoked. To this day, researchers in the UK whishing to conduct research on human embryos need to apply for a license, which allows UK's public health authorities to track and maintain a certain oversight of these activities. In the UK, they write "licence" instead of "license", which is why a "c" is used in quotations and for names, but an "s" in used in free text.

<sup>&</sup>lt;sup>127</sup> D T Brown et al, "Transmission of mitochondrial DNA disorders: possibilities for the future" (2006) 368:9529 Lancet 87 at 89.

<sup>&</sup>lt;sup>128</sup> UK, Human Fertilisation and Embryology Authority (HFEA) Research Licence Committee, *Minutes of the Meeting* (London, 15 September 2004) at 2; *Human Fertilisation and Embryology Act, supra* note 123; James Lawford Davies, "The Regulation of Human Germline Genome Modification in the United Kingdom" in *Human Germline Genome Modification and the Right to Science: A Comparative Study of National Laws and Policies*, ed by Andrea Boggio, Cesare P R Romano & Jessica Almqvist (Cambridge: Cambridge University Press, 2020) 217. A freedom of information request had to be filed in order to obtain a copy of the minutes of the decision. Indeed, the document is not available to the public. See footnote 60 of the last source.

<sup>&</sup>lt;sup>129</sup> UK, Human Fertilisation and Embryology Authority (HFEA) Research Licence Committee, *Minutes of the Meeting* (London, 24 November 2004) at 4; UK, HC Deb *Human Embryo Experiments: Licensing* (29 January 2008), vol 471, col 343WA (Dawn Primarolo).

<sup>&</sup>lt;sup>130</sup> HFEA Research Licence Committee, *supra* note 129 at 1.

The Appeal Committee heard the appeal on September 1, 2005.<sup>131</sup> It reviewed the request by verifying whether the methods offered by the research license application breached any provisions of the HFEA 1990. More specifically, the Appeal Committee examined Schedule 2 paragraph 3(4) HFEA 1990 which stated:<sup>132</sup>

A licence under this paragraph cannot authorise altering the genetic structure of any cell while it forms part of an embryo, except in such circumstances (if any) as may be specified in or determined in pursuance of regulations.<sup>133</sup>

The Appeal Committee deemed the expression "genetic structure" ambiguous since there was "no accepted or standard definition of the phrase within the scientific community."<sup>134</sup> Given this lack of consensus, the Appeal Committee decided to interpret the litigious expression. It came up with the following clarifications, allegedly in accordance with the parliamentarians' intent:<sup>135</sup> "[a] genetic structure [should have a] relatively narrow definition [and] would centre on the expression of nuclear genes that result in heritable characteristics."<sup>136</sup>

The Appeal Committee also chose to take into consideration the "usual meaning given by a lay person in relation to the word 'genetic' which [included] the expectation that an 'alteration to the genetic structure' [involved] the alteration to the genes or the genome and the resulting heritable characteristics."<sup>137</sup> When it applied this second interpretation to the research license, the Appeal Committee agreed "that mitochondrial DNA [wa]s not associated with identity or any pre-

<sup>&</sup>lt;sup>131</sup> UK, Human Fertilisation and Embryology Authority (HFEA) Research Licence Committee, *Decision of the Appeal Committee at the Hearing of the Appeal by the Newscastle Centre at LIFE* (London, 1 September 2005). <sup>132</sup> Scott & Wilkinson, *supra* note 19 at 898.

Scou & Wikiison, *supra* note 19 at 696.

<sup>&</sup>lt;sup>133</sup> Human Fertilisation and Embryology Act, supra note 125.

<sup>&</sup>lt;sup>134</sup> HFEA Research Licence Committee, *supra* note 131 at 5, para 2.1.

<sup>&</sup>lt;sup>135</sup> Scott & Wilkinson, *supra* note 19 at 899.

<sup>&</sup>lt;sup>136</sup> HFEA Research Licence Committee, *supra* note 131 at 6, para 2.3.

<sup>&</sup>lt;sup>137</sup> *Ibid*, para 2.4.

determined characteristics of the individual."<sup>138</sup> Following the presentation of the evidence, the Appeal Committee concluded that the proposed procedure was not "altering the genetic structure of any cells while it form[ed] part of an embryo"<sup>139</sup> and thus did not go against the prohibition of Schedule 2 paragraph 3(4) HFEA 1990.<sup>140</sup>

The distinction between mDNA and nDNA as well as the association between nDNA and heritable traits was at the centre of the Appeal Committee's analysis. Since the procedure proposed by Turnbull and Herbert had an impact on mDNA and not nDNA, the Appeal Committee granted them with a license for pronuclear transfer in 2005.<sup>141</sup> This case is important as it incorporates the distinction between mDNA and nDNA into the legal conversation. Building on this distinction, the UK government was able to distinguish MRT from other genetic technologies, which resulted in its legalization.

However, not everyone agrees with the UK's classification of MRT. Members of the scientific community have accused the UK government of deceiving and misleading the public in order to legalize MRT.<sup>142</sup> The deception allegedly lies in the UK government's qualification of MRT as germline but not genetic modification. Not all countries make this distinction. In the United States for instance, the US Institute of Medicine, National Academic of Sciences, Engineering and Medicine (IOM) considers that with regard to MRT, there are no distinctions between genetic and germline modification, MRT is both. According to the IOM, genetic modification is a "chang[e]

<sup>&</sup>lt;sup>138</sup> *Ibid*, para 2.7.

<sup>&</sup>lt;sup>139</sup> *Ibid* at 7, para 2.12.

<sup>&</sup>lt;sup>140</sup> Human Fertilisation and Embryology Act, supra note 125.

<sup>&</sup>lt;sup>141</sup> HFEA Research Licence Committee, *supra* note 131 at 9; *Human Embryo Experiments: Licensing, supra* note 129; Brown et al, *supra* note 127 at 89; Bredenoord, Pennings & de Wert, *supra* note 24 at 669.

<sup>&</sup>lt;sup>142</sup> Dimond, *supra* note 37 at 178; Steve Connor, "Exclusive: Scientists accuse government of dishonesty over GM babies in its regulation of new IVF technique" (28 July 2014), online: *The Independent* 

<sup>&</sup>lt;https://www.independent.co.uk/news/science/exclusive-scientists-accuse-government-dishonesty-over-gm-babies-its-regulation-new-ivf-technique-9631807.html>.

to the genetic material within a cell."<sup>143</sup> Since MRT produces a "genetic modification of the oocyte [i.e., a cell in an ovary] or zygote [i.e., fertilized egg],"<sup>144</sup> it fits the criteria for genetic modification. As for germline modification, the Food and Drug Administration (FDA) defines it as a "human inheritable genetic modification."<sup>145</sup> MRT also falls into that category if the child born through MRT is female, given the heritability pattern of mDNA.<sup>146</sup> Given the controversy associated with genetic and germline modification, MRT is subject to a congressional ban in the United States.<sup>147</sup>

Beyond the question of the legality of MRT, there is also the question of its impact on filiation. Even in a country banning MRT, filiation issues may arise in the context of other ARTs involving other genetic technologies. We argue that regardless of the technology at play, genetic ties in themselves are insufficient to establish parenthood.

## C. The Modern Family Is Built on a combination of both the Intentional and Biological Accounts of Parenthood

Parenthood is a complex phenomenon that comes in many variations that "are deeply ingrained in cultural discourse and in legislation."<sup>148</sup> It is important to understand the different accounts of parenthood, i.e., biological, causal, and intentional, as they influence family laws and, ultimately, ARTs regulations. Although there is value in the biological/genetic relationship offspring may share with their gamete/DNA donors, we argue that biology alone is insufficient to establish parenthood. Indeed, the modern family is based on a combination of both the intentional and

<sup>&</sup>lt;sup>143</sup> US, Institute of Medicine (IOM) et al, *Mitochondrial Replacement Techniques: Ethical, Social, and Policy Considerations* (Consensus Study Report) (Washington, D.C.: The National Academies Press, 2016) at 88; Scott & Wilkinson, *supra* note 19 at 903.

<sup>&</sup>lt;sup>144</sup> Institute of Medicine (IOM) et al, *supra* note 143 at 88; Scott & Wilkinson, *supra* note 19 at 903.

<sup>&</sup>lt;sup>145</sup> Institute of Medicine (IOM) et al, *supra* note 143 at 88–89; Scott & Wilkinson, *supra* note 19 at 903. <sup>146</sup> *Ibid.* 

<sup>&</sup>lt;sup>147</sup> Consolidated Appropriations Act, supra note 47, s 736; Park, supra note 10; Kaiser, supra note 47.

<sup>&</sup>lt;sup>148</sup> Danielle Griffiths, "The (Re) Production of the Genetically Related Body in Law, Technology and Culture: Mitochondria Replacement Therapy" (2016) 24:3 Health Care Anal 196 at 200.
biological accounts of parenthood. In the Canadian legal ecosystem, this combination can be explained as such: genetics and biology are more predominant in family law, in general, while the intentional account is favoured in the context of assisted reproduction.

#### i. Introduction to the Accounts of Parenthood

The biological account of parenthood exists either through genetic relatedness (genetic parent) or through the gestational environment (gestational parent). A genetic link is one of the several foundations of parenthood.<sup>149</sup> According to author Danielle Griffiths, the genetic link is at the core of kinship in Western societies:

Kinship systems in the West have traditionally been based on the 'social interpretation of the 'biological' fact of reproduction' and western definitions of kinship refer to genetic categorisation of bodies as means for defining a parent and their child. [...] <u>While parenthood</u> is increasingly established through gestational and/or social links, the importance of genetic links between parents and their children has been and is still central to the formation of kinship bonds and identity in Western societies both in culture and law. The cultural discourse of genetics works to "stabilize a narrow and powerful definition of motherhood and fatherhood based on testable biological attributes."<sup>150</sup> It validates some versions of parenthood (genetic) just as it invalidates others (non-genetic) and it has resulted in a specific type of parenthood that is defined through seemingly fixed and law like biological attributes.<sup>151</sup> [emphasis added]

 <sup>&</sup>lt;sup>149</sup> Michael W Austin, "The Failure of Biological Accounts of Parenthood" (2004) 38:4 J Value Inq 499 at 499–500.
 <sup>150</sup> Aaron T Norton & Ozzie Zehner, "Which Half Is Mommy? Tetragametic Chimerism and Trans-Subjectivity" (2008) 36:3/4 Womens Stud 106 at 106.

<sup>&</sup>lt;sup>151</sup> Griffiths, *supra* note 148 at 199.

A genetic parent is "someone who is a direct genetic source of a child,"<sup>152</sup> which is not necessarily the case of the gestational parent who may only be carrying the child.<sup>153</sup> Genetic ties are insufficient in themselves to establish parental rights or authority, however.<sup>154</sup> Indeed, siblings may share genetic ties but are not each other's parents. The same logic applies to an organ donor and their recipient. No kinship is created by law as a result of this shared genetic material.<sup>155</sup>

A gestational parent is "a person who gestated the child (foetus)"<sup>156</sup> without necessarily having a genetic link to the child. In certain cases, there may be a legal and social presumption of parenthood established in favour of the parent who bore and gave birth to the child.<sup>157</sup> The gestational environment has a considerable influence on the development of the fetus. Indeed, a child does not inherit all of their traits and characteristics from their genetic baggage. In fact, the gestational parent provides the first environment which will shape the child's identity by affecting "how [their] genetic material expresses itself."<sup>158</sup>

Modern societies generally perceive the biological account as insufficient to establish parenthood. In order to complete the framework for parenthood, let us introduce the causal and intentional accounts of parenthood.

A causal parent is someone who "caus[ed] someone [else] to exist."<sup>159</sup> According to this account, a person assigned male at birth who unintentionally brought children into the world

<sup>&</sup>lt;sup>152</sup> Kolers & Bayne, *supra* note 22 at 273.

<sup>&</sup>lt;sup>153</sup> *Ibid* at 274.

<sup>&</sup>lt;sup>154</sup> Austin, *supra* note 149 at 499.

<sup>&</sup>lt;sup>155</sup> Mills, *supra* note 84 at 512.

<sup>&</sup>lt;sup>156</sup> Kolers & Bayne, *supra* note 22 at 273.

<sup>&</sup>lt;sup>157</sup> Austin, *supra* note 149 at 500; Susan Feldman, "Multiple Biological Mothers: The Case for Gestation" (1992)

<sup>23:1</sup> J Soc Philos 98 at 98.

<sup>&</sup>lt;sup>158</sup> Austin, *supra* note 149 at 500; Feldman, *supra* note 157 at 98. With regard to the identity of the child, many additional environmental factors can have an impact in shaping it.

<sup>&</sup>lt;sup>159</sup> Lindsey Porter, "Why and How to Prefer a Causal Account of Parenthood" (2014) 45:2 J Soc Philos 182 at 182.

through sexual intercourse should be responsible for them.<sup>160</sup> In the name of the best interest of the child, this is how fatherhood and child support have long been attributed.<sup>161</sup> However, in the context of ARTs, we reject the causal account since it automatically attributes parenthood to progenitors (i.e., gamete donors) and excludes from parenthood non-genetic but intentional parents (i.e., adoptive parents).<sup>162</sup>

The voluntarist (intentional) account of parenthood is a more appropriate account of parenthood, especially in the context of ARTs since it helps distinguish between genetic donors and intentional parents. It consists of attributing parental rights and obligations to an individual who has consented to or volunteered for them.<sup>163</sup> The foundation of the intentional account is that parental obligations are chosen rather than unilaterally imposed.<sup>164</sup> The idea here is not to depict parental obligations as optional, but rather to attribute parenthood to intentional parents instead of donors of genetic material (i.e., progenitors) who do not have the intention to be a parent to the child conceived through assisted reproduction.<sup>165</sup>

Both the causal and intentional accounts of parenthood are flawed. The causal account automatically attributes parenthood to progenitors instead of non-genetic intentional parents and the intentional account inappropriately depicts parental obligations as optional.<sup>166</sup> However, in the context of ARTs, we agree with author Elizabeth Brake that the intentional account of parenthood

<sup>&</sup>lt;sup>160</sup> Elizabeth Brake, "Fatherhood and Child Support: Do Men Have a Right to Choose?" (2005) 22:1 J Appl Philos 55–73 at 55.

<sup>&</sup>lt;sup>161</sup> *Ibid*.

<sup>&</sup>lt;sup>162</sup> Porter, *supra* note 159 at 182.

<sup>&</sup>lt;sup>163</sup> *Ibid*.

<sup>&</sup>lt;sup>164</sup> James Lindemann Nelson, "Parental Obligations and the Ethics of Surrogacy: A Causal Perspective" (1991) 5:1 PAQ 49 at 50.

<sup>&</sup>lt;sup>165</sup> Porter, *supra* note 159 at 182.

<sup>&</sup>lt;sup>166</sup> *Ibid.* See generally Elizabeth Brake, "Willing Parents: A Voluntarist Account of Parental Role Obligations" in *Procreation Parent Ethics Bear Rearing Child*, ed by David Archard & David Benatar (Oxford: Oxford University Press, 2010).

is a stronger account and thus, should be preferred.<sup>167</sup> Indeed, according to her, the causal account ignores the nature of parenthood itself, which is a social construct, and she disagrees that causing someone's existence should necessarily equate in owing them care.<sup>168</sup>

Genetics has shaped our social construction of the family by formally legitimizing "biology in the formulation of rights and obligations."<sup>169</sup> However, it has been demonstrated many times that rights and obligations pertaining to parental authority are not always the responsibility of the biological parent.<sup>170</sup> Adoption is a telling example. In the name of the interest of the child, a social relationship may prevail over a biological link. So, while many elements can be factored in the well-being of a child, genetic relatedness is not always an essential one.<sup>171</sup> According to Françoise Baylis, building families is a social act rather than a biological one.<sup>172</sup> As Baylis once stated, "family-making [is about] establishing loving, caring, nurturing relationships with one's child(ren) independent of biological relationships or genetic ties."<sup>173</sup> Indeed, the intention to be designated as a parent to a child weighs considerably more as laws are adapting to reconstituted families, nonheterosexual partnerships and ARTs. However, in the case of heterosexual relationships, courts still have a tendency to turn to biology/genetics and not intent to make a man the father. For instance, the existence of both art 535.1 and 538.2(2) CCQ illustrates this tendency in Quebec, where biology may become central for courts when attributing parentage.<sup>174</sup> Thus, the modern family is based on a mixed of both the intentional and biological accounts of parenthood.

<sup>&</sup>lt;sup>167</sup> Porter, *supra* note 159 at 182-183. See generally Brake, *supra* note 166.

<sup>&</sup>lt;sup>168</sup> Porter, *supra* note 159 at 182–183; Brake, *supra* note 158 at 55. See generally Brake, *supra* note 164.

<sup>&</sup>lt;sup>169</sup> Caulfield, *supra* note 87 at 100.

<sup>&</sup>lt;sup>170</sup> *Ibid* at 94.

<sup>&</sup>lt;sup>171</sup> *Ibid* at 100.

<sup>&</sup>lt;sup>172</sup> Françoise Baylis, "Human Nuclear Genome Transfer (So-Called Mitochondrial Replacement): Clearing the Underbrush" (2016) 31:1 Bioethics 7 at 14.

<sup>&</sup>lt;sup>173</sup> *Ibid*.

<sup>&</sup>lt;sup>174</sup> Arts 535.1 and 538.2(2) CCQ.

To further examine parenthood in the context of ARTs and more specifically, MRT, we will dive into the 2015 MRT Regulations where the UK government provides explicit provisions on parenthood.

#### ii. Accounts of Parenthood in the UK

Under the 2015 MRT Regulations, there are "no legal obligation[s]" between mDNA donors and MRT babies.<sup>175</sup> In other words, mDNA donors are not related to children born through MRT in the UK.<sup>176</sup> According to the "Explanatory Note" of the 2015 MRT Regulations:

The Regulations modify the 1990 Act to clarify that mitochondrial donors are not related to any children who were, or might have been, born following treatment services using their donation and therefore no provision is made to allow access to information in connection with entering a marriage, civil partnership or intimate physical relationship, nor to access information about other children who share the same donor.<sup>177</sup>

One of the reasons behind the exclusion of mDNA donors as legal parents is that their genetic contribution to the child is not as important as the one of both nDNA donors, i.e., the egg and sperm donors:

Genetically, the child will, indeed, have DNA from three individuals but all available scientific evidence indicates that the genes contributing to personal characteristics and traits come solely from the nuclear DNA, which will only come from the proposed child's mother and father. The donated mitochondrial DNA will not affect those characteristics.<sup>178</sup>

<sup>&</sup>lt;sup>175</sup> Dimond, *supra* note 37 at 177.

<sup>&</sup>lt;sup>176</sup> 2015 MRT Regulations, supra note 19, s 12.

<sup>&</sup>lt;sup>177</sup> *Ibid*; House of Commons: Science and Technology Committee, *supra* note 122 at 20–25.

<sup>&</sup>lt;sup>178</sup> Department of Health (DoH), *supra* note 114 at 15; Dimond, *supra* note 37 at 176–177.

In short, under the 2015 MRT Regulations, mDNA donors "are *not* accorded the same legal status as other gamete donors."<sup>179</sup> To further illustrate this position, the 2015 MRT Regulations modifies section 54 of the 2008 HFEA<sup>180</sup> in such way that "where a child has been born following treatment services a person who donated mitochondria is not eligible to apply for a parental order on the basis of that donation alone."<sup>181</sup> In other words, mDNA donation is not sufficient "for making a parental claim."<sup>182</sup>

Outside of the context of MRT, the UK also uses causal and intentional accounts to establish parenthood. For instance, a parental order can be filled under the HFEA 2008<sup>183</sup> where "the gametes of at least one of the applicants were used to bring about the creation of the embryo."<sup>184</sup> The use of the expression "bring about" refers to the causal relationship between the gamete donor and the child, typical of causal parenthood.<sup>185</sup> The UK legislation also attributes parenthood on an intentional account by, for instance, formally recognizing same sex couples' unions, recognizing as a second parent the partner of the gestational parent,<sup>186</sup> and allowing intending parents to fill a parental claim.<sup>187</sup> Hence, in the UK, genetic ties are neither essential nor sufficient in themselves to attribute parenthood.<sup>188</sup>

<sup>&</sup>lt;sup>179</sup> Mills, *supra* note 84 at 515. Italics in the original citation.

<sup>&</sup>lt;sup>180</sup> Human Fertilisation and Embryology Act (UK), 2008.

<sup>&</sup>lt;sup>181</sup> UK, Department of Health (DoH), *Explanatory Notes: SI 2015/572 Human Fertilisation and Embryology* (*Mitochondrial Donation*) Regulations 2015 (SI 2015/572) (2015).

<sup>&</sup>lt;sup>182</sup> Mills, *supra* note 84 at 515.

<sup>&</sup>lt;sup>183</sup> Human Fertilisation and Embryology Act, supra note 177, s 54.

<sup>&</sup>lt;sup>184</sup> Ibid.

<sup>&</sup>lt;sup>185</sup> Mills, *supra* note 84 at 514.

<sup>&</sup>lt;sup>186</sup> Human Fertilisation and Embryology Act, supra note 177, ss 42–46.

<sup>&</sup>lt;sup>187</sup> *Ibid*, s 54.

<sup>&</sup>lt;sup>188</sup> Griffiths, *supra* note 148 at 201.

The status of the mDNA donor is an important issue in the context of MRT.<sup>189</sup> Were mDNA donors to acquire the status of legal parents on the sole basis of their genetic contribution to the embryo, the law would impose on them responsibilities they may not wish to take on. To avoid this outcome as well as unexpected parental claims from gamete or DNA donors, some countries ensure the anonymity of donors in general. However, in the UK, the identity of gamete donors in ARTs, i.e., egg or sperm donor, is known, while mDNA donors remain anonymous in the context of MRT.<sup>190</sup> Author John B. Appleby has argued that both categories of donors should be treated the same way, i.e., mDNA donors' identity should also be known.<sup>191</sup> Indeed, according to Appleby, mDNA donors and gamete donors are "similar in the basic sense that they involve the contribution of gamete materials to create future persons."<sup>192</sup> For that reason, they should be treated equally under law. For the benefit of our discussion on parenthood, we adopt Appleby's argument and also consider mDNA donors and gamete donors to be similar. Nevertheless, the UK has chosen to protect the identity of mDNA donors so far.<sup>193</sup>

### iii. Canadian Civil Law: Quebec and the Parental Project

In Canada, the status of mDNA donors is not specifically addressed since MRT is a procedure falling under a criminal ban.<sup>194</sup> As for the general status of gamete or DNA donors in ARTs, it is determined by each province. Indeed, in Canada, filiation rules are under provincial authority.<sup>195</sup> Relevant provincial laws include rules governing the establishment of filiation in the context of

<sup>&</sup>lt;sup>189</sup> Eric Blyth et al, "Donor-conceived people's views and experiences of their genetic origins: a critical analysis of the research evidence" (2012) 19:4 J Law Med 769 at 769. See generally UK, Nuffield Council on Bioethics (NCoB), *Donor conception: ethical aspects of information sharing* (London, 2013).

<sup>&</sup>lt;sup>190</sup> Appleby, *supra* note 104 at 261–262.

<sup>&</sup>lt;sup>191</sup> *Ibid* at 261.

<sup>&</sup>lt;sup>192</sup> *Ibid*.

<sup>&</sup>lt;sup>193</sup> 2015 MRT Regulations, supra note 19, s 11.

<sup>&</sup>lt;sup>194</sup> Assisted Human Reproduction Act, SC 2004, c. 2 at 5.

<sup>&</sup>lt;sup>195</sup> Constitution Act, supra note 20, s 92(16). While marriage and divorce are of federal competence (*ibid*, s 91(26)).

ARTs. The *Civil Code of Quebec* (CCQ)<sup>196</sup> applies to this issue in Canada's civil law province, Quebec.

Regarding filiation in the context of ARTs in general, articles 538 and 538.2(1) CCQ show that the mere fact of sharing genetic material as a result of ARTs is not a sufficient foundation to establish filiation under Quebec law.<sup>197</sup> Even in the context described at article 535.1 CCQ, there needs to be a "commencement of proof" that would allow the court to rely on a biological sample to establish filiation.<sup>198</sup> In the case of assisted reproduction, filiation is addressed at article 538.2(1) CCQ which explicitly excludes donors from the status of parents: "[t]he contribution of genetic material to the parental project of another cannot be the basis for any bond of filiation between the contributor and the child consequently born."<sup>199</sup>

As for the parental project, it is a concept developed under article 538 CCQ:

538. A parental project involving assisted procreation exists from the moment a person alone decides or spouses by mutual consent decide, in order to have a child, to resort to the genetic material of a person who is not a party to the parental project.<sup>200</sup>

The parental project is used as evidence to identify intending parents.<sup>201</sup> Indeed, the legislator uses words such as "decides" and "mutual consent" which illustrate that intention is a required element in order to be part of the parental project. This was confirmed by the Quebec Court of Appeal in a 2011 case that clarified the three essential components of the 'parental project':

<sup>&</sup>lt;sup>196</sup> Civil Code of Quebec, CCQ-1991 [CCQ].

<sup>&</sup>lt;sup>197</sup> Arts 538 and 538.2(1) CCQ.

<sup>&</sup>lt;sup>198</sup> Art 535.1 CCQ.

<sup>&</sup>lt;sup>199</sup> Art 538.2(1) CCQ.

<sup>&</sup>lt;sup>200</sup> Art 538 CCQ.

<sup>&</sup>lt;sup>201</sup> Comité consultatif sur le droit de la famille, *Pour un droit de la famille adapté aux nouvelles réalités conjugales et familiales* (Montreal, 2015) at 160.

Section 538 C.C.Q. sets out the three necessary elements for there to be a "parental project involving assisted procreation." The first two do not pose any difficulty: (1) a person alone decides or spouses decide to have a child; (2) to do so, the person decides or the spouses decide to resort to the genetic material of a third party. As for the third, the provision does clearly state the underlying condition. The third party must not be a party to the parental project. [...]<sup>202</sup>

The third party to which the court refers to agrees to limit their role to providing genetic material to the parental project,<sup>203</sup> without however being part of the parental project. In other words, the third party does not (and must not) intend to be a parent to the child conceived through assisted reproduction. Consequently, we conclude that the mere fact of sharing genetic material as a result of ARTs is not a sufficient foundation to establish filiation under Quebec law.

An exception is provided for at article 538.2(2) CCQ<sup>204</sup> where the contribution of genetic material is provided by way of sexual intercourse. In such situation, "a bond of filiation may be established, in the year following the birth, between the contributor and the child."<sup>205</sup> During this period, "the spouse of the woman who gave birth"<sup>206</sup> cannot oppose the establishment of filiation with the person who contributed their genetic material. Given the above and as reported by author LaViolette, "it appears that [in certain cases] biology may trump an actual parental relationship,"<sup>207</sup> exposing a tension in Quebec between intentional and biological parenthood.<sup>208</sup> Scholars have criticized this preferential treatment reserved for the sperm donor, as if shared intimacy is enough

<sup>&</sup>lt;sup>202</sup> Droit de la famille — 111729, 2011 QCCA 1180 at para 41. Leave to appeal dismissed *L.B. et al. v. G.N. et al*, 2012 CanLII 9750 (CSC).

<sup>&</sup>lt;sup>203</sup> *Ibid* at para 42.

<sup>&</sup>lt;sup>204</sup> Art 538.2(2) CCQ.

<sup>&</sup>lt;sup>205</sup> Ibid.

<sup>&</sup>lt;sup>206</sup> *Ibid*.

<sup>&</sup>lt;sup>207</sup> Nicole LaViolette, "Dad, Mom — and Mom: The Ontario Court of Appeal's Decision in A.A. v. B.B." (2008)
86:3 Can Bar Rev 665 at 681.

<sup>&</sup>lt;sup>208</sup> *Ibid* at 682.

to restore a right that was initially lost by undergoing assisted reproduction at article 538.2(1) CCQ.<sup>209</sup> This exception does not exist in Ontario and British Columbia.

#### iv. Canadian Common Law: Intending Parents in Ontario and British Columbia

In many common law provinces, donors of reproductive material similarly do not acquire the status of legal parents only by providing their DNA. This is explicitly confirmed in five Canadian jurisdictions.<sup>210</sup> For instance, Ontario's *Children's Law Reform Act* (CLRA)<sup>211</sup> states that in the context of ARTs, a donor of reproductive material shall not be considered a legal parent solely by their biological contribution to the embryo.<sup>212</sup> The same stands in British Columbia where the *Family Law Act* (FLA)<sup>213</sup> also specifies that a court cannot declare the donor to be the child's parent by reason only of the donation.<sup>214</sup>

Instead, intentional accounts of parenthood are favoured in both Ontario and British Columbia in the context of assisted reproduction. Indeed, Ontario's CLRA provisions provide for a written agreement between intending parents<sup>215</sup> and similar provisions appear in British Columbia.<sup>216</sup> The language used in the CLRA as well as the FLA further supports our position. To attribute parenthood under the CLRA, the legislator used words such as "intention,"<sup>217</sup> "agreement,"<sup>218</sup> "intended parent,"<sup>219</sup> and "interest."<sup>220</sup> Under the FLA, we observe similar expressions:

<sup>&</sup>lt;sup>209</sup> Marie Pratte, "La filiation réinventée : l'enfant menacé ?" (2014) 33:4 RGD 541 at 576; LaViolette, *supra* note 207 at 681–682; Art 538.2(1) CCQ.

<sup>&</sup>lt;sup>210</sup> Wanda A Wiegers, "Assisted Conception and Equality of Familial Status in Parentage Law" (2014) 28:2 Can J Fam L 147 at 199.

<sup>&</sup>lt;sup>211</sup> Children's Law Reform Act, RSO 1990, c C.12.

<sup>&</sup>lt;sup>212</sup> *Ibid*, s 5.

<sup>&</sup>lt;sup>213</sup> Family Law Act, SBC 2011, c 25.

<sup>&</sup>lt;sup>214</sup> *Ibid*, s 24(1).

<sup>&</sup>lt;sup>215</sup> Children's Law Reform Act, supra note 211, s 9.

<sup>&</sup>lt;sup>216</sup> *Family Law* Act, *supra* note 213, s 30(1).

<sup>&</sup>lt;sup>217</sup> Children's Law Reform Act, supra note 211, s 2(4).

<sup>&</sup>lt;sup>218</sup> *Ibid*, ss 9(1), 10.

<sup>&</sup>lt;sup>219</sup> *Ibid*, s 10.

<sup>&</sup>lt;sup>220</sup> *Ibid*, s 13(1).

"agreement" and "intended parent(s)."<sup>221</sup> In the context of ARTs, the willingness to become a parent is at the core of Ontario and British Columbia family statutes.

In Canadian assisted reproduction, genetic or biological relationships are insufficient grounds in themselves to establish parenthood. Instead, as reported by Wanda A. Wiegers, intentional accounts of parenthood are preferred in a majority of jurisdictions.<sup>222</sup> Generally, cases of assisted reproduction seem to consider that "parental intentions and actions may trump genetics"<sup>223</sup> when attributing parenthood. However, when we compare the Quebec regime to the ones of Ontario and British Columbia, we observe a lack of harmonization of filiation rules across Canada. Indeed, in Canadian family law, more broadly, biology seems to prevail in certain circumstances like the Quebec exception at article 538.2(2) CCQ.<sup>224</sup> Such inconsistencies create uncertainty and may push intending parents to turn to anonymous donors to "ensur[e] familial security"<sup>225</sup> and protect themselves from future unexpected declarations of parentage.

The above analysis demonstrates that in the context of MRT, the mDNA donor would not acquire the status of legal parent in Canada purely based on their genetic contribution to the embryo. Indeed, not only is this genetic contribution insufficient to establish any legal relationship with the child but providing genetic material does not necessarily equate with the intention of being

<sup>&</sup>lt;sup>221</sup> Family Law Act, supra note 213, s 30(1).

<sup>&</sup>lt;sup>222</sup> Wiegers, *supra* note 210 at 199.

<sup>&</sup>lt;sup>223</sup> Stefanie Carsley, "DNA, Donor Offspring and Derivative Citizenship: Redefining Parentage under the Citizenship Act" (2016) 39:2 Dalhousie LJ 525 at 548. See generally Fiona Kelly, "Equal Parents, Equal Children: Reforming Canada's Parentage Laws to Recognize the Completeness of Women-Led Families Forum Topic Articles" (2013) 64 UNBLaw J 253; Wiegers, *supra* note 210; Angela Campbell, "Conceiving Parents Through Law" (2007) 21:2 Int J Law Policy Family 242; Susan B Boyd, "Gendering Legal Parenthood: Bio-Genetic Ties, Intentionality and Responsibility" (2007) 25:1 Windsor YB Access Just 63.

<sup>&</sup>lt;sup>225</sup> Wiegers, *supra* note 210 at 199; Vanessa Gruben & Angela Cameron, "Donor Anonymity in Canada: Assessing the Obstacles to Openness and Considering a Way Forward" (2017) 54:3 AltaL Rev 665 at 674.

involved in the child's life as a parent. However, the mDNA donor can attempt to be declared a legal parent through other means offered in family laws outside of ARTs.

## IV. CHAPTER III: CURRENT LEGAL FRAMEWORKS OF FAMILY LAW ARE BUILT ON A BINOMIAL FOUNDATION

Another reason why MRT does not create triparental babies in the eyes of the law is that, generally, both the UK and Canadian legal ecosystems reinforce a biparental and heteronormative model of the nuclear family. This can be seen particularly in the context of ARTs for the UK and Canada, where legal fictions traditionally copy the basic genetic framework of parenthood. Indeed, UK and Canada laws construct families on the normative model of one "mother" (egg donor) and one "father" (sperm donor). But the reality is much more complex. For instance, Angela Campbell demonstrates in a 2007 paper<sup>226</sup> that conception arrangements can have over twenty variations according to the different possible combinations of recipients and contributors of reproductive material.<sup>227</sup> Indeed, the introduction of ARTs in fertility treatments opened the door to a "wider variety of family forms"<sup>228</sup> considering the multiple actors involved. But Canadian society has yet to go as far as formally acknowledging multi-parental families. Some Canadian provinces have demonstrated an openness to the idea, but this legal recognition only recently started to be formally integrated into family laws. The legal landscape in the UK is no different.

<sup>&</sup>lt;sup>226</sup> Campbell, *supra* note 223. See Table 1. Permutations of Conceptual Arrangements.

<sup>&</sup>lt;sup>227</sup> Ibid.

<sup>&</sup>lt;sup>228</sup> Carsley, *supra* note 223 at 548; Fiona Kelly, "Multiple-Parent Families under British Columbia's New Family Law Act: A Challenge to the Supremacy of the Nuclear Family or a Method by Which to Preserve Biological Ties and Opposite-Sex Parenting" (2014) 47:2 UBC L Rev 565 at 565.

# A. UK Family Laws and 2015 MRT Regulations Reproduce Binomial Views of the Nuclear Family

UK family laws reproduce a heteronormative and binomial model of the nuclear family,<sup>229</sup> mostly to avoid shockwaves in family laws. Indeed, during the review of the 1990 HFEA leading to the 2008 HFEA, there was a consensus that it would be out of place for a governmental department of health to intervene in family law matters and modify the rules in place.<sup>230</sup> Instead, the provisions of the 2008 HFEA<sup>231</sup> outlining legal parenthood for the different uses of ARTs,<sup>232</sup> were drafted in accordance with existing "common sense views of the family."<sup>233</sup> According to authors Julie McCandless and Sally Sheldon, "common sense views" of the family reinforce the traditional and conservative two-parent nuclear family picture.<sup>234</sup> Indeed, the language of the 2008 HFEA often refers to both the "mother" and "father" of the child. For instance, section 33 is titled "meaning of mother" while sections 35-41 are titled "meaning of father."<sup>235</sup>

For heterosexual couples, the 2008 HFEA considers the mother as the gestational parent,<sup>236</sup> "regardless of whether she is the genetic parent or the intended mother."<sup>237</sup> This applies in both surrogacy and artificial insemination scenarios.<sup>238</sup> Adoption is a distinct scenario.<sup>239</sup> As for fatherhood, the 2008 HFEA automatically attributes it to the person married or in a civil

<sup>&</sup>lt;sup>229</sup> Griffiths, *supra* note 148 at 205; Mills, *supra* note 84 at 520. According to Mills, without necessarily being the intent of the 2015 MRT Regulations, the text of the regulations certainly favors this approach.

<sup>&</sup>lt;sup>230</sup> Julie McCandless & Sally Sheldon, "The Human Fertilisation and Embryology Act (2008) and the Tenacity of the Sexual Family Form" (2010) 73:2 ModLR 175 at 175, 181–182.

<sup>&</sup>lt;sup>231</sup> Human Fertilisation and Embryology Act, supra note 180, Part 2.

<sup>&</sup>lt;sup>232</sup> Griffiths, *supra* note 148 at 201.

<sup>&</sup>lt;sup>233</sup> McCandless & Sheldon, *supra* note 230 at 181–182.

<sup>&</sup>lt;sup>234</sup> McCandless & Sheldon, *supra* note 230.

<sup>&</sup>lt;sup>235</sup> Human Fertilisation and Embryology Act, supra note 180.

<sup>&</sup>lt;sup>236</sup> *Ibid*, s 33.

<sup>&</sup>lt;sup>237</sup> Griffiths, *supra* note 148 at 201.

<sup>&</sup>lt;sup>238</sup> Ibid.

<sup>&</sup>lt;sup>239</sup> Human Fertilisation and Embryology Act, supra note 180, s 33(2).

partnership with the gestational mother.<sup>240</sup> However, in the case of an artificial insemination, the law attributes fatherhood to the sperm donor if both the gestational parent and the sperm donor agree that the latter acts as the legal father of the child.<sup>241</sup>

Both the Civil Partnership Act 2004<sup>242</sup> and the Marriage (Same Sex Couples) Act 2013<sup>243</sup> are evidence that the UK legally recognizes family units that are not heterosexual.<sup>244</sup> As a result, within a same sex civil partnership where both partners are women, the 2008 HFEA attributes motherhood to the gestational parent.<sup>245</sup> The 2008 HFEA does not recognize the second parent as a second mother, but rather as a "female parent."<sup>246</sup> The "female parent" is recognized as such through their civil partnership with the gestational parent, replicating the model of attribution of fatherhood.<sup>247</sup> Thus, the status of second parent is dependent on a person's relationship to the gestational mother, not to the child.<sup>248</sup> This is confirmed at section 47 of the 2008 HFEA: "[a] woman is not to be treated as the parent of a child whom she is not carrying and has not carried, except where she is so treated"<sup>249</sup> such as "by virtue of her relationship with the gestational mother."<sup>250</sup>

Finally, in the case of surrogacy, when the gestational parent is not an intentional parent, both intentional parents can apply for a parental order.<sup>251</sup> A parental order is "a fast track form of adoption which extinguishes legal parenthood from the gestational mother/surrogate and grants it

<sup>&</sup>lt;sup>240</sup> *Ibid*, ss 35–37.

<sup>&</sup>lt;sup>241</sup> Griffiths, *supra* note 148 at 201.

<sup>&</sup>lt;sup>242</sup> Civil Partnership Act (UK), 2004.

<sup>&</sup>lt;sup>243</sup> Marriage (Same Sex Couples) Act (UK), 2013

<sup>&</sup>lt;sup>244</sup> Griffiths, *supra* note 148 at 198.

<sup>&</sup>lt;sup>245</sup> Human Fertilisation and Embryology Act, supra note 180, s 42; Griffiths, supra note 148 at 201.

<sup>&</sup>lt;sup>246</sup> Human Fertilisation and Embryology Act, supra note 180, s 42–46; Mills, supra note 84 at 513.

<sup>&</sup>lt;sup>247</sup> Human Fertilisation and Embryology Act, supra note 180, s 42, 53.

<sup>&</sup>lt;sup>248</sup> Mills, *supra* note 84 at 513–514.

<sup>&</sup>lt;sup>249</sup> Human Fertilisation and Embryology Act, supra note 180, s 47.

<sup>&</sup>lt;sup>250</sup> Mills, *supra* note 84 at 514.

<sup>&</sup>lt;sup>251</sup> Human Fertilisation and Embryology Act, supra note 180, s 54.

to the intending parents."<sup>252</sup> Until a court grants the parental order, the gestational mother remains the parent.<sup>253</sup> The binomial architecture of UK family law is further consolidated by sections 54, 54A, and 55 of the 2008 HFEA<sup>254</sup> that allow for up to two applicants for parental orders and do not envision a scenario where a gestational parent may remain in the picture as a third legal parent.<sup>255</sup> In the specific context of MRT, the 2015 MRT Regulations perpetuates this family model. The 2015 MRT Regulations recognize only two parents to the child and explicitly exclude mDNA donors from the category of "parents."<sup>256</sup>

The analysis above shows that even where multiple DNA donors are involved in the array of existing ARTs, children "are still considered to be bi-parental"<sup>257</sup> under UK law. However, not everyone agrees with this position. For instance, Martin H. Johnson argues that the expression "three-parent babies" is appropriate given the triple genetic background of MRT babies.<sup>258</sup> Building on this opinion, international media spread the term "three-parent babies" across many sensationalist headlines following the legalization of MRT in the UK.<sup>259</sup> The increasingly popular expression created debates all over the world. The main question that emerged from these discussions is whether MRT babies should be considered bi- or tri-parental? In the sections below,

<sup>&</sup>lt;sup>252</sup> Griffiths, *supra* note 148 at 201.

<sup>&</sup>lt;sup>253</sup> Mills, *supra* note 84 at 515.

<sup>&</sup>lt;sup>254</sup> Human Fertilisation and Embryology Act, supra note 180, ss 54–55.

<sup>&</sup>lt;sup>255</sup> *Ibid*, s 54.

<sup>&</sup>lt;sup>256</sup> 2015 MRT Regulations, supra note 19, s 12.

<sup>&</sup>lt;sup>257</sup> Jacques Cohen & Mina Alikani, "The biological basis for defining bi-parental or tri-parental origin of offspring from cytoplasmic and spindle transfer" (2013) 26:6 Reprod Biomed Online 535 at 535.

<sup>&</sup>lt;sup>258</sup> Martin H Johnson, "Tri-parenthood – a simply misleading term or an ethically misguided approach?" (2013) 26:6 Reprod Biomed Online 516 at 516.: "[...] it is undeniable that there is a genetic element to parenthood in at least some of the ooplasmic transfer offspring, and in that sense the qualified use of the term 'tri-parental' is legitimate in the circumstances under discussion. I also question the negative 'spin' put on the term 'tri-parental' by parts of the press – after all for many families, divorce and remarriage has resulted in multi-parental families and are all of these to be categorized as 'monstrous' aberrations of nature? I think not."

<sup>&</sup>lt;sup>259</sup> Randerson, *supra* note 124; Gander, *supra* note 19; Forough Noohi, Miranda Li & Yann Joly, "Clinical translation of mitochondrial replacement therapy in Canada: a qualitative study of stakeholders' attitudes" (2021)
6:1 Facets 449 at 457; Cristina Riquelme Vano, "The Making of Three-Parent Babies" (5 February 2021), online: *Imperial Bioscience Review (IBR)* <a href="https://imperialbiosciencereview.com/2021/02/05/the-making-of-three-parent-babies/">https://imperialbiosciencereview.com/2021/02/05/the-making-of-three-parent-babies/</a>>.

we examine the Canadian legal landscape in provincial parentage laws and attempt to predict their answer.

#### **B.** Canadian Assisted Reproduction and Familial Variations

The UK seems to be a couple of steps ahead of Canada in terms of ARTs. Indeed, the HFEA 1990 was one of the world's first laws "to regulate developments in assisted reproductive technology and embryo research."<sup>260</sup> For comparison, Canada adopted the *Assisted Human Reproduction Act* (AHRA) fourteen years later, in 2004.<sup>261</sup> While Canada and the UK may share a common heritage in terms of their progressive views on the social and legal construction of the modern family, they do not have the same position with regard to MRT. The Canadian position is closer to the American one: MRT is prohibited. Contrary to the UK, Canada does not have legislation addressing MRT; the prohibition flows from Canada's AHRA.<sup>262</sup> Given its impact on the germline, MRT is considered part of the prohibited procedures<sup>263</sup> listed at section 5(1)(f) AHRA which reads as follows:

No person shall knowingly alter the genome of a cell of a human being or in vitro embryo such that the alteration is capable of being transmitted to descendants;<sup>264</sup>

This blanket ban applies to both the research and clinical contexts.<sup>265</sup> Failure to comply with section 5 AHRA<sup>266</sup> is an offence which results in one of the penal or criminal punishments listed at section 60 AHRA:

<sup>&</sup>lt;sup>260</sup> Bredenoord, Pennings & de Wert, *supra* note 24 at 669.

<sup>&</sup>lt;sup>261</sup> Assisted Human Reproduction Act, supra note 194.

<sup>&</sup>lt;sup>262</sup> *Ibid*.

<sup>&</sup>lt;sup>263</sup> Tania Bubela et al, "Canada's Assisted Human Reproduction Act: Pragmatic Reforms in Support of Research" (2019) 6:157 Front Med 1 at 6.

<sup>&</sup>lt;sup>264</sup> Assisted Human Reproduction Act, supra note 194.

<sup>&</sup>lt;sup>265</sup> Noohi, Li & Joly, *supra* note 259 at 450.

<sup>&</sup>lt;sup>266</sup> Assisted Human Reproduction Act, supra note 194.

60 A person who contravenes any of sections 5 to 7 and 9 is guilty of an offence and

(a) is liable, on conviction on indictment, to a fine not exceeding \$500,000 or to imprisonment for a term not exceeding ten years, or to both; or

(b) is liable, on summary conviction, to a fine not exceeding \$250,000 or to imprisonment for a term not exceeding four years, or to both.<sup>267</sup>

Despite this prohibition, an analysis of the possibility of multiple parenthood remains relevant, either in the context of other permitted gene therapies involving multiple actors (i.e., intending parents and gamete donors), or in the eventuality that MRT becomes legal. To better anticipate Canada's position on triple parenthood under law, it is worth diving into rules of filiation in the broader context of assisted reproduction.

Assisted reproduction originally came to the rescue of medically infertile<sup>268</sup> heterosexual couples struggling to conceive and of single intending mothers wishing to have genetically related children with the help of a sperm donor. Rules of filiation needed to be redefined in the context of ARTs given the involvement of third parties, i.e., donors, to the family unit. However, the AHRA itself does not provide answers on the attribution of parenthood or the status of gamete donors (i.e., eggs or sperm) *vis-a-vis* the child since rules of filiation are a matter of provincial parentage laws.<sup>269</sup> As demonstrated in the next sections, provincial parentage laws often establish filiation through the relationship of one parent with the gestational parent, i.e., their partner, initially recognized by marriage or cohabitation, in the common law provinces. So, when Canada legalized same-sex

<sup>&</sup>lt;sup>267</sup> *Ibid*.

<sup>&</sup>lt;sup>268</sup> Roy, *supra* note 2 at 12.

<sup>&</sup>lt;sup>269</sup> Constitution Act, supra note 20, s 92(16). While marriage and divorce are of federal competence (*ibid*, s 91(26)).

marriage in 2005 through the adoption of the Civil Marriage Act,<sup>270</sup> same-sex couples were also recognized in provincial bonds of filiation generated by ARTs. Until then, although ARTs were not prohibited for same-sex couples under law, in practice, fertility clinics only accepted to intervene for heterosexual couples.<sup>271</sup>

In recent years, provincial parentage laws have been increasingly challenged in front of provincial courts by modern progressive families asking judges to attribute legal parenthood to more than two adults, often unsuccessfully. Moreover, authors in the field have argued that since the best interest of the child should be the guiding principle in this matter and given the rise of alternative family models, multiple parental families, and non-conjugal parenting should be legally recognized to reflect Canadian modern social realities.<sup>272</sup> In fact, the best interest of the child is protected by article 3(1) of the international Convention on the Rights of the Child,<sup>273</sup> which was ratified by Canada.<sup>274</sup> Unfortunately, provinces like Quebec remain intransigent and do not recognize more than two legal parents to a child for the reasons set out in the next section. Thankfully, other provinces like Ontario and British Columbia adopt a more permissive and progressive position. They will be examined hereafter.

<sup>&</sup>lt;sup>270</sup> *Civil Marriage Act*, SC 2005, c. 33. The enactment of this act was based on: *Canadian Charter of Rights and Freedoms*, s 7, Part I of the *Constitution Act*, 1982, being Schedule B to the *Canada Act 1982* (UK), 1982, c 11, s 15.

<sup>&</sup>lt;sup>271</sup> Alain Roy, "Le nouveau cadre juridique de la procréation assistée en droit québécois ou l'œuvre inachevée d'un législateur trop pressé" (2005) 23 L'Observatoire de la génétique 1 at 3.

<sup>&</sup>lt;sup>272</sup> Natasha Bakht & Lynda M Collins, "Are You My Mother? Parentage in a Nonconjugal Family" (2018) 31:1 Can J Fam L 105 at 111; Marie-France Bureau, *Le droit de la filiation entre ciel et terre : étude du discours juridique québécois* (DCL Thesis, McGill University, 2007) [unpublished] at 95; Marie-Christine Saint-Jacques et al.

<sup>&</sup>quot;Recomposition familiale, parentalité et beau-parentalité : constats, limites et prospectives" (2012) 25:1 NPS 107 at 109; *Droit de la famille — 181478*, 2018 QCCA 1120 at paras 94–95. Leave to appeal dismissed *W.G. v. V.L., et al.*, 2019 CanLII 402 (SCC).

<sup>&</sup>lt;sup>273</sup> United Nations Convention on the Rights of the Child, supra note 86.

<sup>&</sup>lt;sup>274</sup> LaViolette, *supra* note 207 at 677, n 60.

#### i. Quebec Civil Law: Binomial and Heteronormative Foundations of Family Law

Quebec is the most compelling example of the binomial and heteronormative foundations of provincial family law. More specifically, Chapter 1.1 of the Civil Code of Quebec<sup>275</sup> strikingly demonstrates the structure on which Quebec family law is built. Chapter 1.1. is the result of the adoption of Bill 84 "An Act instituting civil unions and establishing new rules of filiation" (adopted on June 8, 2002).<sup>276</sup> Over a month after the adoption of Bill 84, Quebec allowed the first same-sex civil union in North America.<sup>277</sup> It took place in Montreal, Quebec on July 18, 2002.<sup>278</sup> This civil union occurred three years before the federal Civil Marriage Act allowed same-sex marriages across the country.<sup>279</sup>

The purpose of Bill 84 was to ensure that same-sex couples benefitted from the same legal protection, rights, and privileges as heterosexual couples, including their relation to their children.<sup>280</sup> To do so, Bill 84 introduced new rules of filiation to Quebec family law in the context of ARTs. Bill 84 amended the Civil Code of Quebec by adding "Title 1.1 – Civil Union" to "Book Two – The Family."<sup>281</sup> Title 1.1 deals with the formation, effects, and dissolution of the civil union, as well as the "filiation of children born of assisted procreation" (Chapter 1.1).<sup>282</sup> The amendments introduced by Bill 84 illustrate the relationship between unions and filiation.

When reading article 538 CCQ, it states the following in the context of ARTs: a parental project exists when "a person alone decides or <u>spouses</u> by mutual consent decide [...] to resort to the

<sup>&</sup>lt;sup>275</sup> Arts 538–542 CCQ.

<sup>&</sup>lt;sup>276</sup> Bill 84, *An Act instituting civil unions and establishing new rules of filiation*, 2nd Sess, 36th Leg, Quebec, 2002. <sup>277</sup> "Il y a 15 ans : une première au Québec pour le mariage gai" (18 July 2017; last updated 15 July 2022), online: *ICIRadio-Canada.ca* <a href="https://ici.radio-canada.ca/nouvelle/1045318/union-civile-mariage-gay-droits-homosexuels-archives">https://ici.radio-canada.ca/nouvelle/1045318/union-civile-mariage-gay-droits-homosexuels-archives</a>.

<sup>&</sup>lt;sup>278</sup> Ibid.

<sup>&</sup>lt;sup>279</sup> Civil Marriage Act, supra note 270.

<sup>&</sup>lt;sup>280</sup> Comité consultatif sur le droit de la famille, *supra* note 201 at 17–18.

<sup>&</sup>lt;sup>281</sup> An Act instituting civil unions and establishing new rules of filiation, supra note 276, cl 27.

<sup>&</sup>lt;sup>282</sup> Arts 538–542 CCQ.

genetic material...<sup>283</sup> [emphasis added]. The word "spouses" need to be interpreted along with both Bill 84 and the *Interpretation Act* which, respectively recognizing same-sex spouses and *de facto* spouses.<sup>284</sup> The broadening of the interpretation of "spouses" by these two texts opened the door of fertility clinics to socially infertile<sup>285</sup> couples.<sup>286</sup>

Despite social, legal, and scientific developments introducing fluidity in Canadian families and despite legally recognizing changes introduced in the nuclear family model through same-sex unions, Quebec remains committed to an outdated model in terms of filiation. This conclusion can be drawn by article 539.1 CCQ, among others:

If both parents are women, the rights and obligations assigned by law to the father, insofar as they differ from the mother's, are assigned to the mother who did not give birth to the child.<sup>287</sup>

The use of the word "both" indicates that there cannot be more than two parents to a child in the context of ARTs. Also, using mother-father figures as the reference point implies that the normative foundation of the Quebec family is heterosexual. Moreover, while a lesbian couple can apply the presumption of paternity to the second mother,<sup>288</sup> the same model cannot apply to gay men. Given that surrogacy is null and void in Quebec under article 541 CCQ,<sup>289</sup> gay men cannot rely on surrogacy to conceive a child and be recognized as parents to that child. They are thereby excluded from the application of Chapter 1.1.<sup>290</sup> Consequently, gay men have to conceive a child

<sup>&</sup>lt;sup>283</sup> Art 538 CCQ.

<sup>&</sup>lt;sup>284</sup> An Act instituting civil unions and establishing new rules of filiation, supra note 276; Interpretation Act, CQLR 2015, c I-16, s 61.1; Roy, supra note 271 at 2–3.

<sup>&</sup>lt;sup>285</sup> Roy, *supra* note 2 at 12.

<sup>&</sup>lt;sup>286</sup> Roy, *supra* note 271 at 3.

<sup>&</sup>lt;sup>287</sup> Art 539.1 CCQ.

<sup>&</sup>lt;sup>288</sup> Arts 538.3–539.1 CCQ; LaViolette, *supra* note 207 at 681; Comité consultatif sur le droit de la famille, *supra* note 201 at 158.

<sup>&</sup>lt;sup>289</sup> Art 541 CCQ; LaViolette, *supra* note 207 at 681–682.

<sup>&</sup>lt;sup>290</sup> Arts 538–542 CCQ; Comité consultatif sur le droit de la famille, *supra* note 201 at 155.

with the assistance of a gestational parent naturally or through artificial insemination.<sup>291</sup> In both cases, Quebec civil law recognizes the gestational parent as one of the parents, while the second parent is either the sperm donor intending to be a parent<sup>292</sup> or the partner of the gestational parent.<sup>293</sup> For the partner of the sperm donor to be recognized as a second parent in place of the gestational parent, the gestational parent must relinquishes their parental rights as Quebec rules of filiation only recognize two parents.

According to Fiona Kelly, since filiation rules are primarily concerned with "producing paternity,"<sup>294</sup> they contribute to the reinforcement of a heteronormative and binomial model of the nuclear family. Indeed, the heterosexual family is the reference point for all other filiation structures. For instance, using the presumption of paternity as the logic to recognize the second parent in a lesbian couple<sup>295</sup> demonstrates that although same-sex unions are legally recognized in Canada, the foundational structure of filiation laws remains heterosexual.<sup>296</sup> As a result, single parents and same-sex partners are treated as the exception to the norm. This foundation also offers little flexibility to legally acknowledge a family of more than two parents since the law usually focuses on the attribution of parenthood to the second parent, other than the gestational parent.

<sup>&</sup>lt;sup>291</sup> Arts 538–542 CCQ; Comité consultatif sur le droit de la famille, *supra* note 201 at 23. Gay men can always consider domestic adoption as per article art 546 CCQ.

<sup>&</sup>lt;sup>292</sup> Arts 523–524 CCQ; Comité consultatif sur le droit de la famille, *supra* note 201 at 168.

<sup>&</sup>lt;sup>293</sup> Art 525 CCQ; Comité consultatif sur le droit de la famille, *supra* note 201 at 168.

<sup>&</sup>lt;sup>294</sup> Fiona Kelly, "Producing Paternity: The Role of Legal Fatherhood in Maintaining the Traditional Family" (2009)
21:2 Can J Women Law 315 at 315; Wiegers, *supra* note 210 at 182.

<sup>&</sup>lt;sup>295</sup> LaViolette, *supra* note 207 at 681.

<sup>&</sup>lt;sup>296</sup> Brenda Cossman, "Parenting Beyond the Nuclear Family: Doe v. Alberta" (2007) 45:2 AltaL Rev 501 at 509:

<sup>&</sup>quot;Yet, the traditional understanding of the family as a nuclear, heterosexual unit continues to cast a long shadow over the legal and social imagination, especially when it remains difficult to separate a spousal relationship from a parenting one, and when a conjugal relationship with a parent continues to be equated with parenting."

Quebec remains strict by recognizing only up to two legal parents per family.<sup>297</sup> On numerous occasions, in 2007,<sup>298</sup> 2016,<sup>299</sup> 2018,<sup>300</sup> the Quebec Court of Appeal has confirmed this binomial parental model. On August 16, 2019, the Court of Appeal confirmed once again the biparental model privileged by Quebec family statutes.<sup>301</sup>

In the 2007 case, a sperm donor who helped a lesbian couple conceive asked to be declared the child's legal father on the basis of uninterrupted possession of status which is "established by an adequate combination of facts [indicating] the relationship of filiation between the child and the persons of whom he is said to be born."<sup>302</sup> He also demanded that his name appear on the birth certificate, in lieu of the partner of the gestational parent.<sup>303</sup> He claimed that the parental project initially included three parents.<sup>304</sup> Justice Dussault, writing for the Court, refused to grant his requests since no legal presumption existed in his favour . Furthermore, the existence of a parental project within the lesbian couple was confirmed,<sup>305</sup> putting him in the position of a contributor of genetic material which is insufficient to establish filiation.<sup>306</sup> Moreover, the Court refused to admit that the parental project included all three parties since this was not supported by the evidence.

<sup>&</sup>lt;sup>297</sup> Carsley, *supra* note 223 at 142; Comité consultatif sur le droit de la famille, *supra* note 201 at 171; *Droit de la famille* — 18968, 2018 QCCS 1900 at paras 25–43; *Droit de la famille* — 07528, 2007 QCCA 361 at para 55, Leave to appeal dismissed *L.O. v. S.J., personally and in her capacity as guardian of A.W.J., a minor, C.H. and Directeur de l'état civil du Québec*, 2007 CanLII 39168 (SCC); Michaël Lessard, "Les amoureux sur les bancs publics : Le traitement juridique du polyamour en droit québécois" (2019) 32:1 Can J Fam L 1 at 6–7. Quebec family laws do recognize single parenthood : Arts 541 (to read with 538 and 538.2), 546 CCQ; *Droit de la famille* — 191677, 2019 QCCA 1386 at para 16, n 2.

<sup>&</sup>lt;sup>298</sup> Droit de la famille — 07528, supra note 297 at para 55.

<sup>&</sup>lt;sup>299</sup> *Droit de la famille* — *161633*, 2016 QCCA 1142 at para 19.

<sup>&</sup>lt;sup>300</sup> Droit de la famille — 181478, supra note 272 at para 5.

<sup>&</sup>lt;sup>301</sup> *Droit de la famille — 191677, supra* note 297 at para 170.

<sup>&</sup>lt;sup>302</sup> Arts 524 and 538.1 CCQ.

<sup>&</sup>lt;sup>303</sup> Droit de la famille — 07528, supra note 297 at para 26.

 $<sup>^{304}</sup>$  *Ibid* at para 55.

<sup>&</sup>lt;sup>305</sup> *Ibid* at paras 83–86.

<sup>&</sup>lt;sup>306</sup> Arts 538 and 538.2(1) CCQ.

The Court added that absent a legislative change, nothing in Quebec laws allowed for a child to have more than two legal parents.<sup>307</sup>

In the 2016 case, divorce procedures led to disputes between ex-spouses with regard to alimony and child support. Since the biological father did not maintain a relationship with the child, the mother filed for the termination of certain aspects of the father's parental authority as well as an increase in child support.<sup>308</sup> The father asked to be relieved from child support since the mother's new partner acted *in loco parentis* towards the child and should be the one providing child support instead.<sup>309</sup> In his analysis, Justice Schrager, writing for the Court, considered that either the biological father or the new partner should pay child support, since a child cannot have more than two parents under Quebec law.<sup>310</sup>

In the 2018 case, two men were fighting to be recognized as the father of a child. One of the men had been involved in the child's life since their birth, but later learned that he was not the child's biological father. The second man learned months after the child's birth that he was their biological father and since wished to get involved in the child's life. In his analysis, Justice Ruel, writing for the majority, reaffirmed that a child can have no more than two legal parents under Quebec law.<sup>311</sup> Therefore, a choice between both alleged fathers had to be made.<sup>312</sup> Here, the Court recognized that status for the man who was not biologically related to the child but acted as their father because of his constant possession of status.<sup>313</sup>

<sup>&</sup>lt;sup>307</sup> Droit de la famille — 07528, supra note 297 at para 55.

<sup>&</sup>lt;sup>308</sup> Droit de la famille — 161633, supra note 299 at para 10.

<sup>&</sup>lt;sup>309</sup> *Ibid* at para 11.

<sup>&</sup>lt;sup>310</sup> *Ibid* at para 19.

<sup>&</sup>lt;sup>311</sup> Droit de la famille — 181478, supra note 272 at para 5.

<sup>&</sup>lt;sup>312</sup> *Ibid* at para 105.

<sup>&</sup>lt;sup>313</sup> *Ibid* at paras 98-102.

In the 2019 case, a lesbian couple decided to conceive a child by using their male friend's sperm donation. The trio attempted to get pregnant by both artificial insemination and sexual intercourse and it was impossible to determine through which method the gestational parent finally got pregnant. Before conception, all three parties agreed in writing that they wanted to share the physical, emotional, and financial responsibilities associated with the child. They would also make decisions with regard to the health and education of the child, by consensus. Both mothers would have custody of the child while the father could also have part-time custody, should he wish to. Both mothers' names would appear on the birth certificate, and the father would acquire the status of legal guardian after the birth. Under article 115 CCQ,<sup>314</sup> the gestational parent was the legal parent, and their partner was the second parent.

The lesbian couple thereafter separated. The sperm donor contested the established filiation and asked to appear on the birth certificate as the second parent of the child, in lieu of the expartner of the gestational parent. The ex-partner who underwent gender reassignment transition wished to be called "dad" by the child and was opposed to having the sperm donor replace them on the birth certificate.<sup>315</sup>

At the Quebec Superior Court, while Justice Morrison stated that in Quebec family law, a child cannot have more than two parents,<sup>316</sup> he also took this opportunity to make a plea for change. In his view, current laws are not adapted to the reality of Quebecers and excluding a parent who is involved in the child's life can even be considered contrary to the child's best interest and is in the current case.<sup>317</sup>

<sup>&</sup>lt;sup>314</sup> Art 115 CCQ.

<sup>&</sup>lt;sup>315</sup> Droit de la famille -18968, supra note 297 at paras 3 and 7.

<sup>&</sup>lt;sup>316</sup> *Ibid* at paras 25–36.

<sup>&</sup>lt;sup>317</sup> *Ibid* at paras 37–43 and 102.

However, given the legal constraints at stake, Justice Morrison granted the request. He concluded that the parties' situation was not one of assisted reproduction under article 538 CCQ.<sup>318</sup> This was so because the sperm donor was not merely contributing to the parental project by providing genetic material, but was truly and actively taking part of the parental project by acting as a parental figure to the child.<sup>319</sup> Since this was not a case of assisted reproduction, it was not too late for the sperm donor to claim filiation.<sup>320</sup> Indeed, the one-year delay of article 538.2(2) CCQ<sup>321</sup> which allows for a sperm donor to claim filiation when a child was conceived through sexual intercourse did not apply as it is restricted to cases of assisted reproduction. Justice Morrison therefore ordered that the name of the sperm donor replaces the name of the ex-partner of the gestational parent on the birth certificate. The ex-partner of the gestational parent appealed.

At the Quebec Court of Appeal, Justice Kasirer, writing for the Court, did not recognize a trilogy of parents either. However, he took a different approach. He disagreed with Justice Morrison's opinion that the level of commitment of the sperm donor in the child's life could serve to determine whether the child was conceived in the context of assisted reproduction or not.<sup>322</sup> Indeed, since the three criteria established by the Court of Appeal<sup>323</sup> to demonstrate the existence of a parental project are met, this case qualifies as assisted reproduction under article 538 CCQ.<sup>324</sup>

It is worth noting that the parties in this case did not ask the court to attribute three legal parents to the child. They even recognized that the child can only have two parents under Quebec family law,<sup>325</sup> hence the written arrangement where the sperm donor had a different status from that of the

<sup>&</sup>lt;sup>318</sup> Art 538 CCQ.

<sup>&</sup>lt;sup>319</sup> *Droit de la famille* — *18968*, *supra* note 297 at para 51.

<sup>&</sup>lt;sup>320</sup> *Ibid* at para 53.

<sup>321</sup> Art 538.2(2) CCQ.

<sup>&</sup>lt;sup>322</sup> Droit de la famille — 191677, supra note 297 at para 144.

<sup>&</sup>lt;sup>323</sup> Droit de la famille — 111729, supra note 202 at para 41. See Chapter II, C, iii of our study.

<sup>&</sup>lt;sup>324</sup> Art 538 CCQ.

<sup>&</sup>lt;sup>325</sup> *Droit de la famille* — *191677*, *supra* note 297 at para 66.

two mothers and hence the dispute about switching one of the two names on the child's birth certificate. Nevertheless, at the first instance, Justice Morrison complained that family laws did not allow for the recognition of three legal parents. As for the Court of Appeal, it refused to take position on an issue that was not brought before the court<sup>326</sup> but accepted, "for discussion purposes,"<sup>327</sup> that there cannot be more than two parents under Quebec laws.<sup>328</sup> For Justice Kasirer, the trial judge's stance is based on the fact that he has confused "filiation/kinship" (*parenté*) with "parental authority" (*parentalité*).<sup>329</sup>

As further argued by Justice Kasirer, while a triple filiation (*parenté*) is not allowed under Quebec family statutes, nothing prevents parental authority (*parentalité*) from being exercised by three people in Quebec.<sup>330</sup> Justice Kasirer explained parental authority as referring to the set of parental rights and obligations exercised for the benefit and the protection of the child.<sup>331</sup> Filiation, on the other hand, is a legal construction establishing a formal link between a child and their parents, either through blood, adoption or assisted reproduction.<sup>332</sup> It is thus independent of the actual role or implication of the party acting as the parent,"<sup>333</sup> just like "custody creates no bond of kinship"<sup>334</sup> under Quebec family law.<sup>335</sup> According to Justice Kasirer, the birth certificate

 $<sup>^{326}</sup>$  *Ibid* at para 68.

<sup>&</sup>lt;sup>327</sup> *Ibid* at para 17.

<sup>&</sup>lt;sup>328</sup> *Ibid* at para 68.

<sup>&</sup>lt;sup>329</sup> *Ibid* at paras 109 and 122.

<sup>&</sup>lt;sup>330</sup> Droit de la famille — 191677, supra note 297 at paras 17-18; Sophia Claude, "Between Filiation, Parentage and Parenthood, Could a Child Have Three Parents?" (3 April 2020), online: *Therrien Couture Joli-Coeur* <a href="https://www.groupetcj.ca/en/news/574-between-filiation-parentage-and-parenthood-could-a-child-have-three-parents-.html">https://www.groupetcj.ca/en/news/574-between-filiation-parentage-and-parenthood-could-a-child-have-three-parents-.html</a>.

<sup>&</sup>lt;sup>331</sup> *Droit de la famille — 191677, supra* note 297 at paras 100–101.

<sup>&</sup>lt;sup>332</sup> *Ibid*.

<sup>&</sup>lt;sup>333</sup> Doug Mitchell, "Three's not company / Modern family problems" (27 August 2019), online: *CanLII Connects* <a href="https://canliiconnects.org/en/commentaries/67407">https://canliiconnects.org/en/commentaries/67407</a>>.

<sup>&</sup>lt;sup>334</sup> Robert Leckey, "Two Mothers in Law and Fact" (2012) 21:1 Fem Leg Stud 1 at 6.

<sup>&</sup>lt;sup>335</sup> *Droit de la famille* — *191677, supra* note 297 at para 104.

establishes filiation and has an important symbolic value.<sup>336</sup> While parental authority is exercised until the child reaches the age of majority and can be delegated,<sup>337</sup> filiation is for life.<sup>338</sup> Thus, given the above, it is possible for three adults to care for a child and be involved in their life without being in contradiction with Quebec family statutes that do not formally recognize more than two legal parents.<sup>339</sup>

With these considerations in mind, Justice Kasirer concluded that the sperm donor was a genitor and a third party to the parental project as per article 538 CCQ.<sup>340</sup> Since the sperm donor renounced to declare their paternity, they made it clear that the child only had two parents at the time of conception and birth: the gestational parent and their partner.<sup>341</sup> On April 2, 2020, the Supreme Court of Canada dismissed an application for leave to appeal.<sup>342</sup>

A Quebec lawyer, Me Lessard, proponent of triple parenthood, suggests that the Court of Appeal's abstention to express their opinion on triple parenthood may indicate that Quebec's family statutes will evolve over the next few years.<sup>343</sup> We cannot go as far as to agree with this statement since the Court of Appeal did recognize that Quebec family statutes do not allow triple parenthood.<sup>344</sup> Moreover, the distinction between filiation (*parenté*) and parental authority (*parentalité*) suggests that the Court is quite comfortable with the idea that law may recognize two

<sup>&</sup>lt;sup>336</sup> Droit de la famille — 191677, supra note 297; Le 15-18, "La reconnaissance des familles à trois parents : Entrevue avec Alain Roy" (11 May 2018), online (podcast): *ICIRadio-Canada* <a href="https://ici.radio-

canada. ca/ohdio/premiere/emissions/le-15-18/segments/entrevue/71756/droit-famille-pluriparentalite>.

<sup>&</sup>lt;sup>337</sup> Art 153(1) CCQ: 18 years in Quebec.

<sup>&</sup>lt;sup>338</sup> Comité consultatif sur le droit de la famille, *supra* note 201 at 166.

<sup>&</sup>lt;sup>339</sup> Droit de la famille — 191677, supra note 297 at para 16.

<sup>340</sup> Art 538 CCQ.

<sup>&</sup>lt;sup>341</sup> Droit de la famille — 191677, supra note 297 at paras 137–139. The sperm donor could always try to establish an uninterrupted possession of status under section 524 CCQ to replace the second parent. However, this claim would be extremely fragile since it would be enough to demonstrate that the sperm donor was not part of the parental project to rebut the donor's claim of filiation. See Comité consultatif sur le droit de la famille, supra note 201 at 165. <sup>342</sup> JM v CL et al, 2020 CanLII 25168 (SCC).

<sup>&</sup>lt;sup>343</sup> Michaël Lessard, "Il est temps de considérer la triparenté" (24 August 2019), online: La Presse

<sup>&</sup>lt;a href="https://plus.lapresse.ca/screens/71904334-fbea-4137-9e8a-3a21b134e2ad\_7C\_0.html">https://plus.lapresse.ca/screens/71904334-fbea-4137-9e8a-3a21b134e2ad\_7C\_0.html</a>.

<sup>&</sup>lt;sup>344</sup> *Droit de la famille* — *191677, supra* note 297 at paras 68 and 17.

legal parents to a child while, simultaneously, accepting that parental authority can be exercised by multiple adults for the same child. For the parties involved in the 2019 case, this resolution was in accordance with their initial arrangement where the sperm donor had parental authority without being a legal parent to the child.

The Court admitted that the question of tri-parenthood was an important one, but the case at stake did not allow for a debate on the matter.<sup>345</sup> In fact, Justice Kasirer reminded us that the question submitted in 2019 was to establish the filiation of the child, not determine if the child has two or three parents under Quebec family statutes.<sup>346</sup> Until the question is either brought to courts or the government adopts a legislative reform of family law<sup>347</sup> multiple parenthood remains impossible under Quebec laws.<sup>348</sup> Given the above, we propose that the door is not as wide open as Me Lessard suggests. However, along with another commenter, we invite the Quebec

<sup>&</sup>lt;sup>345</sup> *Ibid*.

<sup>&</sup>lt;sup>346</sup> Ibid.

<sup>&</sup>lt;sup>347</sup> Projet de loi n° 2 (Bill 2), Loi portant sur la réforme du droit de la famille en matière de filiation et modifiant le Code civil en matière de droits de la personnalité et d'état civil - Assemblée nationale du Québec, 2e sess. 42e lég.. Québec, (21 October 2021); Jocelyne Richer, "Projet de loi 2: L'opposition doute de l'adoption de la réforme du droit de la famille" (10 April 2022), online: La Presse < https://www.lapresse.ca/actualites/politique/2022-04-10/projet-de-loi-2/l-opposition-doute-de-l-adoption-de-la-reforme-du-droit-de-la-famille.php>. The majority government currently in power in Quebec has prepared a reform of family law. The reform was adopted unanimously within the party, following several consultations. However, the document has still not been tabled or studied in the parliamentary chamber. As the parliamentary session draws to a close and provincial elections are scheduled for this fall, there is every reason to believe that the document is destined to die on the order paper. In fact, the current government has decided not to prioritize this bill. Since our study focuses on the current state of the law, we will not be studying Bill No. 2. However, we note in passing that the reform proposes amendments to section 538.1 CCQ (Bill 2, cl 92), which sets out the rules of filiation in matters of assisted procreation. In paragraph 2, the text refers to the "other parent" in order to establish the filiation of the second parent. Thus, all indications are that Quebec is not ready to change its position on the legal recognition of only two parents per child. <sup>348</sup> Louise Leduc, "Droit de la famille: Ménage à trois... parents" (3 May 2021), online: La Presse <https://www.lapresse.ca/actualites/justice-et-faits-divers/2021-05-03/droit-de-la-famille/menage-a-troisparents.php>. According to Professor Alain Roy, interviewed in this article, the only way for Quebec to changes its view on triple filiation is through legislative reform.

government to "examine this decision in the promised upcoming family law reform,"<sup>349</sup> which is long overdue.<sup>350</sup>

Interestingly, in 2019, the Court of Appeal noted that other Canadian provinces are open to a multi-parental familial model but found this fact irrelevant to the dispute and believed the province of Quebec did not necessarily have to follow this path.<sup>351</sup> Indeed, family law under Quebec civil law has not evolved in the same way as in common law provinces, unfortunately.<sup>352</sup>

Other Canadian provinces such as Ontario and British Columbia have adopted more permissive and progressive approaches. Indeed, both provinces have incorporated the revolutionary idea that a child may have more than two parents into their family statutes. <sup>353</sup> Ontario and British Columbia cases on this issue are the most influent in Canada and have been relied on in other common law provinces, though, there are still few cases across Canada addressing the concept of triple parenthood.<sup>354</sup> Therefore, the next section will focus on legal developments in triparental families in these two provinces only.

<sup>&</sup>lt;sup>349</sup> Mitchell, *supra* note 333.

<sup>&</sup>lt;sup>350</sup> Robert Leckey, "Family Outside the Book on the Family" (2010) 88:3 Can B Rev 541 at 572; Renée Joyal, "Parents, enfants, conjoints : à la recherche d'un sens" (2009) 50:2 C & D 361 at 363.

<sup>&</sup>lt;sup>351</sup> *Droit de la famille* — *191677, supra* note 297 at para 68.

<sup>&</sup>lt;sup>352</sup> *ICIRadio-Canada*, *supra* note 336.

<sup>&</sup>lt;sup>353</sup> Roy, *supra* note 2 at 15.

<sup>&</sup>lt;sup>354</sup> *Cabianca v British Columbia (Registrar General of Vital Statistics)*, 2019 BCSC 2010; *CC (Re)*, 2018 NLSC 71. For instance, this 2018 case in Newfoundland Labrador replicated the reasoning of the Ontario Court of Appeal.

# ii. The Exceptions to the Biparental Family Unit in Canadian Common Law Provinces

## 1. Ontario: Child Conceived Through Assisted Reproduction

Given the growing diversity of Canadian families<sup>355</sup> and scientific advancements,<sup>356</sup> Canadian provinces are being presented with the fact that the modern nuclear family may be composed of more than two legal parents. The province of Ontario was the first to agree with this position. Ontario was already at the forefront of ARTs by being "home to the largest number of fertility clinics in Canada"<sup>357</sup> and now, by recognizing three legal parents to a child conceived through ART.

The *A.A. v. B.B.*<sup>358</sup> case is the first Canadian decision to recognize more than two legal parents to a child, even though parental rights and obligations had been previously attributed to more than two parents.<sup>359</sup> For that reason, the *A.A. v. B.B.* case is ground-breaking.<sup>360</sup>

This case concerned a lesbian couple who used a sperm donation from a friend to conceive a child. Only the gestational parent and the sperm donor were recognized as parents of the child. The couple wanted the partner of the gestational parent to be recognized as a parent as well, but without excluding the sperm donor.<sup>361</sup> For the partner of the gestational parent to obtain this recognition, they would have to fill in an adoption order. However, an adoption order would deprive the sperm donor of their filiation, according to section 1(2) *in fine* of the Children's Law

<sup>&</sup>lt;sup>355</sup> LaViolette, *supra* note 207 at 679.

<sup>&</sup>lt;sup>356</sup> *Ibid* at 674.

<sup>&</sup>lt;sup>357</sup> Gruben & Cameron, *supra* note 225 at 675.

<sup>&</sup>lt;sup>358</sup> A A v B B, [2003] OJ No 1215 (QL).

<sup>&</sup>lt;sup>359</sup> Fiona Kelly, "One of these Families is not like the Others: The Legal Response to Non-Normative Queer Parenting in Canada" (2013) 51:1 AltaL Rev 1 at 6.

<sup>&</sup>lt;sup>360</sup> Ibid.

<sup>&</sup>lt;sup>361</sup> *A. A. v. B. B.*, *supra* note 358 at paras 3–4.

Reform Act (CLRA):<sup>362</sup> "the child is the child of the adopting parents as if they were the natural parents."<sup>363</sup> This was contrary to the mutual agreement of the couple and the donor. The claim therefore sought to recognize the three alleged parents as the three legal parents to the child.<sup>364</sup>

At the Ontario Superior Court, Justice Aston explained that it was not the court's role to determine whether a child can have three legal parents. Observing the existence of "polarized views [...] concerning the definition of the modern family,"<sup>365</sup> the judge stated that "political considerations belong to the legislature,"<sup>366</sup> not the court. In other words, while courts may intervene in social debates and make propositions, creating and shaping laws accordingly is a legislative matter.<sup>367</sup> Justice Aston interpreted the use of the expressions "the father" and "the mother" of the child at Part II – Establishment of Parentage – of the CLRA<sup>368</sup> as meaning, without any ambiguity, that the legislator did not permit the recognition of more than two legal parents for a child.<sup>369</sup>

However, Justice Aston also admitted that the court could consider exercising its *parens patriae* authority to grant the application.<sup>370</sup> *Parens patriae* is a common law doctrine which translates to "parent of the people,"<sup>371</sup> meaning that courts have a "paternal and protective role"<sup>372</sup> over the people of their jurisdiction. According to Justice Aston, *parens patriae* can be used either

<sup>&</sup>lt;sup>362</sup> *Children's Law Reform Act, supra* note 211. At the time, the 2001 version was in force. The expression "natural parents" does not appear in the current (2021) version.

<sup>&</sup>lt;sup>363</sup> A. A. v. B. B., supra note 358 at para 14.

<sup>&</sup>lt;sup>364</sup> LaViolette, *supra* note 207 at 678–679.

<sup>&</sup>lt;sup>365</sup> A. A. v. B. B., supra note 358 at para 42.

<sup>&</sup>lt;sup>366</sup> *Ibid*.

<sup>&</sup>lt;sup>367</sup> *Ibid*.

<sup>&</sup>lt;sup>368</sup> Children's Law Reform Act, supra note 211. Part II was since repealed.

<sup>&</sup>lt;sup>369</sup> A. A. v. B. B., supra note 358 at paras 34–37.

<sup>&</sup>lt;sup>370</sup> *Ibid* at para 39.

<sup>&</sup>lt;sup>371</sup> Cornell Law School, *Legal Information Institute*, (last updated May 2022) sub verbo "*parens patriae*", online <a href="https://www.law.cornell.edu/wex/parens\_patriae">https://www.law.cornell.edu/wex/parens\_patriae</a>>. <sup>372</sup> *Ibid*.

to (i) intervene and rescue a child in danger; or (ii) to fill a legislative gap.<sup>373</sup> However, it cannot be used to "rewrite legislation and procedure" <sup>374</sup> even if granting the application may be in the best interest of the child. Justice Aston refused to exercise the court's *parens patriae* authority as he believed there was no legislative gap to be filled.<sup>375</sup> In his opinion, if there was such a thing as a gap, it was deliberate, and "[p]erceived gaps from provisions that seem under-inclusive" would require the Court to legislate, which was not their role.<sup>376</sup>

The Court of Appeal of Ontario disagreed with the Superior Court.<sup>377</sup> Justice Rosenberg, writing for the bench, believed there was a legislative gap the court was allowed to fill. This was because, at the time of the enactment of the CLRA, the legislator had a traditional view of the family in mind: a heterosexual and married couple.<sup>378</sup> The purpose of the law was then to protect all children by providing them equal status, regardless of whether they were born inside or outside of wedlock.<sup>379</sup> Thus, current technology and relationships were "beyond the vision of the Law Reform Commission and the legislature of the day."<sup>380</sup> For the Court, Ontario's society has evolved since the enactment of the CLRA with the legal recognition of same-sex unions and the introduction of ARTs. Consequently, Ontario family statutes should reflect these changes.<sup>381</sup>

Indeed, for the Court, gaps in the CLRA put at risk the equality of status of children given that some forms of parentage are not recognized by law.<sup>382</sup> The Court disagreed with the Superior

<sup>&</sup>lt;sup>373</sup> LaViolette, *supra* note 207 at 676.

<sup>&</sup>lt;sup>374</sup> Lennox & Addington Family & Children's Services v TS, [2000] OJ No 1420 (QL) at para 20; A. A. v. B. B., supra note 358 at para 40.

<sup>&</sup>lt;sup>375</sup> A. A. v. B. B., supra note 358 at paras 39 and 44.

<sup>&</sup>lt;sup>376</sup> *Ibid* at para 39; *AA v BB*, 2007 ONCA 2.

<sup>&</sup>lt;sup>377</sup> A.A. v. B.B., supra note 376.

<sup>&</sup>lt;sup>378</sup> *Ibid* at para 34.

<sup>&</sup>lt;sup>379</sup> Ibid.

<sup>&</sup>lt;sup>380</sup> Ibid.

<sup>&</sup>lt;sup>381</sup> *Ibid* at para 35.

<sup>&</sup>lt;sup>382</sup> *Ibid*.

Court's position that this legislative gap was deliberate.<sup>383</sup> Relying on the courts' *parens patriae* jurisdiction and on the child's best interest, <sup>384</sup> Justice Rosenberg filled the identified gap by recognizing the partner of the gestational parent as a third legal parent. Thereafter, the Alliance for Marriage and Family brought a motion for an order to add a party to appeal the decision which the Supreme Court of Canada dismissed.<sup>385</sup>

The reason why the partner of the gestational parent submitted a claim for a declaration of parentage is that such status provides privileges no other status in relationship to the child may provide.<sup>386</sup> A declaration of parentage is in fact significant:<sup>387</sup> "the declaration of parentage is a lifelong immutable declaration of status; it allows the parent to fully participate in the child's life; the declared parent has to consent to any future adoption; the declared parent may obtain [...] a declaration ensures that the child will inherit on intestacy; the declared parent may obtain [...] a social insurance number, airline tickets and passports for the child; the child of a Canadian citizen is a Canadian citizen, even if born outside of Canada [...]; the declared parent may register the child in school; and the declared parent may assert her rights under various laws."<sup>388</sup> Thus, a declaration of parentage is permanent and preferable to other alternatives such as a rebuttable joint custody order.<sup>389</sup>

<sup>&</sup>lt;sup>383</sup> *Ibid* at para 38.

<sup>&</sup>lt;sup>384</sup> *Ibid* at para 37.

<sup>&</sup>lt;sup>385</sup> Alliance for Marriage and Family v AA, 2007 SCC 40.

<sup>&</sup>lt;sup>386</sup> A.A. v. B.B., supra note 376 at paras 14-15.

<sup>&</sup>lt;sup>387</sup> LaViolette, *supra* note 207 at 688: "While the list appears complete, there is one important legal benefit that the courts overlook. Since a declaration of parentage establishes lineage, the child will be able to inherit the ethnic, cultural and linguistic heritage of the non-biological parent. Given that some constitutional rights in Canada are linked to a person's ethnic, cultural, or linguistic background, a child's ancestry is important in determining what constitutional rights a child or their parent may be able to assert."

<sup>&</sup>lt;sup>388</sup> A.A. v. B.B., supra note 376 at para 14.

<sup>&</sup>lt;sup>389</sup> LaViolette, *supra* note 207 at 687.

Notwithstanding the above, the *A.A. v. B.B.*<sup>390</sup> case does not provide all children of Ontario with the right to have multiple parents.<sup>391</sup> At the Superior Court, Justice Aston speculated: "[i]f a child can have three parents, why not four or six or a dozen? What about all the adults in a commune or a religious organization or sect?"<sup>392</sup> Since the decision of the Court of Appeal was made on the basis of the discretionary *parens patrie* jurisdiction, this slippery slope argument is highly unlikely to occur.<sup>393</sup> Indeed, the *parens patriae* doctrine is meant for the "benefit of the protected person, not for the benefit of others."<sup>394</sup> Courts rely on it on a case-by-case basis.

The A.A. v. B.B.<sup>395</sup> case was a judicial triumph for the Canadian gay community and opened the door to other triparental cases in the country that took over the media.<sup>396</sup> However, the Ontario Court of Appeal did not provide any guidelines on how a court should decide on who can be a parent.<sup>397</sup> Consequently, the *parens patriae* jurisdiction is not a long-term solution every time a prospective parent wishes to acquire the status of a legal parent. Indeed, relying on an *ad hoc* method to ensure the best interest of the child is a fragile foundation to reform family laws.<sup>398</sup>

<sup>&</sup>lt;sup>390</sup> A. A. v. B. B., supra note 358.

<sup>&</sup>lt;sup>391</sup> LaViolette, *supra* note 207 at 678.

<sup>&</sup>lt;sup>392</sup> A. A. v. B. B., *supra* note 358 at para 41.

<sup>&</sup>lt;sup>393</sup> LaViolette, *supra* note 207 at 665.

<sup>&</sup>lt;sup>394</sup> Wiegers, *supra* note 210 at 205; *E* (*Mrs*) *v Eve*, [1986] 2 SCR 388 at para 77; *DWH v DJR*, 2013 ABCA 240 at para 62.

<sup>&</sup>lt;sup>395</sup> A. A. v. B. B., supra note 358.

<sup>&</sup>lt;sup>396</sup> "Un enfant peut avoir trois parents" (3 January 2007), online: *ICIRadio-Canada.ca* <a thtps://ici.radio-canada.ca/nouvelle/335495/jugement-parents>; The Canadian Press, "Three adults in polyamorous relationship declared legal parents of child" (14 June 2018), online: *The Globe and Mail* 

<sup>&</sup>lt;https://www.theglobeandmail.com/canada/article-three-adults-in-polyamorous-relationship-declared-legal-parentsof-2/>; Terry Davidson, "N.L. polyamory parenting decision puts children first, lawyers say" (20 June 2018), online: *The Lawyer's Daily* <https://www.thelawyersdaily.ca/articles/6773/n-l-polyamory-parenting-decision-puts-childrenfirst-lawyers-say>.

<sup>&</sup>lt;sup>397</sup> LaViolette, *supra* note 207 at 667.

<sup>&</sup>lt;sup>398</sup> Ibid.

Families in Ontario cannot rely on courts to "be solely responsible for shaping the new contours of legal parentage."<sup>399</sup> This would inevitably lead to inconsistent and ambivalent results.<sup>400</sup>

In 2016, the *All Families Are Equal Act*<sup>401</sup> amended the CLRA. Under this new law, the following can be declared legal parents: birth parent, other biological parent via sexual intercourse, birth parent's spouse, parents under preconception agreements, intended parents where surrogacy is involved, posthumous parent where assisted reproduction is involved.<sup>402</sup> Moreover, a sperm donor – where insemination occurs through sex – and a surrogate can avoid parentage.<sup>403</sup> Furthermore, under this new law, sections 2(4), 9(1), and 13(4) of the CLRA<sup>404</sup> now refer to two or more parties as potential legal parents, indicating that the lessons of the *A.A. v. B.B.*<sup>405</sup> case were integrated into Ontario family statutes. The section on surrogacy even recognizes up to four parents to a child. Indeed, any party to the surrogacy agreement can apply for a declaration of parentage, as long as there are no more than four intended parents to that agreement.<sup>406</sup>

With the *A.A. v. B.B.*<sup>407</sup> case, Ontario certainly paved the way for other Canadian provinces to legally recognize a trilogy of parents in the context of ARTs.<sup>408</sup> However, what happens when a child is naturally conceived, and three people claim the role of parents? The British Columbia Supreme Court had to tackle such a case.

<sup>&</sup>lt;sup>399</sup> *Ibid* at 683.

<sup>&</sup>lt;sup>400</sup> Boyd, *supra* note 223 at 84.

<sup>&</sup>lt;sup>401</sup> All Families Are Equal Act (Parentage and Related Registrations Statute Law Amendment), SO 2016, c. 23 - Bill 28, 2nd Sess, 41st Leg, Ontario (Assented to December 5, 2016).

<sup>&</sup>lt;sup>402</sup> Robert Leckey, "One Parent, Three Parents: Judges and Ontario's All Families Are Equal Act, 2016" (2019) 33:3 Int J Law Policy Family 298 at 301.

<sup>&</sup>lt;sup>403</sup> *Ibid* at 302.

<sup>&</sup>lt;sup>404</sup> Children's Law Reform Act, supra note 211.

<sup>&</sup>lt;sup>405</sup> *A. A. v. B. B., supra* note 358.

<sup>&</sup>lt;sup>406</sup> Children's Law Reform Act, supra note 211, ss 10(2) and 11(1).)

<sup>&</sup>lt;sup>407</sup> A. A. v. B. B., supra note 358.

<sup>&</sup>lt;sup>408</sup> Birth Registration No 2018-XX-XX5815, 2021 BCSC 767; C.C. (Re), supra note 354.

#### 2. British Columbia: Child Conceived Naturally

The most recent decision to recognize a Canadian triparental family occurred in British Columbia. A child was naturally conceived within a polyamorous family of two people identifying as women and one identifying as a man. While the current British Columbia FLA allows for more than two parents in the context of assisted reproduction when the people concerned agree to it in writing,<sup>409</sup> the law does not address multiple parenthood for a naturally conceived child. As a result, had the child in this case "been conceived through assisted reproduction"<sup>410</sup> instead of sexual intercourse, the child would have had more than two parents under the FLA. Given the state of the laws of the time, multiple parenthood for a child conceived through sexual intercourse was not an option.

Inspired by the *A.A. v. B.B.*<sup>411</sup> case, Justice Wilkinson determined that there was a gap in the current FLA as the "legislature [does] not contemplate polyamorous families."<sup>412</sup> Indeed, the legislator did not foresee "the possibility [that] a child might be conceived through sexual intercourse <u>and</u> have more than two parents."<sup>413</sup> Consequently, Justice Wilkinson relied on the *parens patriae* jurisdiction to allow three legal parents to appear on the birth certificate of the child, in accordance with the principle of the best interest of the child.<sup>414</sup>

The Attorney General of British Columbia had warned the court against the danger of "open[ing] the floodgates for parentage declarations in the future."<sup>415</sup> However, Justice Wilkinson

<sup>&</sup>lt;sup>409</sup> Family Law Act, supra note 213, s 30.

<sup>&</sup>lt;sup>410</sup> Jason Proctor, "B.C. judge orders second mother declared a third parent to child of polyamorous trio" (26 April 2021), online: *CBC News* <a href="https://www.cbc.ca/news/canada/british-columbia/polyamorous-parents-birth-certificate-judge-1.6002991">https://www.cbc.ca/news/canada/british-columbia/polyamorous-parents-birth-certificate-judge-1.6002991</a>>.

<sup>&</sup>lt;sup>411</sup> *A. A. v. B. B., supra* note 358.

<sup>&</sup>lt;sup>412</sup> Birth Registration No. 2018-XX-XX5815, supra note 408 at para 68.

<sup>&</sup>lt;sup>413</sup> *Ibid*. Emphasis added by the court.

<sup>&</sup>lt;sup>414</sup> *Ibid* at para 92; *A.A. v. B.B., supra* note 376 at para 27.

<sup>&</sup>lt;sup>415</sup> Birth Registration No. 2018-XX-XX5815, supra note 408 at para 76.
did not fear such a slippery slope. Indeed, she believes that the reality of family law is, unfortunately, that more often than not, "parents are trying to skirt their responsibilities, instead of secur[ing] them."<sup>416</sup>

Just like in the *A.A. v. B.B.*<sup>417</sup> case, a declaration of parentage was the sought-after remedy rather than custody (i.e., filiation versus parental authority). While there is a certain relationship between both concepts as legal parents are often the ones with custody of the child,<sup>418</sup> parentage is permanent while custody is not.<sup>419</sup> Given the "practical and symbolic differences between parentage and guardianship [i.e., custody],"<sup>420</sup> Justice Wilkinson agreed that custody would not be a "cure-all" for the child.<sup>421</sup> In this case, the Court was of the opinion that it was in the best interest of the child to grant the application and to attribute legal parenthood to all three parents rather than multiply custody arrangements.<sup>422</sup>

As a result of this 2021 decision, many were ecstatic to witness that a court finally "recognize[d] the diversity of families in BC."<sup>423</sup> While some consider the recognition of multiple parenthood to be in tune with the reality of modern Canadian families, others believe this may further complexify family disputes.<sup>424</sup> Nevertheless, the emerging trend in Canadian common law provinces to consider recognizing a trilogy (or more) of legal parents when it is in the child's best interest.

<sup>&</sup>lt;sup>416</sup> *Ibid*.

<sup>&</sup>lt;sup>417</sup> *A. A. v. B. B., supra* note 358.

<sup>&</sup>lt;sup>418</sup> Birth Registration No. 2018-XX-XX5815, supra note 408 at para 45; Family Law Act, supra note 213, s 39.

<sup>&</sup>lt;sup>419</sup> A.A. v. B.B., supra note 373 at para 14.

<sup>&</sup>lt;sup>420</sup> Birth Registration No. 2018-XX-XX5815, supra note 408 at para 46.

<sup>&</sup>lt;sup>421</sup> *Ibid*.

<sup>&</sup>lt;sup>422</sup> *Ibid* at paras 79–81.

<sup>&</sup>lt;sup>423</sup> Proctor, *supra* note 410.

<sup>&</sup>lt;sup>424</sup> "Le droit d'avoir plus de deux parents" (30 July 2010), online: *ICIRadio-Canada.ca* <a https://ici.radio-canada.ca/nouvelle/481987/enfants-parents-reforme-loi>.

### V. CHAPTER IV: MRT: Three Legal Parents in Canada – What is the Verdict?

In this final chapter, we discuss the possibility of triple parenthood under Canadian law in the context of MRT. Despite the criminal prohibition of MRT in Canada, this question remains relevant, either in the context of other gene therapies that may be permitted under the AHRA or should MRT one day becomes legal.

First, we criticize the Canadian prohibition on MRT and invite the government to reassess their position. Second, by reviewing the provincial laws in Quebec, Ontario and British Columbia already examined above (see Chapter III, B, ii, 2), we conclude that (1) mDNA donors are not parents by reason only of their genetic contribution to the child, however (2) they can be recognized as intending parents under law if they meet the necessary criteria (e.g., are part of a legally recognized written agreement), and (3) should Canada decide to legalize MRT, mDNA donors could be recognized as third parents in Canada, only in the provinces that allow for more than two legal parents.

#### A. MRT in Canada: Plea for a Change

The context in which the AHRA was enacted explains why the criminal punishments under section 60 AHRA<sup>425</sup> are so severe. The parliamentary debates for the adoption of the federal AHRA took place less than 10 years after the world witnessed the birth of Dolly the cloned sheep.<sup>426</sup> More recently, in 2003, a French cult leader shocked the world by (falsely) claiming the birth of the first cloned human.<sup>427</sup> At that time, the international media was fueling the public's fears about the

<sup>&</sup>lt;sup>425</sup> Assisted Human Reproduction Act, supra note 194.

<sup>&</sup>lt;sup>426</sup> Karen Weintraub, "20 Years after Dolly the Sheep Led the Way - Where Is Cloning Now?" (5 July 2016), online: *Scientific American* <a href="https://www.scientificamerican.com/article/20-years-after-dolly-the-sheep-led-the-way-where-is-cloning-now/">https://www.scientificamerican.com/article/20-years-after-dolly-the-sheep-led-the-way-where-is-cloning-now/</a>.

<sup>&</sup>lt;sup>427</sup> "Rael defends claims of cloned baby" (3 January 2003), online: CNN

<sup>&</sup>lt;http://www.cnn.com/2003/ALLPOLITICS/01/03/cf.opinion.rael/>; I Glenn Cohen, Eli Y Adashi & Vardit Ravitsky, "How bans on germline editing deprive patients with mitochondrial disease" (2019) 37:6 Nat Biotechnol 589 at 590.

possibilities of human cloning and the unforeseeable consequences of manipulating the human DNA.<sup>428</sup> In reaction to these fears, the AHRA prohibited the use of any technology that alters the human genome in a heritable way. This includes MRT.<sup>429</sup>

Until Canada decides to undertake the promised review of the AHRA,<sup>430</sup> the criminal prohibition under section 5 AHRA<sup>431</sup> remains. Noteworthily, the constitutionality of section 60 AHRA<sup>432</sup> was contested but confirmed by the Supreme Court of Canada in 2010.<sup>433</sup> The Court considered that section 60 AHRA<sup>434</sup> fell under the federal jurisdiction over criminal law.<sup>435</sup> The Supreme Court of Canada determined that section 60 ARA is ancillary to section 5 AHRA,<sup>436</sup> the validity of which the Attorney General of Quebec had conceded under federal criminal law jurisdiction.<sup>437</sup> The Court was of the opinion that but for section 5 AHRA, section 60 would have no purpose since it would have "nothing to enforce."<sup>438</sup> Section 5 AHRA<sup>439</sup> needs to be read with section 60 AHRA<sup>440</sup> since the latter determines the criminal penalties to enforce the former. Given its combined reading of sections 5 and 60 AHRA that makes MRT criminally prohibited, this decision is confirmed, and the prohibition remains.<sup>441</sup>

<sup>&</sup>lt;sup>428</sup> Cohen, Adashi & Ravitsky, *supra* note 427 at 590.

<sup>&</sup>lt;sup>429</sup> Ibid.

<sup>&</sup>lt;sup>430</sup> *Ibid*; Bartha Maria Knoppers et al, "Consensus Statement: Gene Editing, Genetic Testing and Reproductive Medicine in Canada" (Stem Cell Network, 2017), online: <a href="https://stemcellnetwork.ca/wp-content/uploads/2018/02/Consensus-Statement\_.pdf">https://stemcellnetwork.ca/wp-content/uploads/2018/02/Consensus-Statement\_.pdf</a>>.

<sup>&</sup>lt;sup>431</sup> Assisted Human Reproduction Act, supra note 194.

<sup>&</sup>lt;sup>432</sup> *Ibid*.

<sup>&</sup>lt;sup>433</sup> Reference re Assisted Human Reproduction Act, 2010 SCC 61.

<sup>&</sup>lt;sup>434</sup> Assisted Human Reproduction Act, supra note 194.

<sup>&</sup>lt;sup>435</sup> Reference re Assisted Human Reproduction Act, supra note 433 at 457.

<sup>&</sup>lt;sup>436</sup> *Ibid* at para 137.

<sup>&</sup>lt;sup>437</sup> *Ibid* at paras 15, 17, 17, 26, 87, 91. Authors have suggested that provinces may have an interest in constitutionally challenging section 5(1)(f) AHRA: Cohen, Adashi & Ravitsky, *supra* note 427 at 591. <sup>438</sup> *Ibid* at para 135.

<sup>&</sup>lt;sup>439</sup> Assisted Human Reproduction Act, supra note 194.

<sup>&</sup>lt;sup>440</sup> Ibid.

<sup>&</sup>lt;sup>441</sup> "Prohibitions related to scientific research and clinical applications" (last modified 5 February 2020), online: *Health Canada* <a href="https://www.canada.ca/en/health-canada/services/drugs-health-products/biologics-radiopharmaceuticals-genetic-therapies/legislation-guidelines/assisted-human-reproduction/prohibitions-scientific-

Almost two decades after the enactment of the AHRA, times have changed. According to a group of mostly Canadian experts, the AHRA is an outdated document needing to be revised in accordance with recent international scientific advancements.<sup>442</sup> This sentiment is shared by other experts as well as members of the public.<sup>443</sup> A review of the AHRA was in fact promised by the Parliament in the five years following its enactment, but it has yet to come.<sup>444</sup>

Given the federal government's failure to bring up to date the regulation of ARTs in Canada, the group of experts submitted recommendations for changes to the AHRA, most of which are addressing the criminal prohibition of section 5 AHRA.<sup>445</sup> The group recognizes that the prohibition of section 5 AHRA446 includes MRT.447 Thus, while the experts' recommendations were made in the broader context of ARTs, we are extending them to the specific context of our study, i.e., MRT.

The experts argue that criminal prohibitions hinder scientific research for the benefit of human reproductive medicine. Some further argue that current prohibitions are in violation of the right to benefit from scientific progress<sup>448</sup> and of the right to the highest attainable standard of health for children.<sup>449</sup> In addition, other commentators argue that prohibitions should only be used to avoid

research-clinical-applications.html>: "[The] prohibition [of section 5(1)(f)] makes it illegal in Canada to knowingly create embryos that have nuclear DNA from two people and mitochondrial DNA from a third person." <sup>442</sup> Bubela et al, *supra* note 263 at 1.

<sup>&</sup>lt;sup>443</sup> Noohi, Li & Joly, *supra* note 259 at 452, 455.

<sup>&</sup>lt;sup>444</sup> Cohen, Adashi & Ravitsky, *supra* note 427 at 590; Knoppers et al, *supra* note 430.

<sup>&</sup>lt;sup>445</sup> Assisted Human Reproduction Act, supra note 194.

<sup>&</sup>lt;sup>446</sup> Ibid.

<sup>&</sup>lt;sup>447</sup> Bubela et al, *supra* note 263 at 1.

<sup>&</sup>lt;sup>448</sup> UN, Universal Declaration of Human Rights (UDHR), General Assembly (1948), art 27(1); International Covenant on Economic, Social and Cultural Rights (ICESCR), General Assembly Res 2200A (XXI) (1966), art 15(1)(b); Erika Kleiderman, Vardit Ravitsky & Bartha Maria Knoppers, "The 'serious' factor in germline modification" (2019) 45:8 J Med Ethics 508 at 510.

<sup>&</sup>lt;sup>449</sup> United Nations Convention on the Rights of the Child, supra note 84, art 24(d); International Covenant on Economic, Social and Cultural Rights, supra note 448, art 12; Kleiderman, Ravitsky & Knoppers, supra note 448 at 510.

the "greatest of harms"<sup>450</sup> or a conduct that is morally reprehensible, but that it should not hamper scientific research.<sup>451</sup> To sum up, criminal bans are unnecessarily severe. We agree with the authors that ARTs need a regulated environment to safely evolve but are overly restricted under the AHRA.

One way to explain why Canada maintains this position is that countries are generally afraid of being at the center of the next genomic scandal. To prevent another global scandal like the Chinese twins', legal, ethical, and scientific experts have called on countries to adopt moratoriums<sup>452</sup> or governance frameworks<sup>453</sup> and thus, hopefully, avoid repeating recent history thanks to global collaboration.<sup>454</sup> These worries confirm that ARTs involving genetic technologies are at our doorstep. They also encourage countries to adopt regulations to protect their population against potential harms brought by these new technologies. For instance, refusal to permit and regulate MRT will lead to medical tourism.<sup>455</sup> Thus, we suggest that a blanket ban covering all germline editing technologies is not and should not be the appropriate answer.

We encourage Canada to reevaluate position on MRT. We believe that ARTs involving genetic technologies are highly sophisticated and a certain level of regulation is required to ensure public health and public safety. This is why we are in favour of a regulatory framework like the one

<sup>&</sup>lt;sup>450</sup> Ubaka Ogbogu et al, "Research on Human Embryos and Reproductive Materials: Revisiting Canadian Law and Policy" (2018) 13:3 Healthc Policy 10 at 17.

<sup>&</sup>lt;sup>451</sup> Bartha Maria Knoppers et al, "Human gene editing: revisiting Canadian policy" (2017) 2:1 NPJ Regen Med 1 at 1.

<sup>&</sup>lt;sup>452</sup> Eric S Lander et al, "Adopt a moratorium on heritable genome editing" (2019) 567:7747 Nature 165 at 165.

<sup>&</sup>lt;sup>453</sup> Sara Reardon, "World Health Organization panel weighs in on CRISPR-babies debate" (2019) 567:7749 Nature 444 at 444.

<sup>&</sup>lt;sup>454</sup> David Cyranoski, "The CRISPR-baby scandal: what's next for human gene-editing" (2019) 566:7745 Nature 440 at 440. Over the last few years, countries have organized and participated in workshops to discuss potential guidelines and published the results of their work. One outcome of this effort is the WHO's recommendations for human genome editing that were published on July 12, 2021: World Health Organization (WHO), Expert Advisory Committee on Developing Global Standards for Governance and Oversight of Human Genome Editing, *Human genome editing: a framework for governance*, Technical Document, (2021).

<sup>&</sup>lt;sup>455</sup> Bubela et al, *supra* note 263 at 4; Bard Wilkinson, "Controversial 'three-person' IVF used for baby boy born in Greece" (11 April 2019), online: *CNN* <<u>https://www.cnn.com/2019/04/11/health/birth-experimental-ivf-greece-scln-intl/index.html</u>>; Baylis, *supra* note 4 at 46; Dimond & Stephens, *supra* note 19 at 243; Coghlan, *supra* note 52. About 15 babies were born via MRT in 5 countries: Ukraine, Mexico, Israel, Sweden, and Greece.

adopted by the UK.<sup>456</sup> Canada needs to establish some ground rules that are more flexible than the ones currently in place.<sup>457</sup> Instead of a complete ban, a more reasonable and nuanced approach would be to establish legal criteria and rules for implanting a genetically edited embryo in a clinical context, accompanied by penalties "backed by criminal law powers"<sup>458</sup> in case of a breach of the law.

Bubela and colleagues suggest that Canada should create a "carve-out" in the AHRA to allow for *in vitro* research for the activities prohibited under section 5 AHRA.<sup>459</sup> They extend their recommendation to experimental *in vivo* interventions currently prohibited under section 5 AHRA, such as MRT, unless MRT is proven to be unsafe or morally reprehensible.<sup>460</sup> The "carve-out" they propose would be similar to the one created in Canadian criminal law to allow for medical aid in dying and for the recreational use of cannabis.<sup>461</sup> We agree with the authors that a "regulatory carve-out would protect the safety and interests of Canadians [...] and allow [them] the opportunity to benefit from advances in knowledge in the fields of genomic."<sup>462</sup> Furthermore, as argued by another group of Canadian experts, such set of rules would ensure that Canadian science does not fall behind other more permissive western countries.<sup>463</sup> Indeed, it is quite surprising that Canada has adopted such a conservative framework given the progressive reputation of the country.<sup>464</sup>

<sup>&</sup>lt;sup>456</sup> 2015 MRT Regulations, supra note 19.

<sup>&</sup>lt;sup>457</sup> Noohi, Li & Joly, *supra* note 259 at 460; Erika Kleiderman & Ian Norris Kellner Stedman, "Human germline genome editing is illegal in Canada, but could it be desirable for some members of the rare disease community?" (2020) 11:2 J Community Genet 129 at 130.

<sup>&</sup>lt;sup>458</sup> Bubela et al, *supra* note 263 at 4.

<sup>&</sup>lt;sup>459</sup> *Ibid* at 3.

<sup>&</sup>lt;sup>460</sup> *Ibid*.

<sup>&</sup>lt;sup>461</sup> *Ibid* at 4.

<sup>&</sup>lt;sup>462</sup> *Ibid*.

<sup>&</sup>lt;sup>463</sup> Bartha Maria Knoppers & Erika Kleiderman, "CRISPR babies': What does this mean for science and Canada?" (2019) 191:4 CMAJ E91 at E91; I Cohen, Adashi & Ravitsky, *nupra* note 427 at 591.

<sup>&</sup>lt;sup>464</sup> Andrea Boggio, Cesare P R Romano & Jessica Almqvist, "The Regulation of Human Germline Genome Modification (HGGM) at the National Level: A Call for Comprehensive Legal Reform" 43:3 Loy LA Int'l & Comp L Rev 201 at 206.

In a Consensus Statement published for the Stem Cell Network following a series of workshop on the topic of gene editing and reproductive medicine in Canada, another group of Canadian experts are asking to lift current criminal bans on MRT as they are an "unsuitable policy instrument to regulate human genetic and reproductive medicine research."<sup>465</sup> They argue that as long as MRT is proven to be safe and effective against transmission of serious mitochondrial defects, it should be allowed.<sup>466</sup> However, an ethical debate exists in the literature as to what genetic defect should be considered "serious."<sup>467</sup> Nevertheless, we advocate for the inclusion of such criteria in a future Canadian law on MRT.

## B. Canadian Triple Parenthood: Yay or Nay?

To better evaluate Canada's potential position on parenthood in the context of MRT, we have dived in Chapter III, B into parenthood in the broader context of assisted reproduction in Quebec, Ontario, and British Columbia. First, our analysis demonstrates that a DNA donor is not considered a parent on the sole basis of providing genetic material to the child but can become a parent if they meet the legal criteria for intending parents. Second, our analysis also demonstrates that in the case of a DNA donor legally recognized as an intending parent, they can be a third legal parent in some provinces only. Ontario and British Columbia family statutes allow it, while Quebec family statutes do not.

Our analysis leads us to believe that if any germline modifying gene therapies were to be legalized in fertility treatments in Canada, a donor of genetic material would not be automatically recognized as a legal parent since their mere shared genetic material with the child is insufficient

<sup>&</sup>lt;sup>465</sup> Knoppers et al, *supra* note 430, principle 2.

<sup>&</sup>lt;sup>466</sup> *Ibid*, bullet point 5.

<sup>&</sup>lt;sup>467</sup> Kleiderman, Ravitsky & Knoppers, *supra* note 448 at 508.

to establish legal parentage.<sup>468</sup> For instance, in Quebec, DNA donors are considered third parties to the parental project<sup>469</sup> and their genetic contribution cannot serve as the foundation of a filiation bond.<sup>470</sup> They are not parents, but genitors.

Intention is central to assisted procreation and one way to express and formalize such intention under law is via a written agreement. In Ontario, for instance, donors of reproductive material are not parents to the child unless they are part of a written agreement between intending parents.<sup>471</sup> The CLRA uses words evoking this element of intention such as "agree," "agreement," and "together,"<sup>472</sup> as well as the expression "intended parent"<sup>473</sup> to designate potential parents under the law. In British Columbia, the law does not attribute parenthood to DNA donors "by reason only of [their] donation" either.<sup>474</sup> However, like in Ontario, DNA donors can be parents if they intend to and sign a written agreement to this effect under British Columbia law.<sup>475</sup> Again, the use of words such as "agreement" and "intended parent(s)"<sup>476</sup> illustrate willingness to be involved in the family unit. If a DNA donor intends to be a parent to the child and signs a written agreement to that effect, they can acquire the status of legal parent.

In Quebec, a unique and controversial<sup>477</sup> exception applies in the context of assisted reproduction: if the child is conceived through sexual intercourse, filiation may be established between the sperm contributor and the child within a year from the birth.<sup>478</sup> In such case, the partner

<sup>&</sup>lt;sup>468</sup> Art 538.2(1) CCQ; *Children's Law Reform Act, supra* note 211, s 5; *Family Law Act, supra* note 213, s 24(1).

<sup>&</sup>lt;sup>469</sup> Art 538 CCQ; *Droit de la famille — 111729, supra* note 202 at para 41.

<sup>470</sup> Art 538 CCQ.

<sup>&</sup>lt;sup>471</sup> Children's Law Reform Act, supra note 211, ss 9 (to read with 5 and 1(1)).

<sup>&</sup>lt;sup>472</sup> *Ibid*, ss 9(1), 10.

<sup>&</sup>lt;sup>473</sup> *Ibid*, s 10.

<sup>&</sup>lt;sup>474</sup> Family Law Act, supra note 213, s 24(1).

<sup>&</sup>lt;sup>475</sup> *Ibid*, s 30(1)(b)(ii).

<sup>&</sup>lt;sup>476</sup> *Ibid*, s 30(1).

<sup>&</sup>lt;sup>477</sup> Pratte, *supra* note 209 at 576; LaViolette, *supra* note 207 at 681–682.

<sup>&</sup>lt;sup>478</sup> Art 538.2(2) CCQ.

of the gestational parent cannot oppose the filiation. <sup>479</sup> The Quebec exception illustrates how difficult it is to reconcile rules of filiation from one Canadian province to another in the context of assisted reproduction. It also shows how fragile the status of intending parents can be if the sperm donor claims filiation within the year following the natural conception of the child. Indeed, under the Quebec exception, the biological account of parenthood seems to prevail on the intentional account. The fragility of the filiation bond can be a source of stress for future parents. In this case, they may prefer to turn to anonymous donors as their "only sure way to protect against [a] breach of a settled [parental] arrangement."<sup>480</sup>

To avoid surprise claims of parentage and to encourage donors to contribute without the fear of being imposed unwanted parental obligations, there was once a "universally-held policy of keeping the identify of donors anonymous."<sup>481</sup> Laws were "tailored to maintain the secrecy of the [...] donor"<sup>482</sup> and in some cases, anonymity was even required.<sup>483</sup> As we increasingly see prospective parents turning to loved ones to materialize their family ambitions, knowledge of the donor's identity may exceptionally open the door to future unwanted declarations of parentage. Indeed, in some instances, biology and genetics are still the preferred focus of courts.<sup>484</sup> As exposed by Campbell, when parenthood is contested by a sperm donor in the context of a same-sex partnership, Canadian courts have a tendency to attribute parenthood to the former, who share a genetic relationship to the child, in lieu of the partner of the gestational parent.<sup>485</sup> This was the end result in the *A.A. v. B.B.* case at the Superior Court, where the partner of the gestational parent was

<sup>&</sup>lt;sup>479</sup> Art 538.2(2) CCQ.

<sup>&</sup>lt;sup>480</sup> Wiegers, *supra* note 210 at 190.

<sup>&</sup>lt;sup>481</sup> Caulfield, *supra* note 87 at 76.

<sup>&</sup>lt;sup>482</sup> *Ibid* at 91 n 369.

<sup>&</sup>lt;sup>483</sup> Art 542 CCQ; Comité consultatif sur le droit de la famille, *supra* note 201 at 192.

<sup>&</sup>lt;sup>484</sup> Campbell, *supra* note 223 at 259.

<sup>&</sup>lt;sup>485</sup> *Ibid* at 260.

denied parentage to the benefit of both the sperm donor and gestational parent, on the grounds that the Court lacked jurisdiction to choose otherwise.<sup>486</sup> This is also the scenario illustrated through the Quebec exception discussed above.<sup>487</sup> Although exceptional, these variations can be a source of great stress for prospective parents.

Many legal complications may arise from non-harmonized filiation rules among Canadian provinces. In an attempt to reconcile these rules and to ensure equal treatments of all Canadian children, regardless of their method of conception, the Uniform Law Conference of Canada adopted the Uniform Child Status Act (UCSA) in 2010.<sup>488</sup> This document provides recommended provisions for provinces and addresses filiation in the context of assisted reproduction, including a presumption that a person be considered a parent of a child conceived through assisted reproduction as long as the person consents to it and is either married or in a common-law partnership with the gestational parent at the time of conception.<sup>489</sup> The British Columbia FLA was largely inspired by the essence of the UCSA,<sup>490</sup> but not all provinces followed it.

Our analysis also demonstrates that even in the case of a DNA donor who meets the criteria of an intending parent, only a few provinces attribute legal parentage to more than two parents. Quebec, for instance, does not recognize more than two legal parents to a child under any circumstances.<sup>491</sup> Thus, in a scenario where both the egg and the sperm donors are recognized as legal parents, a DNA donor cannot acquire this status as well under Quebec law. In a scenario

<sup>&</sup>lt;sup>486</sup> A. A. v. B. B., supra note 358 at para 38.

<sup>&</sup>lt;sup>487</sup> Art 538.2(2) CCQ.

<sup>&</sup>lt;sup>488</sup> Uniform Child Status Act, 2010 at 5. See comment section.

 $<sup>^{489}</sup>$  *Ibid*, s 5(1)(b). However, in the comment section underneath the text of the provision, the use of the expression "the other parent" suggests that the UCSA does not go as far as to recognize more than two parents to a child: "the other parent may be either a male spouse or common-law partner or a female spouse or common-law partner of the birth mother."

<sup>&</sup>lt;sup>490</sup> Michelle Kinney, "Baby Steps: Assisted Reproduction Technology and Fertility Law in Canada" (ABA Section of Family Law: The Commonwealth of ART, 2016) [unpublished] at slide 13.

<sup>&</sup>lt;sup>491</sup> Art 539.1 CCQ; *Droit de la famille* — *191677*, *supra* note 297 at para 170.

where a DNA donor would acquire such status, another prospective parent would have to renounce to the bond of filiation, often the partner of the gestational parent.<sup>492</sup>

The first step towards Canadian multiple parenthood was made in Ontario through the *A.A. v. B.B.*<sup>493</sup> case where the Court of Appeal relied on its *parens patriae* jurisdiction to grant the application. The structure of the analysis then inspired Newfoundland<sup>494</sup> and British Columbia.<sup>495</sup> Unfortunately, the *parens patriae* being a jurisdiction historically vested to common law courts, Quebec courts do not benefit from it.<sup>496</sup> Moreover, some authors believe it is duplicative to the legal tools already available under civil law which allow to consider a child's interest.<sup>497</sup>

Ontario and British Columbia have not only demonstrated openness towards a multi-parental model for Canadian families but also legally acknowledged it.<sup>498</sup> Indeed, in Ontario, preconception parentage agreements can include up to four parties<sup>499</sup> who may be recognized as legal parents.<sup>500</sup> In British Columbia, a trilogy (or more) of legal parents can be recognized in the context of assisted reproduction if previously agreed in writing.<sup>501</sup> If Quebec were to change its stance on multiple legal parenthood, the province would have to undertake a family law reform.<sup>502</sup>

<sup>&</sup>lt;sup>492</sup> Campbell, *supra* note 223 at 259–260.

<sup>&</sup>lt;sup>493</sup> A. A. v. B. B., supra note 358.

<sup>&</sup>lt;sup>494</sup> C.C. (*Re*), *supra* note 354.

<sup>&</sup>lt;sup>495</sup> Birth Registration No. 2018-XX-XX5815, supra note 408.

<sup>&</sup>lt;sup>496</sup> Leckey, *supra* note 350 at 547; *W(V) c S(D)*, [1996] 2 RCS 108 at 58; Michel Morin, "La compétence parens patriae et le droit privé québécois: un emprunt inutile, un affront à l'histoire" (1990) 50:5 R du B 827 at 901–902; Robert P Kouri, "L'arrêt Eve et le droit québécois" (2019) 18:3 RGD 643 at 648–649.

<sup>&</sup>lt;sup>497</sup> Morin, *supra* note 496 at 901–902; *W. (V.) c. S. (D.), supra* note 496 at para 59; Kouri, *supra* note 496 at 648–649.

<sup>&</sup>lt;sup>498</sup> Children's Law Reform Act, supra note 211, s 9; Family Law Act, supra note 213, s 9(2), 30(1)(b)(ii).

<sup>&</sup>lt;sup>499</sup> Children's Law Reform Act, supra note 211, s 9(2)(a).

<sup>&</sup>lt;sup>500</sup> *Ibid*, s 9(4).

<sup>&</sup>lt;sup>501</sup> Family Law Act, supra note 213, s 30(1)(b)(ii).

<sup>&</sup>lt;sup>502</sup> Leduc, *supra* note 348.

### VI. CONCLUSION

In our study, we attempted to answer the following question: in the context of mitochondrial replacement therapy, does genetic manipulation produce triparental children in the eyes of Canadian family law? We answer that unless there is an intention from the mDNA donor to be a parent to the child, MRT itself does not produce triparental children under the law based solely on the sharing genetic material with said child.

In Chapter I, we situated MRT among other gene therapies to gain a better understanding of the science behind it. We also provided an overview of the ethical issues associated with this technology from a global perspective.

In Chapter II, we presented our first argument, which is that biology itself is not enough to establish parenthood. After discussing the main differences with nDNA and mDNA, which led to the legalization of the MRT Regulations in the UK, we concluded that not only is the genetic contribution of the mDNA donor too low to contribute to the child's identity, but DNA donors are generally explicitly excluded from the category of parents in ARTs laws. This is because intention is generally preferred over biology in assisted reproduction cases.

In Chapter III, we further argued that MRT is unlikely to produce a trilogy of parents since current family laws in Canada remain built on a traditional, heteronormative, and binomial model. However, there are some exceptions to this conservative trend. Noting that MRT is criminally banned in Canada, we approached our research question from a broader perspective and found evidence of multi-parental Canadian families in some provinces in cases of ARTs. While Quebec keeps a strict two-parents rule, Ontario and British Columbia have taken a modern approach on the matter by recognizing more than two parents to a child in some cases. In Chapter IV, we concluded that while DNA donors cannot be legal parents by reason only of their genetic contribution, they may be legal parents if they have such intention. However, in Quebec, there cannot be more than two legal parents. Meanwhile, both Ontario and British Columbia have integrated the concept of multiple parenthood into their laws. In Ontario, the province recognizes up to four legal parents in the context of assisted reproduction while British Columbia can recognize a trilogy, or even more.

Canada needs to thoroughly review its provincial parentage laws to make sure they are in tune with current social practices, especially with regard to rules of filiation in the context of assisted reproduction. When establishing parentage, courts generally prefer an intentional account of parenthood to a biological one.<sup>503</sup> Yet, there are some instances in which courts may favour genetic relationships, such as the case of a child naturally conceived with a sperm donor under Quebec law.<sup>504</sup> In 2010, section 5 of the recommended provisions of the UCSA illustrates the incorporation of the intentional account of parenthood since the presumption of parenthood applies to a person who has consented to be the child's parent.<sup>505</sup> However, not all provinces adopted the recommended provisions and exceptions like the Quebec one remain.<sup>506</sup>

As for the future of MRT in Canada, it remains uncertain. If MRT were to be legal in Canada, studies have shown that 12-15 women could benefit from this gene therapy annually.<sup>507</sup> While this may seem like a small number of concerned individuals, the ethical, legal, and social issues associated with the discussion on MRT are highly important as they may relate to other ARTS.

<sup>&</sup>lt;sup>503</sup> Uniform Child Status Act, supra note 488, s 5. See comment section.

<sup>&</sup>lt;sup>504</sup> Campbell, *supra* note 223 at 259–260; Art 538.2(2) CCQ.

<sup>&</sup>lt;sup>505</sup> Uniform Child Status Act, supra note 488, s 5(2)(b). See comment section.

<sup>&</sup>lt;sup>506</sup> Art 538.2(2) CCQ.

<sup>&</sup>lt;sup>507</sup> Noohi, Li & Joly, *supra* note 259 at 458.

We reiterate that the Canadian blanket criminal ban on MRT is staggering since this ban sets Canada back both clinically and scientifically. The AHRA prohibition does not allow for any legislative space to regulate this important technology that is on our doorstep, whether we like it or not. Indeed, as foreseen by the Italian parliamentarians, the phenomenon of globalization means that a person born through MRT may generate offspring outside the borders of the country where this technology is regulated. Their genetic baggage may have an impact on the human germline beyond their MRT-regulated environment. In addition to these elements, medical tourism makes it difficult to assess the relationship between a country's approach to MRT and the actual occurrence of MRT-related births in that country. Thus, flagrantly ignoring MRT and its challenges provides no guidance on how to resolve the issues discussed. Canada needs to take a different approach to MRT and not hide from its responsibilities towards the public and the scientific community behind a blanket criminal ban.

Recently, the government of Quebec took an interesting initiative in the eventuality that Canada one day legalizes MRT<sup>508</sup> by creating the "Commission de l'Éthique en Science et en Technologie" to discuss issues related to this practice. However, their 2019 statement does not directly address parentage.<sup>509</sup>

Finally, the ever-evolving modern family unit and the development of new technologies for assisted reproduction will continue to introduce unforeseeable questions in family laws. Canadian legislators need to acknowledge the fragmentation and dissolution of our traditional conceptions of the family. Otherwise, we will be "falling behind social and scientific changes, and [our]

<sup>&</sup>lt;sup>508</sup> Cohen, Adashi & Ravitsky, *supra* note 427 at 591.

<sup>&</sup>lt;sup>509</sup> Commission de l'éthique en science et en technologie, *Bébés génétiquement modifiés - Enjeux éthiques soulevés par la modification génétique des cellules germinales et des embryons* (Quebec, 2018).

children [will] be paying the price.<sup>3510</sup> Laws have traditionally served a purpose which goes beyond establishing biological parenthood. Indeed, legal fictions have often favoured intentional and social relationships to ensure the stability of families. In the name of the best interest of the child, the introduction of germline modifying technologies in fertility treatment should follow the same path.

<sup>&</sup>lt;sup>510</sup> LaViolette, *supra* note 207 at 683.

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