Notions of Reproductive Harm in Canadian Law: Addressing Exposures to Household Chemicals as Reproductive Torts

Alana Cattapan*, Roxanne Mykitiuk** & Mark Pioro***

Mounting scientific evidence is suggesting that various synthetic chemicals are ubiquitous in the household and natural environment, and are affecting reproductive health in humans. Yet litigation in response to exposure to harmful chemicals has had limited success. This is in large part because causation is often difficult to prove, as exposure often occurs over long periods of time, and the sources of suspected chemical agents are ubiquitous and/or diffuse. In light of these challenges, there is a need to consider new legal strategies to confront these harms.

*This article examines the potential for prenatal exposure to harmful chemicals to be approached as reproductive torts as opposed to toxic torts. Focusing on two groups of household chemicals – brominated flame retardants and phthalates – this article identifies the ways in which prenatal injury claims and birth torts (*i.e. *wrongful pregnancy, wrongful birth, and wrongful life cases) can inform future litigation regarding prenatal exposures to risky household chemicals. In particular, reproductive tort jurisprudence offers a variety of ways of conceptualizing causation, injury and fault in cases where individuals are exposed to synthetic household chemicals before birth.*

---

* BSocSc, MA, PhD candidate at York University.

** BA, LLB, LLM, JSD, Associate Professor of Law at Osgoode Hall Law School.

*** BA, MA, JD (of the Ontario Bar), was a Research Associate at Osgoode Hall Law School while employed on this project. The authors made equal contributions to this article and appear in alphabetical order.

I. Introduction[1]

The human health effects of exposure to synthetic chemicals, ubiquitous in present-day society, call attention to the vulnerability of reproductive and developmental processes that may be influenced by these substances. Biological systems developing *in utero* and throughout childhood are particularly susceptible to environmental influences,[2] and exposures may result in negative health effects, including harms to the reproductive system.[3] Cases of exposure to diethylstilbestrol (DES) offer a historically significant example in which exposure to synthetic

1. Supported by grant RHF100625 and grant RHF-100626 from the Institute for Human Development, Child and Youth Health (IHDCYH), Canadian Institutes of Health Research (CIHR).

2. American College of Obstetricians and Gynecologists Committee on Health Care for Underserved Women & American Society for Reproductive Medicine Practice Committee, "Committee Opinion No 575: Exposure to Toxic Environmental Agents" (2013) 122:4 Obstetrics & Gynecology 931 at 931; Philippe Grandjean et al, "The Faroes Statement: Human Health Effects of Developmental Exposure to Chemicals in Our Environment" (2008) 102:2 Basic & Clinical Pharmacology & Toxicology 73.

3. For example, a number of human studies have shown that exposures to common household plasticizers (phthatlates) "are associated with a direct adverse effect on androgen function in men," and linked to shortened anogenital distance. See Richard Grady & Sheela Sathyanarayana, "An Update on Phthalates and Male Reproductive Development and Function" (2012) 13:4 Current Urology Reports 307 at 309.

chemicals had substantive effects for those exposed *in utero* and for the children of those exposed *in utero*.[4] In addition, fetuses and children face higher exposure rates to chemicals due to their smaller size, and, for children, the accumulation of toxic substances in breast milk and their close physical contact with household objects.[5]

Currently, a number of household chemicals are under scrutiny due to their ubiquity and the identification of potential harms to the reproductive health of those exposed *in utero*, particularly harms to male reproductive health. For example, brominated flame retardants (BFRs), found in furniture, carpeting, electronics, children's pyjamas, and a number of other consumer products,[6] are found in the blood of most of the general population and have been linked to altered testicular cells in male rats exposed *in utero*.[7] Epidemiological studies have also suggested the existence of correlative relationships between exposures to BFRs and reduced testis size, sperm concentration,[8] altered hormone

4. See Richard Goldberg, "Causation and Drugs: The Legacy of Diethylstilbestrol" (1996) 25 Anglo-Am L Rev 286; W Lenz, "A Short History of Thalidomide Embryopathy" (1988) 38:3 Teratology 203.
5. See for example Joseph L Jacobson, Sandra W Jacobson & Harold EB Humphrey, "Effects of Exposure to PCBs and Related Compounds on Growth and Activity in Children" (1990) 12:4 Neurotoxicology and Teratology 319 at 319 (on the breastmilk point); Theo Colborn, Frederick S vom Saal & Ana M Soto, "Developmental Effects of Endocrine-Disrupting Chemicals in Wildlife and Humans" (1993) 101:5 Environmental Health Perspectives 378 (on the vulnerability and permanent nature of exposure during development); Vincent F Garry, "Pesticides and Children" (2004) 198:2 Toxicology and Applied Pharmacology 152; Philippe Grandjean et al, "The Faroes Statement: Human Health Effects of Developmental Exposure to Chemicals in Our Environment" (2008) 102:2 Basic & Clinical Pharmacology & Toxicology 73 (on sensitivity of fetal and neonatal development).
6. Sheila R Ernest et al, "Effects of Chronic Exposure to an Environmentally Relevant Mixture of Brominated Flame Retardants on the Reproductive and Thyroid System in Adult Male Rats" (2012) 127:2 Toxicological Sciences 496.
7. Yi-Qian Ma, *Understanding the Effects of Exposure to an Environmentally Relevant Mixture of Brominated Flame Retardant Congeners on the Function and Development of the Male Gonad* (M Sc Thesis, McGill University Faculty of Medicine, 2013) [unpublished] at 61.
8. K Akutsu et al, "Polybrominated Diphenyl Ethers in Human Serum and Sperm Quality" (2008) 80:4 Bulletin of Environmental Contamination

levels,[9] and birth weight anomalies.[10] Phthalates are another class of household chemicals that are found in cleaning supplies, building materials, cosmetics, toys, food packaging, medical devices, clothing, and other plasticized consumer goods.[11] Animal studies have demonstrated negative effects of phthalate exposure *in utero*, including reduced testosterone production[12] as well as cryptorchidism,[13] hypospadias,[14] and shortened anogenital distance[15] in males.[16] Human studies have also suggested a correlation between *in utero* exposure to phthalates and reduced anogenital distance and cryptorchidism.[17] Though scientific

---

Toxicology 345 at 349.

9. John D Meeker et al, "Polybrominated Diphenyl Ether (PBDE) Concentrations in House Dust are Related to Hormone Levels in Men" (2009) 407:10 Science of the Total Environment 3425 at 3428.
10. Sanna Lignell et al, "Prenatal Exposure to Polychlorinated Biphenyls (PCBs) and Polybrominated Diphenyl Ethers (PBDEs) May Influence Birth Weight Among Infants in a Swedish Cohort With Background Exposure: A Cross-sectional Study" (2013) 12:44 Environmental Health 1.
11. American College of Obstetricians and Gynecologists Committee on Health Care for Underserved Women & American Society for Reproductive Medicine Practice Committee, *supra* note 2 at 933.
12. Daniel B Martinez-Arguelles et al, "In Utero Exposure to the Antiandrogen Di-(2-Ethylhexyl) Phthalate Decreases Adrenal Aldosterone Production in the Adult Rat" (2011) 85:1 Biology of Reproduction 51 at 60.
13. Jane S Fisher et al, "Human 'Testicular Dysgenesis Syndrome': A Possible Model Using In-utero Exposure of the Rat to Dibutyl Phthalate" (2003) 18:7 Human Reproduction (Oxford Journals) 1383.
14. *Ibid.*
15. Bethany R Hannas, "Dose-Response Assessment of Fetal Testosterone Production and Gene Expression Levels in Rat Testes Following *In Utero* Exposure to Diethylhexyl Phthalate, Diisobutyl Phthalate, Diisoheptyl Phthalate, and Diisononyl Phthalate" (2011) 123:1 Toxicological Sciences 206; M Ema, E Miyawaki & K Kawashima, "Further Evaluation of Developmental Toxicity of Di-*n*-butyl Phthalate Following Administration During Late Pregnancy in Rats" (1998) 98:1-2 Toxicology Letters 87.
16. Cryptorchidism occurs when "one or both testicles do not descend into the scrotum." Hypospadias is a condition in which the "urethral opening is displaced toward the scrotum." See Leonard J Paulozzi, "International Trends in Rates of Hypospadias and Cryptorchidism" (1999) 107:4 Environmental Health Perspectives 297 at 297.
17. Shanna H Swan, "Environmental Phthalate Exposure in Relation to

studies have not conclusively demonstrated links between exposures to BFRs and phthalates and intergenerational reproductive harm, there is accumulating evidence about effects of *in utero* exposure to household chemicals and the development of the reproductive system.

Over the past several decades, Canada and other countries have developed legislation and public policy responding to knowledge of these effects.[18] In addition to state-based interventions, consumers

---

Reproductive Outcomes and Other Health Endpoints in Humans" (2008) 108:2 Environmental Research 177.

18. For example, the 1999 *Canadian Environmental Protection Act*, SC 1999, c 33 [*CEPA*] is the primary legislation governing toxic chemicals in Canada, and following an expansion of the Act's regulatory scheme in 2008, the "use, [sale], offer for sale or import" of some widely used BFRs (namely polybrominated diphenyl ethers or PBDEs) was banned. The 2006 expansion of the federal regulation of toxics was encapsulated under the three-part *Chemicals Management Plan* [CMP], which aimed to get "tough on toxics" through 1) issuing a "challenge" to industry to better self-regulate and provide information to the public about particularly hazardous chemicals; 2) increased regulation of "food, cosmetics, drugs or biological drugs and pesticides"; and 3) an expansion of funding for research "to learn more about the effects of chemical exposure on human health and the environment, as well as to provide the necessary means to measure the success of actions to control or reduce risks." This included the highly-publicized banning of one phthalate plasticizer, Bisphenol A (BPA), used in hard plastic vessels such as baby bottles and re-usable water bottles. Other phthalates remain on the market and are found in personal care products (*i.e.* cosmetics and shampoo), though as of 1998 there has been a voluntary withdrawal of two phthalates from products intended to be consumed or mouthed by young children. New regulations implemented in 2011 have since restricted the "advertising, sale and importation of toys and child care articles composed of vinyl containing phthalates" containing higher than regulated levels of any of six common phthalates. The regulation of toxic household chemicals in Canada, and particularly the CMP, has not included consistent requirements – leaving some chemicals on the market long after there is consensus about their toxicity while others are quickly banned – and has raised questions about whether government or industry should take on the onus for assessing harm. See *Polybrominated Diphenyl Ethers Regulations*, SOR/2008-218, s 7(1); Dayna Nadine Scott, "Beyond BPA: We Need to Get Tough on Toxics," *Women & Environments Network Magazine* 88/89 (1 October 2011) 43; Government of Canada, *Overview of the Chemicals Management Plan* (2006), online: Government of Canada <http://www.chemicalsubstanceschimiques.gc.ca/fact-fait/overview-vue-eng.php>;

are increasingly expected to manage their exposure, mitigating risk by following the advice of experts and making smart choices about the products they buy and use.[19] Advice about how to reduce exposures to BFRs includes, for example, replacing mattresses and sofas that are coated with BFRs with products that are not, or dusting and vacuuming more frequently to reduce exposures to contaminated house dust.[20] Advice about reducing exposure to phthalates includes paying attention to labelling to avoid products containing phthalates, more frequent cleaning of the home, and engaging in food preparation that avoids phthalate-contaminated food-products and food-preparation products. For both groups of chemicals, the dominant means through which exposures can be avoided is household labour that most often falls to women: food preparation, household shopping, and cleaning.[21]

The individualized need to avoid exposures is particularly problematic for pregnant women, who are already expected to make choices that optimize the health of their future child by avoiding certain behaviours (*i.e.* stressful activities, smoking, excessive weight gain)[22] and products (*i.e.* raw fish, alcohol, caffeine, unpasteurized dairy)[23] linked to fetal harm. Chemical exposure is particularly suspect given that "chemicals in pregnant women can cross the placenta, and in some cases, such as with methyl mercury, can accumulate in the fetus, resulting in higher fetal exposure than maternal exposure" and is, in many cases, associated

---

Phthalates Regulations, SOR/2010-298, s 2.

19. Norah MacKendrick, *The Individualization of Risk as Responsibility and Citizenship: A Case Study of Chemical Body Burdens* (PhD Soc Thesis, University of Toronto Graduate Department of Sociology, 2012) [unpublished, archived at https://tspace.library.utoronto.ca/handle/1807/31850] at 36.
20. Robyn Lee & Dayna Nadine Scott, "(Not) Shopping Our Way to Safety" (30 April 2014), online: Canadian Women's Health Network <http://www.cwhn.ca/en/node/46308>.
21. *Ibid*; MacKendrick, *supra* note 19 at 42.
22. See for example, Public Health Agency of Canada, *The Sensible Guide to a Healthy Pregnancy* (Ottawa: Public Health Agency of Canada, 2008).
23. *Ibid*. See also "Tips For a Healthy Pregnancy," online: Eat Right Ontario <https://www.eatrightontario.ca/en/Articles/Pregnancy/Tips-for-a-healthy-pregnancy.aspx>.

with adverse "reproductive and developmental health outcomes."[24] The exceptional onus of protecting fetal health falls to pregnant women through their behaviours and consumption practices, even when exposures may be difficult to prevent, either due to the ubiquity of household chemicals or the social, temporal, and economic challenges of avoiding exposures. Responsibility for chemical exposures, and especially fetal exposures, largely falls to women as mothers, pregnant women, or as hypothetical mothers-to-be.[25]

This "precautionary consumption," – that is to say, the expectation that consumers should educate themselves about how to selectively choose the products they bring into their home as a means to minimize toxic exposures – works to individualize risk, putting the responsibility of reducing exposures to household chemicals on consumers, largely women, tasked with household management.[26] The burdens of precautionary consumption are not only disproportionately placed on women (particularly on pregnant women), but also on women of lower socio-economic status as both exposures and resources (*i.e.* time, financial capacity) differ substantially among those of higher and lower socio-economic status. Precautionary consumption works to shift a collective concern – the toxic chemicals in consumer products and in the environment – and to put the responsibility for reducing exposures on individuals, primarily women, through their engagement with a free market in household chemicals.

Beyond legislative, regulatory, and market-based attempts to mitigate the harms of chemical exposures, there exists limited jurisprudence addressing environmental chemical exposures. This body of law has focused largely on "toxic torts" that, like precautionary consumption, also frame harm as a matter of individual responsibility and injury rather than a matter of collective and public health. In both individual and class-action claims, physiological harms are often too vaguely linked to chemical exposures and, when exposures occur over a long period of time,

24. American College of Obstetricians and Gynecologists Committee on Health Care for Underserved Women & American Society for Reproductive Medicine Practice Committee, *supra* note 2 at 3.
25. Lee & Scott, *supra* note 20.
26. *Ibid*.

the potential impact of other factors is too great to establish causation. In short, these cases have been largely unsuccessful due to the challenging nature of establishing causation in negligence and the complex, diffuse nature of exposure. While toxic household chemicals are ubiquitous and suspected of causing significant physiological harm, there are few avenues for legal remedy. Making claims about harms caused by exposures to household chemicals is particularly challenging when those whose health is harmed are not only existing individuals, but also non-existent, that is to say, future people.

Individual and class-action toxic tort claims in Canada have had little success to date. In contrast, a rich jurisprudence has developed in Canada regarding reproductive harms. These cases cover numerous factual contexts, including (but not limited to): medical malpractice; assisted reproductive technologies; women's conduct during pregnancy; pharmaceutical drug development; motor vehicle accidents; and violence against pregnant women. As noted above, emergent science is linking exposures to household chemicals to specific reproductive harms. The links between BFRs and phthalates and adverse male reproductive health described above[27] suggest that exposures to household chemicals are a different sort of toxic tort. That is, they are not merely a matter of environmental or health law, but may also fall under jurisprudence governing reproduction. Harms caused by exposures to household chemicals could be framed at once as matters of toxicity and reproduction and, given the problematic record of case law in Canada regarding toxicity, there might be greater potential for successful litigation if claims were articulated in terms of reproductive or birth torts rather than toxic torts. Characterizing reproductive harms incurred by exposures to household chemicals as a matter of reproductive harm first, and of toxicity second, allows for lines of analysis developed in cases of reproductive injury to be applied to the case of chemical exposures. This line of argumentation at once addresses the need for flexibility in establishing causation of prenatal harms and the need to protect women's reproductive autonomy in the governance of pregnancy (and conception).

This paper identifies the relevance of legal approaches to reproductive

27. Akutsu et al, *supra* note 8 at 349.

harm in Canadian law to the case of harm caused by exposures to household chemicals prior to birth. It examines the broad history of reproductive torts in Canada – namely personal injury claims, "birth torts" (*i.e.* wrongful pregnancy, birth, and life claims), and preconception claims – identifying in turn the jurisprudential principles that may be applied to cases where the tortious act involves exposures to household chemicals prior to birth. To do so, the paper begins with a brief discussion of the harms caused by exposures to toxic chemicals, including household chemicals, identifying the limited potential for arguing causation in Canadian toxic tort cases. It then turns to its main purpose, providing an overview of reproductive torts beginning with the most straightforward type of case, namely, prenatal injury claims. These claims are highly analogous to "ordinary" personal injury cases, the main difference being that the claimant is *in utero* at the time of his or her injury. This section of the paper also examines prenatal injury claims in which the child sues his or her own mother with respect to her prenatal conduct. This type of claim most clearly illustrates the concern over women's autonomy that permeates reproductive tort. In its third section, the paper examines "birth torts," in which the alleged harm itself is the birth of an unwanted child. It examines three classes of birth torts, namely "wrongful conception," "wrongful birth," and "wrongful life" cases, though these categories are highly contested.[28] These cases highlight the struggle to recognize the rights of parents to reproductive autonomy while also recognizing the value of the lives of children. In section four, the paper examines cases of prenatal injury where the negligence is alleged to have occurred not while the child was *in utero*, but prior to conception. This type of claim raises several concerns centering on the feasibility of imposing a duty toward one who does not yet exist. In its fifth section, the paper examines cases that defy the neat characterizations set out above, including cases where both prenatal injury claims or preconception injury claims and "birth torts" are at issue. The paper concludes by identifying that although tort law is limited in its ability to address harms potentially caused by prenatal and preconception exposures to household chemicals, reproductive torts offer important insights useful to developing a more robust approach to

28. See discussion of this categorization below at note 146.

addressing intergenerational reproductive harm.

II. Chemical Exposures and Toxic Torts

Research has long demonstrated that exposure to a wide variety of chemicals in sufficient dosage can have detrimental health effects.[29] Canadians are exposed to an array of "known and suspected carcinogens, hormone disruptors, developmental toxins and neurotoxins" due to their presence in consumer products, the food and water supply, soil, and in minute quantities, the environment.[30] Indeed, these chemicals are everywhere. Recent attention has been paid to chemicals that alter the development of the reproductive system or that may interfere with the endocrine system when exposures occur *in utero*, resulting in adverse results for sperm and oocyte development, low birth weight, congenital anomalies, premature birth, and other adverse effects.[31]

The known and suspected effects of specific chemical exposures are particularly important to examine in the legal context due to their intergenerational effects and the complex nature of any potential litigation. BFRs and phthalates, for example, are suspected to have adverse effects on both male and female development of the reproductive tract when exposures occur *in utero*, based on findings in rodent studies.[32] Although the human health effects of BFRs (as mentioned above) are unknown, epidemiological studies have suggested that there are adverse effects on the male reproductive system including reduced testis size and reduced sperm concentration. The endocrine system may also be affected, as epidemiological studies have shown changes in hormone levels associated

29. Royal Commission on New Reproductive Technologies, *Proceed with Care: Final Report of the Royal Commission on New Reproductive Technologies* (Ottawa: Minister of Government Services Canada, 1993) at 268.
30. Lynda Collins & Heather McLeod-Kilmurray, "Toxic Battery: A Tort for our Time?" (2008) 16 Tort Law Rev 131 at 131.
31. American College of Obstetricians and Gynecologists Committee on Health Care for Underserved Women & American Society for Reproductive Medicine Practice Committee, *supra* note 2 at 933.
32. Martinez-Arguelles et al, *supra* note 12; Fisher et al, *supra* note 13 at 1383; Hannas, *supra* note 15 at 206.

with exposures to certain BFRs.[33] With respect to phthalates, both human and animal studies have suggested that *in utero* exposures may result in reduced anogenital distance and cryptorchidism.[34]

Prenatal and preconception exposures are of particular interest in regards to BFRs and phthalates due to the suspected transgenerational effects of these chemicals. Both BFRs and phthalates are known endocrine-disrupting chemicals, that is, chemicals that interfere with normal hormone action in the body and consequently disrupt cell metabolism, "reproduction, development, or behaviour."[35] Perhaps the best-known example is that of diethylstilbestrol (or DES),[36] a long-prescribed synthetic estrogen that was used to prevent miscarriages in cases of high-risk pregnancy. Adverse health outcomes of exposure to DES emerged over time, particularly for female offspring exposed *in utero*, including a high occurrence of a rare form of vaginal cancer, reduced fertility, high rates of ectopic pregnancy, increased breast cancer, and early menopause, amongst others.[37] Early research on third generation DES offspring suggests adverse health outcomes for the children of those exposed *in utero* including "penile and testicular anomalies" such as high rates of cryptorchidism[38] in male offspring; delayed menarche in female offspring;[39] and skeletal and heart anomalies in both male and female offspring.[40] The case of DES illustrates that the implications of exposure

33. Meeker et al, *supra* note 9 at 3428.
34. Swan, *supra* note 17 at 179.
35. *Canadian Environmental Protection Act*, SC 1999, c 33, s 43 [*CEPA*].
36. See discussion below at note 199.
37. Sheela Sathyanarayana et al, "Environmental Exposures: How to Counsel Preconception and Prenatal Patients in the Clinical Setting" (2012) 207:6 American Journal of Obstetrics and Gynecolology 463 at 468; D Andrew Crain et al, "Female Reproductive Disorders: The Roles of Endocrine-Disrupting Compounds and Developmental Timing" (2008) 90:4 Fertility and Sterility 911 at 912; Nicolas Kalfa et al, "Prevalence of Hypospadias in Grandsons of Women Exposed to Diethylstilbestrol During Pregnancy: A Multigenerational National Cohort Study" (2011) 95:8 Fertility and Sterility 2574 at 2574.
38. Kalfa et al, *ibid*.
39. Linda Titus-Ernstoff et al, "Menstrual and Reproductive Characteristics of Women Whose Mothers Were Exposed *In Utero* to Diethylstilbestrol (DES)" (2006) 35:4 International Journal of Epidemiology 862.
40. Linda Titus-Ernstoff et al, "Birth Defects in the Sons and Daughters of

may extend far beyond the person immediately exposed, to their child *in utero* as well as to their grandchildren yet-to-be-conceived.

Research on other endocrine disrupters is increasingly demonstrating links between exposures and transgenerational reproductive outcomes recalling the effects of DES. For example, studies demonstrate that rats exposed to certain endocrine disrupters (namely the pesticide vinclozolin) known to cause altered fertility have passed anomalies "down to nearly every male in subsequent generations."[41] There is also reason to believe that such effects may be occurring in the case of BFRs, as animal studies have shown that exposing American male kestrels to certain BFRs has multigenerational effects on reproductive success.[42] With respect to phthalates, recent research has demonstrated that following exposure of mice *in utero*, "abnormal testicular function" persisted in subsequent generations, amongst other anomalies.[43]

While scholars are continuing to study the transgenerational effects

---

Women Who Were Exposed In Utero to Diethylstilbestrol (DES)" (2010) 33:2 International Journal of Andrology 377.

41. Matthew D Anway et al, "Epigenetic Transgenerational Actions of Endocrine Disruptors and Male Fertility" (2005) 308:5727 Science 1466; Jocelyn Kaiser, "Endocrine Disrupters Trigger Fertility Problems in Multiple G fenerations" (2005) 308:5727 Science 1391 at 1391.
42. Sarah C Marteinson et al, "Multi-generational Effects of Polybrominated Diphenylethers Exposure: Embryonic Exposure of Male American Kestrels (Falco Sparverius) to DE-71 Alters Reproductive Success and Behaviors" (2010) 29:8 Environmental Toxicology and Chemistry 1740; Kim J Fernie et al, "Changes in Reproductive Courtship Behaviors of Adult American Kestrels (*Falco sparverius*) Exposed to Environmentally Relevant Levels of the Polybrominated Diphenyl Ether Mixture, DE-71" (2008) 102:1 Toxicological Sciences 171; Kim J Fernie et al, "Environmentally Relevant Concentrations of DE-71 and HBCD Alter Eggshell Thickness and Reproductive Success of American Kestrels" (2009) 43:6 Environmental Science & Technology 2124.
43. Timothy J Doyle et al, "Transgenerational Effects of Di-(2-ethylhexyl) Phthalate on Testicular Germ Cell Associations and Spermatogonial Stem Cells in Mice" (2013) 88:5 Biology of Reproduction 1 at 10.

of phthalates and BFRs in both human[44] and animal[45] populations, the data is emergent and far from conclusive. Moreover, determining causation of any such effects is particularly difficult given the inconsistent nature of findings in both human and animal studies. Further, exposures to household chemicals typically occur in ways that are diffuse and cumulative, that is to say, emergent from innumerable sources and occurring over a long period of time. Simply put, it is difficult to establish the cause of chemical exposures when the science remains unclear and, furthermore, when we are always already exposed. Exposures may also predate conception and birth, insofar as one's exposure may affect the health of one's child not yet conceived, *in utero*, or the offspring of the child *in utero* (or the child yet-to-be-conceived).

Despite the known and suspected reproductive harms caused by exposure to household chemicals, litigation has been limited. In the Canadian context, there are very few cases that address reproductive harm in relation to exposures to household chemicals, in part because of the challenge of establishing a cause-and-effect relationship between chemical exposures and physiological harm. The criminal justice system offers few opportunities for litigation where harm is incurred due to exposures to household chemicals, and tort law (most often through claims of negligence) has been the site where relevant jurisprudence has been developed. However, toxic tort jurisprudence has not seen much success, either as individual or class action claims. Two successful cases of toxic exposures associated with individual harm are *Leibel v South Qu'Appelle (Rural Municipality)*[46] and *MacDonald v Sebastian*,[47] both cases of arsenic-

---

44. See for example Chanley M Small et al, "Reproductive Outcomes Among Women Exposed to a Brominated Flame Retardant In Utero" (2011) 66:4 Archives of Environmental & Occupational Health 201. See also Donatella Caserta et al, "The Influence of Endocrine Disruptors in a Selected Population of Infertile Women" (2013) 29:5 Gynecological Endocrinology 444.
45. See for example Rylee Phuong Do et al, "Non-monotonic Dose Effects of In Utero Exposure to Di(2-ethylhexyl)phthalate (DEHP) on Testicular and Serum Testosterone and Anogenital Distance in Male Mouse Fetuses" (2012) 34:4 Reproductive Toxicology 614.
46. [1944] 1 DLR 369 (Sask CA) [*Leibel*].
47. (1987), 81 NSR (2d) 189 (SC(TD)) [*MacDonald*].

tainted drinking water. In *Leibel*, the plaintiff was "poisoned with deeply injurious results" by drinking well water that had been contaminated with arsenic due to the negligent mixing of grasshopper poison-bait by the municipality taking place nearby.[48] The plaintiff suffered "much pain and nausea"; "lost … use of his hands and feet"; impaired "bodily functions"; and a deterioration of his general "condition of health."[49] In *MacDonald*, a landlord did not disclose the toxic levels of arsenic in the water supply of his tenants, despite prior knowledge.[50] The plaintiffs argued that the landlord had a duty to disclose the levels of arsenic, and Justice Burchell, finding that the actions of the defendant were therefore negligent, awarded damages. The causation in this case was very clear, with the plaintiffs experiencing flu-like symptoms, nausea, cramps, and diarrhoea (which are conclusively linked to arsenic poisoning) following consumption of the toxic water supply.[51]

Though reproductive harms were not explicitly at issue, both *Leibel* and *MacDonald* offer examples of the type of negligence claim regarding toxic exposures likely to succeed in Canadian jurisprudence. Negligence claims rely on four requirements for a successful claim, namely the establishment of duty on the part of the defendant, a breach of said duty, a causal connection between the breach of duty and the harm incurred, and real material damage, injury or harm.[52] Causation is integral here, and the near-immediacy of the harms and the direct relationship between arsenic poisoning and the plaintiffs' health effects made the tortious actions relatively easy to establish. Unlike *in utero* or preconception exposures to household chemicals, the plaintiffs were either children or adults harmed directly by exposures associated with the negligence of the defendant, causation was clear and direct, and the effects were nearly immediate.[53]

---

48. *Supra* note 46 at para 1.
49. *Ibid* at para 9.
50. *Supra* note 47 at paras 1, 3.
51. *Ibid* at para 6.
52. J A Jolowicz & T Ellis Lewis, *Winfield on Tort*, 8th ed (London: Sweet & Maxwell,1967) at 42 ff.
53. Other cases where injury in negligence is limited to a single or small-group exposed to toxics have generally been dismissed due to a lack of clarity in causation. See for example *Nichols (Guardian of) v Koch Oil*

Where intergenerational harm has been claimed, cases have been dismissed due to an inability to demonstrate clear causation. For example, in the case of *Martin (Litigation guardian of) v Glaze-Bloc Products Inc*,[54] an employee of Glaze-Bloc Products Inc. was exposed to trichloroethylene, a synthetic chemical most often used in industrial cleaning and in some household products.[55] This exposure was alleged to cause the neural tube anomaly experienced by the infant plaintiff, the employee's child.[56] However, while Glaze-Bloc Products was found to be at fault for the chemical exposures experienced by Tom Martin, Justice Morin found that there was not "valid evidence to support a cause and effect relationship between"[57] the chemical exposures and the "neural tube defects" of the child.[58] The significant challenge of establishing causation in cases of environmental exposures is particularly apparent in *Martin* as the possibility that factors and exposures other than that which occurred due to the actions of Glaze-Bloc Products Inc., as well as the limitations of existing research on the chemical in question, undermined the capacity of the plaintiffs to demonstrate concretely a direct relationship between cause and effect.[59] Given that tort law has conventionally required the plaintiff to demonstrate the likelihood that the defendant's actions or inactions resulted in the injuries in question, in many cases the multifactorial nature of reproductive harm, the diffuse nature of chemical exposures, and the lack of substantive scientific support to make direct evidentiary causal claims, make causation in cases

---

Col, [1998] BCJ No 1944 (QL) (SC); *Guimond Estate v Fiberglas Canada Inc* (1999), 221 NBR (2d) 118 (CA); *Canada v Grenier*, 2005 FCA 348; *Stucke v Richard McDonald & Associates Ltd,* 2006 ABQB 239; *MacIntyre v Cape Breton District Health Authority*, 2009 NSSC 202.

54. 2007 CarswellOnt 9457 (WL Can) (Sup Ct) [*Martin*].
55. Environment Canada Government of Canada, "Environment Canada - Pollution and Waste – Trichloroethylene" (13 August 2009), online: Environment Canada <http://www.ec.gc.ca/toxiques-toxics/Default.asp?lang=En&n=98E80CC6-1&xml=8E5CDE87-0226-4C47-BADC-161ED8A72654>.
56. *Martin, supra* note 54 at para 1.
57. *Ibid* at para 73.
58. *Ibid*.
59. *Ibid* at para 131.

like *Martin* nearly impossible to prove.[60]

Class action toxic torts in Canada have been limited by the difficulties of acquiring class certification, though the benefits of pursuing such claims in cases of exposures to environmental toxins are clear. In all claims of toxic torts, the cost, difficulty of identifying the time and place of long-term exposures, and limited scientific evidence substantiating cause and effect too often preclude success in cases where the tort of negligence is argued.[61] Class action suits offer the opportunity for plaintiffs to pool their resources in cases "where complexity and expert scientific evidence make conflicting findings likely and individual litigation virtually impossible to afford."[62] Further, for the courts, class actions allow for limited judicial resources to be more economically used in cases where the facts are essentially the same, in order to "improve access to justice by making economical the prosecution of claims that any one class member would find too costly to prosecute on his or her own," and enable claims substantial enough to require "actual and potential wrongdoers" to change their behaviours to reduce or eliminate the "harm they are causing, or might cause, to the public."[63]

However, following Patrick Hayes, there has been a too-narrow understanding of causation in class action claims regarding toxic exposures that has limited success in establishing class-action certification.[64] Hayes identifies the case of *Hollick v Toronto (City)* as establishing a restrictive framework in recognizing mass toxic torts that set the stage for future refusals to grant certification in environmental torts claims. In *Hollick*, the plaintiff claimed that the "noise and physical pollution"[65] from a nearby landfill were excessive, making a class action nuisance claim on behalf

60. Jocelyn Kaiser, "Endocrine Disrupters Trigger Fertility Problems in Multiple Generations" (2005) 308:5727 Science 1391 at 1391.
61. Patrick Hayes, "Exploring the Viability of Class Actions Arising from Environmental Toxic Torts: Overcoming Barriers to Certification" (2009) 19:3 J Envtl L & Prac 189 at 190.
62. Heather McCleod-Kilmurray, "*Hollick* and Environmental Class Actions: Putting the Substance into Class Action Procedure" (2002) 34 Ottawa L Rev 263 at 283.
63. *Hollick v Toronto (City)*, 2001 SCC 68 at para 15 [*Hollick*].
64. *Supra* note 61.
65. *Supra* note 63 at para 2.

of 30,000 residents living near the landfill. The motions judge certified a class action, but the class certification was overturned in Divisional Court "on the grounds that the appellant had not stated an identifiable class and had not satisfied the commonality requirement."[66] Essentially, each of the individual plaintiffs would have differently experienced the nuisance dependant on various factors, including their proximity to the landfill.[67] The Supreme Court of Canada dismissed the appeal. The limitations placed on class certification were also made clear in *Ring v Canada*[68] in which it was alleged that "the spraying of herbicides" near the Gagetown military base from 1956 onward "materially contributed to or materially contributed to the risk of causing, lymphoma"[69] for the plaintiffs. Though the trial judge found that the certification for a class action had been met, on appeal Justice Cameron found for the court that the class was too broadly conceived, as it included not only those who were exposed to toxic chemicals at Gagetown after 1956, but also those "who claim to"[70] have been exposed. For Cameron JA, no acceptable limits to the class of those claiming exposure were applied, and therefore class certification could not be accorded.

In contrast, in *Smith v Inco Limited*,[71] certification for a toxic torts case was granted. Initially, certification was denied by Justice Nordheimer at the Ontario Superior Court of Justice as the geographic boundaries of contamination were "arbitrary" (*i.e.* including people without claims and excluding people with relevant claims).[72] On appeal, class certification was granted, but only once the class was narrowed from the broader class of those who experienced physiological harms alleged to be caused by exposures to certain "toxic and carcinogenic chemicals"[73] to extend only

66. *Ibid* at para 8.
67. *Ibid* at para 32.
68. 2010 NLCA 20.
69. *Ibid* at para 1.
70. *Ibid* at para 71.
71. 2011 ONCA 628 [*Smith*].
72. *Pearson v Inco Ltd* (2002), 33 CPC (5th) 264 at para 101 (Ont Sup Ct).
73. There has been greater success in toxic tort class action suits under *Droite Civile* in Quebec. See *St Lawrence Cement v Barrette*, 2008 SCC 64; and *Comité d'environnement de La Baie inc c Société d'électrolyse et de chimie Alcan ltée*, [1990] RJQ 655 (Qc CA).

to those whose property values were adversely affected. The claim on the merits failed at the Court of Appeal.[74]

The poor record of litigation vis-à-vis exposures to synthetic chemicals in Canada has not precluded scholars from theorizing how such tort actions might be undertaken. Though harms caused by exposures to synthetic chemicals have most often been articulated as negligence claims, Lynda Collins and Heather McLeod-Kilmurray imagine how Canadians, exposed to a wide variety of chemicals without their consent, might be able to make a claim of "toxic battery." "Toxic battery," they argue, occurs in "any battery in which the alleged intentional contact takes the form of exposure to a toxic substance released by the defendant."[75] If battery is "the intentional application of harmful or offensive contact" with the plaintiff's person,[76] and intent need not be specific or desired, but merely relies on any consequences that result from the defendant's conduct (following the doctrine of constructive intent),[77] it follows that those responsible for exposing plaintiffs to synthetic chemicals might be understood as committing battery.

Collins and McLeod-Kilmurray identify the potential utility of battery in toxic torts in part as a means to circumvent the challenge posed by establishing causation in claims of negligence. As in *Martin*, due to the limitations of existing scientific research on the effects of environmental exposures to synthetic chemicals, and further, because of the often diffuse nature of exposure, causation has been too difficult to establish, rendering negligence claims a losing proposition. As battery relies on the idea that there is "harmful or offensive contact"[78] experienced by the plaintiff, in which there is some sort of incursion on their person that violates their dignity regardless of the harm, "toxic battery" engenders an understanding that the harm is the exposure in and of itself, rather than any specific physiological effects. However, as these authors identify, given the widespread nature of chemical exposures, the claim that individuals are subject to battery when involuntarily exposed

74. *Smith, supra* note 71.
75. Collins & McLeod-Kilmurray, *supra* note 30 at 132.
76. *Ibid*.
77. *Ibid*.
78. *Ibid* at 143.

to synthetic chemicals could ostensibly be applied to nearly everyone in the industrial world, if not elsewhere. The overly broad scope of toxic battery, then, suggests that it is unlikely to be successful as a strategy to address cases of environmental exposures to synthetic chemicals, though it is particularly useful in its capacity to sidestep the issue of causation that hinders relevant negligence claims.

Rather than theorize toxic torts as battery, Dayna Scott suggests that the preoccupation of tort law with proof of physical damages experienced by individuals impedes justice. Scott interrogates the relationship between tort law and the body, identifying that the association between physical damage experienced by individuals is too limited an understanding of harm to provide a remedy in the case of toxic torts. Scott argues that if tort law is a means to address the harms incurred by one individual (or group) at the hands of another, tort law is insufficient to engage with harms caused by toxic chemicals as it is "blind to the public dimensions of the problem and the way that state law, through the regulatory design, shapes the behaviour of key actors, notably in this case, polluters."[79] Addressing the adverse effects of household chemicals as a matter of tort law inherently frames exposure as a private matter when rightly, for Scott, it is a matter of public health, public interest, and state responsibility.

Nevertheless, toxic torts continue to be used to address matters of chemical exposure with limited success. The challenges of proving causation of adverse health effects are often insurmountable for plaintiffs, particularly in cases that are not class-action matters and when the harms are claimed as a matter of negligence. Causation is even more difficult to prove in toxic torts cases when, as in *Martin*, reproductive harms (particularly those that occur prior to conception) are alleged.[80] However, as research on phthalates and BFRs increasingly demonstrates there are links between *in utero* exposures and reproductive harm, exposures to household chemicals might be thought of both as a toxic tort and as a matter of reproductive harm. As toxic torts claims have largely been unsuccessful in the Canadian context, partly due to the problematic

79. Dayna Nadine Scott, "'Gender-benders': Sex and Law in the Constitution of Polluted Bodies" (2009) 17:3 Fem Legal Stud 241 at 260.
80. *Supra* note 54.

nature of establishing causation, cases in which reproductive harms are associated with household chemicals might instead look to reproductive torts as a line of argumentation. Reproductive torts (*i.e.* prenatal injury claims, birth torts, and preconception claims) may offer a point of entry for litigation addressing reproductive harms caused by exposures to household chemicals.

III. Reproductive Torts

A. Prenatal Injury Claims

Prenatal injury claims occur when the tortious act harms or is alleged to have harmed a child *in utero*. These cases can be roughly categorized in two different ways. First, prenatal injury claims may be made when the harm incurred is alleged to be caused by a breach of duty on the part of the defendant. In these cases, the driver of a motor vehicle (as in early cases) or health services workers (*i.e.* physicians, nurses) breach a duty of care resulting in the alleged harms to the fetus. The second type of prenatal injury claim is that in which a pregnant woman is liable for the tortious action. In these particularly controversial cases, a woman in some way harms herself (accidentally or otherwise), and alleged harm to her fetus is the result of her action. Both types of claims are discussed below to demonstrate the theorization of fetal harm, liability, and causation in prenatal injury negligence cases as a means to identify the utility of these approaches for potential litigation regarding reproductive harms caused by *in utero* exposures to household chemicals.

In Canada, the earliest precedents relating to reproductive harm occurred in the case of accidents involving motor vehicles. Though decided under Quebec's civil law, the 1933 Supreme Court of Canada decision in *Montreal Tramways Co v Léveillé* [81] featured a common law analysis, and it has served as a precedent in later common law decisions. In this case, a pregnant woman was "descending from a tram car" when, "by reason of the negligence" of the employee of the appellant (the "motorman"), she fell and was injured; her child was born with "club

81. [1933] SCR 456 [*Montreal Tramways*].

feet."[82] At issue was whether the available evidence allowed the jury to reasonably find that the fall caused the child's club feet, and whether the child, while *in utero*, was covered by Article 1053 of the civil code, which read, "[e]very person capable of discerning right from wrong is responsible for the damage caused by his fault to another, whether by positive act, imprudence, neglect or want of skill."[83]

The majority judgment, written by Justice Lamont, surveys UK, Irish, and American precedent on the legal status of the unborn child, finding that the common law recognizes the separate existence of the unborn child for inheritance and criminal law purposes, provided that the child is subsequently born alive. The judgment goes on to state that existing common law authority does not apply this rule in personal injury cases, but that the civil law employs a legal fiction wherein it treats a conceived but unborn child as having been born at a particular time for his or her benefit, if subsequently born alive. With respect to causation, Lamont J held that the medical expert testimony arguing that the cause of club feet was unknown did not negate the testimony of the experts who believed it was very probable that the accident caused the child's condition, and consequently, the jury could reasonably have found a causal relationship.[84] Beyond addressing and accepting the vague probability of causation, the result of the majority decision was a precedent-setting judgment that effectively determined the retrospective application of negligence *in utero*, as long as the child was born alive.

The logic of *Montreal Tramways* would be put to use in the Ontario case of *Duval et al v Seguin et al*,[85] the Canadian common law precedent-setting case on tort recovery for injuries sustained while *in utero*. The facts concerned a motor vehicle accident involving several individuals, one of whom was thirty-one weeks pregnant at the time, and whose child was born prematurely about three weeks later.[86] The High Court described that the child was "permanently handicapped both physically and

82. *Ibid* at 458.
83. *Ibid* at 459.
84. *Montreal Tramways*, *ibid* at 473.
85. (1973) 1 OR (2d) 482 (CA) [*Duval* 1973], aff'g [1972] 2 OR 686 (H Ct J) [*Duval* 1972].
86. *Duval* 1972, *ibid* at para 32.

mentally"[87] as a result of "brain injuries suffered in the accident."[88] The judgments of the High Court and the Court of Appeal, both of which allowed recovery by the infant plaintiff, referred to American,[89] Irish,[90] and Australian[91] authorities promoting recovery for injuries sustained while *en ventre sa mère*. The High Court judgment, echoing *Montreal Tramways*, notes:

> In my opinion it is not necessary in the present case to consider whether the unborn child was a person in law or at which stage she became a person. For negligence to be a tort there must be damages. While it was the foetus or child en ventre sa mère who was injured, the damages sued for are the damages suffered by the plaintiff Ann since birth and which she will continue to suffer as a result of that injury.[92]

The High Court dismissed the argument that the difficulty in proving causation in prenatal injury cases justified barring such claims, suggesting that though older cases were invested in the difficulty of establishing causation, "scientific advances"[93] suggest that the relationship between certain acts and prenatal injuries are stronger than ever. The High Court also addressed the issue of causation by referring to the then-landmark case of *Donoghue v Stevenson*,[94] writing that "[u]nder the doctrine of M'Alister (or Donoghue) v. Stevenson … an unborn child is within the foreseeable risk incurred by a negligent motorist. When the unborn child becomes a living person and suffers damages as a result of prenatal injuries caused by the fault of the negligent motorist the cause of action is

87. *Ibid* at para 37.
88. *Ibid* at paras 35-36.
89. *Ibid* at paras 49-51.
90. *Duval* 1972, *ibid* at paras 56-57.
91. *Duval* 1972, *ibid* at paras 63-64; *Duval* 1973, *supra* note 85 at para 9, citing *Watt v Rama*, [1972] VR 353 [*Watt*]. *Watt* established precedent regarding the capacity to sue for injuries incurred prior to birth, namely *en ventre sa mère*. The case involved a motor vehicle accident in which it was held that a duty of care was owed to a child born alive if injuries were sustained *in utero*. See also Fiona Anne Kumari Campbell, *The Great Divide : Ableism and Technologies of Disability Production* (PhD Thesis, Queensland University of Technology, 2003) [unpublished] at 122-23.
92. *Duval* 1972, *ibid* at para 67.
93. *Ibid* at para 70.
94. [1932] UKHL 100.

completed."[95] The court awarded $31,000 to the infant plaintiff and this award was upheld by the Court of Appeal.[96]

In *Montreal Tramways*, the majority decision did not hinge on causation as conflicting expert witnesses suggested that the child's club feet may or may not have been the result of the "motorman's" negligence. Further, in *Duval* the High Court was careful to note that as causation is difficult to establish in cases of prenatal harms, in cases where there is a strong correlation between a negligent act and injuries sustained to a child *en ventre sa mère*, "plaintiffs should not be denied relief in proper cases because of possible difficulties of proof."[97] In short, though causation is a critical element of negligence claims, at least in the case of prenatal injuries related to motor vehicles causation is inherently tenuous and a failure to establish clear causation has not always prevented successful claims.[98]

While accidents involving motor vehicles are one of the earliest scenarios in which prenatal injury claims were made in Canada, prenatal personal injury is also often litigated in scenarios involving labour and delivery. Numerous court decisions feature plaintiffs who allege that negligent care they and their mothers received in the hours, minutes or seconds prior to their birth resulted in severe injury.[99] In light of the

---

95. *Duval* 1972, *supra* note 85 at para 71.
96. *Ibid* at para 72; *Duval* 1973, *supra* note 85 at para 11.
97. *Duval* 1972, *ibid* at para 70.
98. In addition to *Montreal Tramways* and *Duval*, the case of *LaForge v McGee et al* involves a fact scenario in which a pregnant woman is involved in a motor vehicle accident and her child, subsequently born alive, is born with disabilities. In this case, causation was relatively easily established through medical testimony and a very direct temporal relationship between the motor vehicle accident and pregnant woman's symptoms (associated with the harm incurred by the infant plaintiff). In this case, causation was seen to be direct and relatively simple for Justice Wood. See *Laforge v McGee,* [1988] BCJ No 1584 (QL) (SC).
99. See *e.g. Preston v Chow*, 2007 MBQB 318 [*Preston*]; *Crawford (Litigation guardian of) v Penney* (2004), 26 CCLT (3d) 246 (CA) [*Crawford*]; *Tsur-Shofer v Grynspan* (2004). 131 ACWS (3d) 545 (Sup Ct); *Fullerton (Guardian ad litem of) v Delair*, 2005 BCSC 204; *Brito (Guardian ad litem of) v Woolley*, 2003 BCCA 397 (claim unsuccessful); *Meyer v Gordon* (1981), 17 CCLT 1 (SC); *Bauer (Litigation guardian of) v Seager*, 2000 MBQB 113 [*Bauer*]; *Anderson v Salvation Army Maternity*

consequences of prenatal injury, which may include the need for constant care and a lifetime's worth of lost earnings, damages in these types of cases often run into the millions of dollars.[100] Care providers that have been found liable for providing negligent prenatal care include obstetricians[101] and other attending physicians;[102] medical residents;[103] nurses;[104] and midwives.[105] Hospitals have also been found liable for negligence.[106]

These cases rely on the premise that care providers owe a duty of care to both the pregnant woman and unborn child during pregnancy, as well as during labour and delivery.[107] Further, there must be some causal link between the actions of the care providers and the harm incurred by the plaintiff. For example, the claim might be made that inadequate care in response to a high-risk pregnancy led to oxygen deprivation during labour causing the child to be born with "extensive and permanent brain injuries."[108] In addition, plaintiffs might claim that the failure to perform a caesarean section or refer to a specialist when raised led to a child being

---

Hospital (1989), 93 NSR (2d) 141 (SC(TD)) (cerebral palsy and mental retardation allegedly caused by negligently performed vaginal breech delivery – claim failed for failure to establish negligence and causation).

100. *Lusignan (Litigation guardian of) v Concordia Hospital* (1997), 117 Man R (2d) 241 (QB) at para 7 (negligent prenatal/delivery care led infant plaintiff to be "severely mentally handicapped" and have "a mild degree of cerebral palsy" – awarded over $2.2 million); *Carere v Cressman*, 12 CCLT (3d) 217 (Sup Ct) [*Carere*] (midwife's negligent prenatal care held to have caused the infant plaintiff's cerebral palsy – over $2.3 million in damages awarded); *Ediger (Guardian ad litem of) v Johnston*, 2009 BCSC 386 (negligently performed delivery causes quadriplegia and cerebral palsy – over $3 million in damages awarded); *Crawford*, *supra* note 99 (negligent delivery causes permanent brain injuries – infant awarded $10 million).
101. *Crawford*, *supra* note 99.
102. *Steinebach (Litigation guardian of) v Fraser Health Authority*, 2011 BCCA 302 [*Steinebach*]; *Crawford*, *ibid*.
103. See *Milne v St Joseph's Health Centre* (2009), 69 CCLT (3d) 208 (Sup Ct) [*Milne*]; *Bauer*, *supra* note 99.
104. *Milne*, *ibid*; *Steinebach*, *supra* note 102; *Guerineau (Guardian ad litem of) v Seger*, 2001 BCSC 291 [*Guerineau*].
105. *Carere, supra* note 100.
106. *Guerineau*, *supra* note 104; *Bauer*, *supra* note 99.
107. See *Milne*, *supra* note 103 at paras 63-64; *Crawford*, *supra* note 99.
108. *Crawford*, *ibid* at para 1.

affected by the herpes virus.[109]

Taken together, the motor vehicle and prenatal care cases discussed to this point illustrate the emergence and entrenchment of the right of the child born alive to sue for damages sustained before birth. Further, as a group these cases, and particularly those cases of fetal harm involving motor vehicle accidents, suggest that causation need not always be direct and clear. Causation, as in *Preston* and *Crawford* cited above, may be inferred from a breach of duty marked by inaction, or as in *Montreal Tramways* and *Duval*, may be based on perceived probability of harm following an injurious event (motor vehicle collision). The challenge of determining causation with certainty in cases of prenatal harm need not stand in the way of a remedy.

In *Duval*, Justice Fraser outlined the challenges of establishing causation in cases of prenatal harm, stating the importance of not dismissing just claims in the absence of the science necessary to prove causation. He wrote for the court that:

> Some of the older cases suggest that there should be no recovery by a person who has suffered prenatal injuries because of the difficulties of proof and of the opening it gives for perjury and speculation. Since those cases were decided there have been many scientific advances and it would seem that chances of establishing whether or not there are causal relationships between the act alleged to be negligent and the damage alleged to have been suffered as a consequence are better now than formerly. In any event the Courts now have to consider many similar problems and *plaintiffs should not be denied relief in proper cases because of possible difficulties of proof*.[110]

Prenatal claims may, then, offer some hope for cases where prenatal exposures to household chemicals are at issue. There is a clear history of negligence claims when fetal harm is linked to a breach of a duty of care including, at times, where a direct line between cause and effect is not apparent. This stands in contrast to claims of negligence related to toxic chemicals which, in the Canadian context, may be dismissed when causation is either unclear or indirect. Whereas in cases like *MacDonald* and *Leibel* exposure to arsenic was clear and specifically related to the symptoms experienced by the plaintiffs, in cases like *Martin* the

---

109. *Preston*, *supra* note 99 at para 193.
110. *Duval* 1972*, supra* note 85 at para 70 [emphasis added].

relationship between chemical exposures and the adverse health effects were too vague for the claim of negligence to succeed.

In the case of either BFRs or phthalates, there are no clear guidelines regarding acceptable levels of exposure and bioaccumulation, and, as in *Martin*, without such guidelines from scientific or medical communities it might be difficult to establish a relationship between adverse health outcomes and chemical exposures for purposes of litigation. The multifactorial nature of the symptoms that may be associated with exposures to household chemicals, such as cryptorchidism and low birth rate, may also raise doubt about the role of chemical exposures in reproductive health issues that may be experienced by those exposed *in utero*. The issue of establishing causation is further exacerbated by the challenge of finding an identifiable defendant in such cases, as contemporary Western households typically include a wide variety of products that contain either BFRs[111] or phthalates.[112] Furthermore, due to the ongoing nature of these exposures, there is little possibility of identifying the particular product or manufacturer to which specific adverse health effects can be attributed. Establishing direct and clear causation between exposure to household chemicals and adverse health effects is unlikely due to the diffuse and pervasive nature of exposures, compounded by the still-unclear science on the effects of these chemicals, and the challenges of finding an identifiable plaintiff. If tort action requires an identifiable defendant, quantifiable damage, and a causal relationship between the defendant and the harm incurred,[113] in the theoretical cases involving exposures to household chemicals, two out of the three criteria (*i.e.* an identifiable defendant, and a causal connection), are not clearly present.

B. Prenatal Injury Claims Against Pregnant Women

The second category of prenatal injury claims is that which occurs when a mother is the tortfeasor and is believed to have caused harms sustained by

111. See text accompanying note 7.
112. See text accompanying note 2.
113. Albert C Lin, "Beyond Tort: Compensating Victims of Environmental Toxic Injury" (2005) 78:6 S Cal L Rev 1439 at 1445.

a fetus. These cases are limited in the Canadian context as the Canadian judiciary has largely been resistant to interfere with women's reproductive autonomy, particularly following *R v Morgentaler*.[114] Women are not typically held liable for risks or harm enacted on a fetus, suggesting that the governance of pregnancy is a matter of reproductive autonomy, and should be addressed by public policy rather than judicial intervention.

The case of *Winnipeg Child & Family Services (Northwest Area) v DFG*[115] was critical to establishing the position of non-intervention in pregnancy taken by the courts in Canada,[116] though it considers the actions of an organization acting on behalf of the interests of a fetus against a pregnant woman (rather than the *in utero* exposure to harms experienced by a child born alive).[117] This case involved the attempt of Winnipeg Child and Family Services to obtain a court order detaining a pregnant Aboriginal woman who was addicted to sniffing glue, in order to protect her unborn child from neurological damage.[118] The issues before

114. [1988] 1 SCR 30.
115. [1997] 3 SCR 925 [*DFG*].
116. Roxanne Mykitiuk & Dayna Nadine Scott, "Risky Pregnancy: Liability, Blame, and Insurance in the Governance of Prenatal Harm" (2010) 43:2 UBC L Rev 311 at 331.
117. See *e.g.* Melanie Randall, "Pregnant Embodiment and Women's Autonomy Rights in Law: An Analysis of the Language and Politics of *Winnipeg Child and Family Services v. D.F.G.*" (1999) 62:2 Sask L Rev 515; Sandra Rodgers, "*Winnipeg Child and Family Services v. D.F.G.*: Juridical Interference with Pregnant Women in the Alleged Interest of the Fetus" (1998) 36:3 Alta L Rev 711; FC DeCoste, "*Winnipeg Child and Family Services (Northwest Area) v. D.F.G.*: The Impossibility of Fetal Rights and the Obligations of Judicial Governance" (1998) 36:3 Alta L Rev 725; Laura Shanner, "Pregnancy Intervention and Models of Maternal-Fetal Relationship: Philosophical Reflections on the *Winnipeg C.F.S.* Dissent" (1998) 36:3 Alta L Rev 751; Bruce P Elman & Jill Mason, "The Failure of Dialogue: *Winnipeg Child and Family Services (Northwest Area) v. G. (D.F.)*" (1998) 36:3 Alta L Rev 768; Timothy Caulfield & Erin Nelson, "*Winnipeg Child and Family Services (Northwest Area) v DFG*: A Commentary on the Law, Reproductive Autonomy and the Allure of Technopolicy" (1998) 36:3 Alta L Rev 799; Emilia Ordolis, "Maternal Substance Abuse and the Limits of Law: A Relational Challenge" (2008) 46:1 Alta L Rev 119; Lorna Weir, *Pregnancy, Risk and Biopolitics: On the Threshold of the Living Subject* (London, UK: Routledge, 2006) at 164; Mykitiuk & Scott, *ibid* at 332.
118. *DFG*, *supra* note 115 at para 1.

the Supreme Court of Canada were whether such an order could be permitted through tort law or through the power of the court to protect children ("*parens patriae* jurisdiction").[119] The majority judgment of Chief Justice McLachlin (as she then was) held that making the major changes to tort law required to support the order was best left to the legislature.[120] Granting legal rights to a fetus could allow the fetus to bring a variety of causes of action, including seeking an injunction preventing a pregnant woman from having an abortion.[121] The Court would also be required to conceive of the unborn child and its mother "as separate juristic persons in a mutually separable and antagonistic relation," a position that contrasts both the physical reality and the traditional legal characterization of the relationship.[122] In addition, pregnant women's lifestyle choices would be open to outside scrutiny[123] and legal action[124] which could in turn lead to a "conflict between the pregnant woman as an autonomous decision-maker and her fetus."[125] The Court was also concerned that restricting women's behaviours in pregnancy might lead to women engaging in risky activities to avoid medical care.[126] The judgment went on to hold that an

119. *Ibid* at para 9.
120. *Ibid* at para 20.
121. *Ibid* at para 24. This had been unsuccessfully attempted in an earlier case that went before the Supreme Court of Canada. See *Tremblay v Daigle*, [1989] 2 SCR 530. As the formalistic analysis of whether the fetus is a person at law undertaken in that case is subsumed by the broader analysis in *DFG*, we do not analyze that case in detail.
122. *DFG*, *ibid* at para 29.
123. *Ibid* at para 42.
124. *Ibid* at paras 30-45.
125. *Ibid* at para 37.
126. The dissenting judgment of Justice Major (joined by Justice Sopinka), supported itself with information submitted by various interveners before the Court "on the prevalence of mental and physical disabilities in children as a result of substance abuse by their mothers while pregnant," including "evidence focused on the 'crisis situation' in many aboriginal communities." In concluding that Canadian law does support a remedy for the claim, Major J's points include that the born alive rule originated as an evidentiary presumption that responded to limited medical knowledge of whether a child *in utero* was in fact alive at the time it allegedly suffered injury. As such, present medical technologies such as ultrasound and fetal heart monitors render the rule "outdated and indefensible." With respect to concerns over women's autonomy,

injunction cannot support an order for detention,[127] and that the power of *parens patriae* does not apply to the unborn.[128]

Two years later, the Court would apply the broad framework established in *DFG* – that pregnant women cannot be found liable for behaviours that might harm their fetus – to a very different fact scenario, with a slightly different focus. The controversial[129] case of *Dobson (Litigation Guardian of) v Dobson*[130] raised the question of whether a child could sue his or her mother for injuries sustained while *in utero* in a motor vehicle accident as a result of her negligent driving. The infant plaintiff Ryan Dobson was delivered prematurely by caesarean section following the accident and was subsequently found to have "permanent mental and physical impairment, including cerebral palsy."[131] The majority judgment written by Justice Cory noted that the pregnant woman, in addition to fulfilling an important role benefiting society as a whole,[132] "is also an individual whose bodily integrity, privacy and autonomy rights must be protected."[133] From this perspective, a pregnant woman is fundamentally different than other defendants insofar as imposing a legal duty to protect

---

the dissent states that the test for justifying confinement is set at a "very high threshold." That is, "[i]t is only in those extreme cases, where the conduct of the mother has a reasonable probability of causing serious and irreparable harm to the unborn child, and no other reasonable means of treatment exists, that a court should assume jurisdiction to intervene." *Ibid* at paras 88, 109, 124, 136.

127. *Ibid* at para 46.
128. *Ibid* at paras 49-57.
129. See *e.g.* Ian R Kerr, "Pregnant Women and the 'Born Alive' Rule in Canada" (2000) 8:1 Tort Law Review 713; Diana Ginn, "A Balancing that is Beyond the Scope of the Common Law: A Discussion of the Issues Raised by *Dobson (Litigation guardian of) v. Dobson*" (2001) 27:1 Queen's LJ 51; Kristin Ali, "Defining the Standard of Prenatal Care: An Analysis of Judicial and Legislative Responses" (2007) 1:1 McGill JL & Health 69; Diana Ginn, "The Supreme Court of Canada and What It Means to Be 'Of Woman Born'" in Andrea O'Reilly, ed, *From Motherhood to Mothering: The Legacy of Adrienne Rich's Of Woman Born* (Albany: State University of New York Press, 2004) 27; Weir, *supra* note 117 at 88; Mykitiuk & Scott, *supra* note 116 at 333.
130. [1999] 2 SCR 753 [*Dobson*].
131. *Ibid* at para 2.
132. *Ibid* at paras 24, 45.
133. *Ibid* at para 24.

the life of a fetus could "render the most mundane decision taken in the course of her daily life as a pregnant woman subject to the scrutiny of the courts,"[134] infringing substantially on women's autonomy and privacy.[135] These effects would also result from attempting to articulate the standard of conduct of a "reasonable pregnant woman."[136] Cory J concluded that public policy concerns indicated that a duty could not be imposed on pregnant women toward their fetus or subsequently born child, and remarked that provincial legislatures could create legislation to allow for insurance provisions to benefit "both the injured child and his or her family, without unduly restricting the privacy and autonomy rights of women."[137]

The outcome of *Dobson* was a reiteration and expansion of the principle established in *DFG*, namely that attempts to restrict women's behaviours in pregnancy through torts (prior to or once the child is born alive) are untenable, given the infringement on women's reproductive autonomy and the problematic nature of differentiating acceptable and "reasonable" activities from those which might be restricted.[138] *Dobson* makes clear that women's bodily integrity and reproductive autonomy covers all actions that they may take throughout their pregnancy. Other cases have applied this principle to tort claims against mothers for harms incurred *in utero*[139] and similar logic has been used in criminal cases.[140]

---

134. *Ibid* at para 27.
135. *Ibid* at para 44.
136. *Ibid* at paras 52-53.
137. *Ibid* at para 81. Partly as a result of the decision, the province of Alberta enacted legislation to grant the precise cause of action denied in the case. The *Maternal Tort Liability Act*, SA 2005, c M-7.5, reads, in part, "a mother may be liable to her child for injuries suffered by her child on or after birth that were caused by the mother's use or operation of an automobile during her pregnancy," and limits liability to "the amount of insurance money payable under contracts of automobile insurance indemnifying the mother that the child can recover as a creditor under s 635 of the Insurance Act." See ss 1-4. See also Mykitiuk & Scott, *supra* note 116 at 339.
138. *Ibid* at para 52-53.
139. For the application of the principle in *Dobson*, see for example *Hall (Litigaiton guardian of) v Kellar*, 23 CCLT (3d) 40 (Sup Ct).
140. See *e.g. R v Drummond*, [1997] OJ No 6390 (QL) (Ct J (Prov Div)), which involved a charge of attempted murder against a pregnant woman

Furthermore, *Dobson* elucidates that while pregnant women are not liable for injuries sustained by a fetus during pregnancy, this does not preclude the actions of other defendants. Parties other than the pregnant woman are liable for damages incurred by the fetus when the child is born alive, even if the injury is sustained prior to birth.

Overall, the claims of prenatal reproductive injury made in the aforementioned cases demonstrate that there has been hesitation on the part of Canadian courts to intervene in cases where claims of prenatal harm are made by children against their mothers, due to policy considerations related to women's reproductive autonomy.[141] Rather than identify fetal harm as separate from the maternal body, this approach supports the understanding that the fetus exists within the woman's body and that, consequently, their relationship cannot be adversarial[142] as the interests of the fetus and the pregnant woman are inherently inseparable. The judgements in *DFG* and *Dobson* recognized that imposing a duty for women to protect a fetus through the regulation of her behaviours would mean imposing a duty on her to treat her body, herself, in ways determined by the Court.

The maternal exception in cases of prenatal harm recognized in Canadian jurisprudence has particular implications for the case of exposures to household chemicals. One of the risks of engaging in litigation addressing toxic exposures is that the responsibility for mitigating those exposures increasingly falls to women managing their households, purchasing household supplies, and engaging in precautionary consumption. The possibility of reproductive torts which can address exposures may implicate manufacturers of these chemicals, or their distributors, but they may also occur on an individualized basis, in

---

for inserting a pellet gun into her vagina and shooting her fetus. It was apparent that charging women for homicide of the fetus or subsequently born alive child raises the spectre of the slippery slope of prosecuting women for substance abuse or a range of lawful behaviour. This would invite the same type of scrutiny of the conduct of pregnant women and interference with autonomy to which the Supreme Court of Canada in *DFG* and *Dobson* referred in justifying the refusal to recognize the tort duties in question.

141. *BR v LR*, 2004 ABQB 93 at para 35.
142. See *Dobson*, *supra* note 130 at para 72.

which women responsible for exposing their families to toxic household chemicals may be liable for the effects on their future children born alive. If women, and especially pregnant women, are counselled to avoid exposures by making smart decisions about what to eat, what to buy, and what to do, there is a potential duty of care that may be imparted onto women as they are increasingly expected to protect their families from the harms associated with chemical exposures. Women who fail to avoid cosmetics laden with phthalates, or who buy a used sofa leaching flame retardants, may one day be seen as negligent by failing to avoid known toxic substances and thereby exposing their child *en ventre sa mère*.

Dobson and *DFG*, and the maternal exception in prenatal tort liability that they collectively establish, undermine the potential for such claims. These cases offer important examples of the way that Canadian government institutions, namely the judiciary and legislature, have worked to advance women's reproductive autonomy in pregnancy, particularly since the 1990s.[143] Claims made against pregnant women or mothers for harms that occurred *in utero* are unlikely to garner success following *Dobson*, and offer some protection for women who do not or cannot engage in the laborious and expensive task of avoiding ubiquitous household chemicals.

C. The Birth of a Child as a Legal Harm ("Birth Torts")

The tortious conduct in all of the above decisions was alleged to have caused physical harm[144] to the fetus. Even though the fetus is not a legal person, once it is born alive tort law imagines how monetary compensation

143. While the Supreme Court of Canada has advanced women's reproductive autonomy in some cases, for some women, in many cases, "[w]hite supremacy, colonialism, oppression on the basis of class, (dis)ability, religion, language, sexual identity, and family status all combine with restrictions tied to both biological and social reproduction to circumscribe the lives of women and preclude their equality," particularly in the judgments of the Court. Sanda Rogers, "Women's Reproductive Equality and the Supreme Court of Canada" in Jocelyn Downie & Elaine Gibson, eds, *Health Law At the Supreme Court of Canada* (Toronto: Irwin Law, 2007) 189 at 191. See also Elizabeth Comack, ed, *Locating Law: Race/Class/Gender/Sexuality Connections*, 2d ed (Halifax, NS: Irwin Law, 2006).

144. Or a risk of physical injury, in the case of *DFG.*

can put the plaintiff back into his or her "original position" before he or she was injured. The "birth torts,"[145] a major class of reproductive tort, are distinguishable from the preceding prenatal injury cases in that rather than featuring negligence that physically changes the child, it causes the mother of the child to lose the opportunity to avoid or terminate an unwanted pregnancy. In other words, the birth of the child is itself the legal damage. The counterfactual original position is having avoided the unwanted pregnancy or birth. This notion of injury, and courts' departures from it, poses conceptual and legal difficulties and has problematic social implications. Centrally, the notion of injury in the birth torts involves evaluating the legal significance of the unwanted birth of a "healthy" or "normal" child versus the unwanted birth of a child with a disability.

Birth tort cases can be broken into various broad categories which, though imperfect,[146] permit a view of the different themes that emerge

---

145. See Melinda Jones, "Valuing All Lives – Even 'Wrongful' Ones" in Marcia H Rioux, Lee Ann Basser & Melinda Jones, eds, *Critical Perspectives on Human Rights and Disability Law* (Boston: Martinus Nijhoff, 2011) 87 at 87 [Jones, "Valuing All Lives"].

146. Theorizing cases where the tortious act is the birth of a child has long been the subject of debate, particularly regarding the idea that life itself can be understood as a harm. The rejection of these categories has largely been premised on the assumption that birth or life can be conceptualized as a legal harm, and challenge the morality and capacity of the judiciary to assess whether a life is worth living. The categories of "wrongful pregnancy" (sometimes called "wrongful conception") "wrongful birth" and "wrongful life" are used here for purposes of clarity, without intent to normalize or judge this categorization. See, for example, David Archard, "Wrongful Life" (2004) 79:309 Philosophy 403; Kelly E Rhinehart, "Debate over Wrongful Birth and Wrongful Life" (2002) 26 Law & Psychol Rev 141; Jillian T Stein, "Backdoor Eugenics: The Troubling Implications of Certain Damages Awards in Wrongful Birth and Wrongful Life Claims" (2010) 40:3 Seton Hall L Rev 1117; Harvey Teff, "The Action for 'Wrongful Life' in England and the United States" (1985) 34:03 ICLQ 423; Stephen Todd, "Wrongful Conception, Wrongful Birth and Wrongful Life" (2005) 27:3 Sydney L Rev 525. It is also worth noting that "wrongful pregnancy" and "wrongful birth" as well as "wrongful birth" and "wrongful life" claims are not always distinguished from one another. See discussion in *Bevilacqua v Altenkirk*, 2004 BCSC 945, at n 1 [*Bevilacqua*].

within each. For heuristic purposes we divide birth torts into three categories, namely "wrongful pregnancy," "wrongful birth," and "wrongful life" claims. Wrongful pregnancy is claimed where a woman becomes pregnant despite not wanting a pregnancy, often resulting from a failed vasectomy;[147] tubal ligation;[148] incorrect advice stating that an individual is infertile;[149] a failed abortion attempt;[150] or incorrect diagnosis that a woman is not pregnant.[151] In these cases, the tort is the negligent failure of a health-care provider to prevent the conception or birth of a child when no child at all is wanted.[152]

---

147. See *e.g. McFarlane v Tayside Health Board*, 1999 UKHL 50; *Bevilacqua*, *ibid*; *Thake v Maurice* [1986] All ER 513 (QBD) [*Thake*].
148. See *e.g. Kealey v Berezowski* (1996), 30 OR (3d) 37 (SC) [*Kealey*]; *Parkinson v St James and Seacroft University Hospital NHS Trust*, [2001] EWCA Civ 530; *Rees v Darlington Memorial NHS Trust*, [2003] UKHL 52; *S(M) v Baker*, 2001 ABQB 1032; *Suite c Cooke*, [1995] RJQ 2765 (CA) [*Suite*].
149. See *e.g. Cattanach v Melchior,* [2003] HCA 38 [*Cattanach*].
150. See *e.g. Fredette v Wiebe* (1986), 29 DLR (4th) 534 (BCSC); *Roe v Dabbs*, 2004 BCSC 957.
151. See *e.g. RKP v Borkent*, 2005 ABQB 42 (claim failed for lack of breach of the standard of care).
152. There have been a number of different approaches in the common law as to how to award damages where a healthy child is born. One such approach is awarding no damages in holding that the birth of a healthy child is not an injury recognized by the law, though this approach is rare and currently only taken in Nevada. See *e.g. Christensen v Thornby*, 255 NW 620 (Minn Sup Ct 1934); *Szekeres v Robinson*, 715 P (2d) 1076 (Nev Sup Ct 1986) [*Szekeres*]; *Dotson v Bernstein*, 207 P (3d) 911 at 915 (Colo Ct App 2009), citing *Szekeres*. A second, more common approach is the "limited damages" approach, wherein courts award compensation only for the costs of the pregnancy, but not for child-rearing. See *e.g. Cattanach*, *supra* note 149 at 174. A third approach – the offset-benefit approach – recognizes the costs of raising a healthy child as a "compensable loss" but reduces the award on the basis that having the child also brings benefits to the plaintiffs. *Kealey, supra* note 148 at para 41; *Cataford v Moreau*, [1978] CS 933 (Qc Sup Ct); *Thake*, *supra* note 147 (interestingly, in this case child-rearing costs were awarded in a modest amount agreed by the parties, but damages relating to labour and delivery was found to have been completely offset by the benefits of having the child); *Suite*, *supra* note 148; *Troppi v Scarf*, 187 NW (2d) 511(Mich Ct App 1971). Courts have, in some cases, found that the benefits may or may not completely cancel out the burdens. Under a fourth approach, the "total recovery" approach, courts award compensation for all the reasonably foreseeable

Wrongful birth claims involve claims brought by the parent(s) of a child with a disability against a health-care provider for negligent failure to provide the parent(s) the opportunity to avoid or terminate[153] the pregnancy. Unlike wrongful pregnancy claims, in the case of wrongful birth a child is wanted, though not a child with a disability. The fact scenarios which precipitate these claims vary, and include: negligent failure to offer an amniocentesis to a woman at risk of having a child with Down syndrome;[154] failure to properly diagnose or warn the mother about the risk to the fetus of contracting rubella during early pregnancy;[155] and negligent performance of or failure to warn about the results of an ultrasound.[156] The negligence may also occur prior to conception, where it generally consists of inadequate genetic diagnosis or counselling regarding the likelihood of the parents conceiving and having a child with a genetic anomaly.[157] The use of assisted reproductive

---

damages resulting from the negligence, including the costs of raising the child. Decisions in which this approach has been adopted include *Custodio v Bauer*, 251 Cal App (2d) 303 (Cal Ct App 1967); *Emeh v Kensington and Chelsea and Westminster Area Health Authority*, [1984] 3 All ER 1044 (CA) (though this case dealt with the birth of a child with a disability, the Court rejected the legal distinction in reaching its decision); *Joshi (Guardian ad litem of) v Woolley* (1995), 4 BCLR (3d) 208 (SC).

153. See *Kealey*, *supra* note 148 at para 38; Nadia N Sawicki, "Wrongful Pregnancy, Wrongful Life and Wrongful Birth" (2005) 51:3 Medical Trial Technique Quarterly 283 at 284.

154. See *e.g. Jones (Guardian ad litem of) v Rostvig*, 2003 BCSC 1222 [*Jones*]; *Krangle (Guardian ad lietem of) v Brisco* (1997), 154 DLR (4th) 707 (SC); *Zhang v Kan*, 2003 BCSC 5; *Raina v Shaw*, 2006 BCSC 832 (claim failed for failure to establish negligence).

155. See *e.g.* the American case of *Gleitman v Cosgrove*, 227 A (2d) 689 (NJ Sup Ct 1967). An English example is that of *McKay v Essex Area Health Authority*, [1982] QB 1166 (CA)[*McKay*]. The Canadian case of *Arndt v Smith*, [1994] 8 WWR 568 (SC) [*Arndt*], aff'd [1997] 2 SCR 539, dealt with the analogous fact situation pertaining to maternal chickenpox.

156. *McColl v Hudson*, [1998] BCJ No 801 (QL) (SC); *McDonald-Wright (Litigation Guardian of) v O'Herlihy*, 2007 ONCA 89, aff'g, 75 OR (3d) 261 (SC); *Mickle v Salvation Army Grace Hospital, Windsor Ontario* (1998), 166 DLR (4th) 743 (Ont Ct J (Gen Div)) [*Mickle*]; *Petkovic (Litigation Guardian of) v Olupona*, [2002] OTC 221 (Ont Sup Ct J (Div Ct))[*Petkovic*], leave to appeal to ONCA refused, 30 CCLT (3d) 266 (Sup Ct J (Div Ct)).

157. *Bartok v Shokeir*, [1999] 2 WWR 386 (QB) [*Bartok*], aff'd (1998),

technologies can also lead to wrongful birth and wrongful life claims, for example through failure to screen for or avoid implantation of an embryo that will produce a child with a disability.[158]

Wrongful life claims are similar to those of wrongful birth, except that rather than parent(s) making the claim that they have been injured by negligence leading to pregnancy or a "wrongful birth," an individual (usually a child) is arguing that his or her own birth is a harm.[159] In such cases the plaintiff argues that, but for the negligence of the defendant, his or her mother would have avoided or terminated her pregnancy and thus would have prevented his or her birth. These claims are often brought based on practical considerations, namely that the time limitation period for children to bring an action in tort is usually significantly longer than that for adults, and the parents may have missed the window in which they could bring their claim. Also, the anticipated award of damages to the child may be greater than that to the parents, since the child-rearing obligations of the parents generally cease when the child attains majority, yet the child when grown may still incur expenses relating to his or her condition.[160] These cases have been met with almost universal refusal among common law jurisdictions.[161]

---

168 Sask R 280 (CA); *Holowaychuk v Hodges*, 2003 ABQB 201 [*Holowaychuk*]; *H(R) v Hunter* (1996), 32 CCLT (2d) 44 (Ct J (Gen Div)).

158. See *e.g. Waller v James*, [2006] HCA 16; *Johnson et al v Superior Court of Los Angeles County*, 124 Cal (2d) 650 (Ct App 2002); *Paretta v Medical Offices for Human Reproduction*, 760 NYS (2d) 639 (Sup Ct 2003).

159. See *Kealey*, *supra* note 148 at para 39.

160. *Paxton v Ramji*, 2008 ONCA 697 at para 80 [*Paxton*], aff'g *Paxton v Ramji* (2006), 146 ACWS (3d) 913 (SC) [*Paxton* 2006].

161. Only one Canadian appellate court has addressed the validity of the claim, and refused to recognize it. See *Lacroix (Litigation guardian of) v Dominique*, 2001 MBCA 122 [*Lacroix*], leave to appeal to SCC refused, 2000 SCC A No 477. The superior courts in several provinces have refused to recognize the action either at trial or on motion to dismiss. See *Arndt*, *supra* note 155 at paras 16-28; *Mickle*, *supra* note 156 at para 11; *Jones*, *supra* note 154. In other instances, courts have refused motions to dismiss wrongful life claims, noting the unsettled nature of the area of law, and also that dismissal would not save time at trial as the remaining wrongful birth claim would cover many of the same issues. See *Bartok*, *supra* note 157; *Holowaychuk*, *supra* note 157; *Sharma (Litigation guardian*

Though wrongful pregnancy, wrongful birth, and wrongful life respond primarily to instances of medical malpractice, they may also address reproductive harms associated with exposures to household chemicals. If prenatal testing and screening develops to the point where the effects of household chemical exposures can be detected, it is not farfetched to anticipate that some women may base a decision about whether to maintain or terminate a pregnancy on this basis. In turn, medicine and law could normalize this practice through birth tort claims involving failure to detect and terminate a pregnancy where the child was born with a condition resulting from prenatal chemical exposure. Whether or not this contingency comes to pass, existing birth tort jurisprudence offers important insights into some of the complexities of understanding disability as a legal harm. Both in birth torts and cases of exposure to, for example, BFRs and phthalates, a nuanced view of disability is necessary to limit the stigmatization of people with disabilities while simultaneously addressing the harms incurred through tortious action(s).

Commentators have taken different positions with respect to whether wrongful birth and wrongful life claims should be permitted, primarily in relation to the way that such claims theorize disability. Some affirm the *status quo* of permitting wrongful birth but reject wrongful life claims,[162] while others argue that wrongful life actions too, should be allowed.[163]

---

of) v Mergelas, [1997] OJ No 5304 (QL) (Ct J (Gen Div)) (unreported); *Petkovic, supra* note 156. Also, the common law of England, Australia, and most US states do not recognize the action. See *McKay*, *supra* note 155.

162. See *e.g.* Penny Dimopoulos & Mirko Bagaric, "The Moral Status of Wrongful Life Claims" (2003) 32:1 C L World Rev 35; Penny Dimopoulos & Mirko Bagaric, "Why Wrongful Birth Actions are Right" (2003) 11:2 Journal of Law and Medicine 230.

163. See *e.g.* John Anthony Eaton, "Wrongful Life Claims: A Comparative Analysis" (2005) 35 Hong Kong LJ 671; Deana A Pollard, "Wrongful Analysis in Wrongful Life Jurisprudence" (2003) 55:2 Ala L Rev 327; Amos Shapira, ""Wrongful Life" Lawsuits for Faulty Genetic Counseling: The Impaired Newborn as a Plaintiff" (1997) 13 Tel Aviv University Studies in Law 97; Dean Stretton, "The Birth Torts: Damages for Wrongful Birth and Wrongful Life" (2005) 10:1 Deakin Law Review 319; Mark Strasser, "Wrongful Life, Wrongful Birth, Wrongful Death, and the Right to Refuse Treatment: Can Reasonable Jurisdictions Recognize All But One" (1999) 64:1 Mo L Rev 29; Wendy F Hensel, "The Disabling

Though these commentators differ in their particular rationales for recognizing the tort and in their visions of how courts ought to approach it, some ideas appear repeatedly. In reference to the concern that the law would devalue life by considering an impaired existence an injury vis-à-vis death or non-existence, they assert that the law regularly makes this comparison in the area of refusal of medical treatment.[164] They also cite the right of abortion as reinforcing this conception of injury.[165] As for the difficulty of conceptualizing and calculating damages in such cases, these commentators view the expenses associated with raising a child who has a disability and damages for pain and suffering as straightforward heads of damage that further the interests of deterring medical malpractice and promoting distributive justice.[166] In this way, commentators explicitly or implicitly treat the birth of the child with a disability as equivalent to the injury of a "healthy" child,[167] or to the same effect, consider non-existence to possess the same quality of symmetry, equilibrium, or neutrality of being healthy and uninjured.[168] Finally, they frame the award of damages as promoting respect for individuals with disabilities by enabling the acquisition of necessary care.[169]

Other commentators oppose the wrongful birth cause of action (and explicitly or implicitly the wrongful life cause of action as well).[170] Among those opposed, some have focused on the impact of the tort on the rights of people living with disabilities.[171] Wendy Hensel argues that wrongful

---

Impact of Wrongful Birth and Wrongful Life Actions" (2005) 40:1 Harv CR-CLL Rev 141. See also Ronen Perry, "It's a Wonderful Life" (2007) 93:2 Cornell L Rev 329 at 329, regarding alternative mechanisms for recognizing the action of wrongful life as a breach of contract theory (rather than as a tort).

164. Eaton, *ibid* at 679; Pollard, *ibid* at 359-61; Stretton, *ibid* at 357; Strasser, *ibid* at 64, 75.
165. Eaton, *ibid* at 692; Pollard, *ibid* at 330.
166. Pollard, *ibid* at 338-42, 354; Shapira, *supra* note 163 at 100-01.
167. Shapira, *ibid* at 105-07.
168. Stretton, *supra* note 163 at 356, 358-59; Strasser, *supra* note 163 at 63.
169. Shapira, *supra* note 163 at 103-04; Stretton, *ibid* at 362.
170. See *e.g.* R Lee Akazaki, "'Wrongful Birth': An Ironic Name for a Cause of Action in the Law of Medical Malpractice" (1999) 22:1 Advocates' Q 102.
171. See *e.g.* Hensel, *supra* note 163; Darpana M Sheth, "Better Off Unborn? An Analysis of Wrongful Birth and Wrongful Life Claims under the

birth and wrongful life claims send a "demeaning and demoralizing" message to people with disabilities and society in general.[172] Obtaining compensation requires plaintiffs to "openly disavow their self-worth and dignity," as children or their mothers must testify that the pregnant woman would have had an abortion.[173] Legal inquiry in turn focuses on the functional impairment of the child rather than the shared experience of the stigmatization of disability, or on the socially constructed nature of disability.[174] As a result, "[a]ny benefits secured by individual litigants in court are thus taxed to the community of people with disabilities as a whole, placing at risk, in the drive for individual compensation, the gains secured by collective action and identity."[175] Therefore, neither action should be recognized.[176]

Sensitive to the messages these claims send, yet maintaining that courts are unlikely to abandon them, Kerry Cooperman argues that the recommended approach to upholding parental autonomy while respecting individuals living with disabilities is to fashion remedies and write judgments in a manner sensitive to the nature of disability.[177]

Americans with Disabilities Act" (2006) 73:4 Tenn L Rev 641.

172. Hensel, *ibid* at 164.
173. *Ibid* at 171-72.
174. *Ibid* at 144, 174-75.
175. *Ibid* at 144.
176. *Ibid* at 145. But see Jones, "Valuing All Lives", *supra* note 145, arguing that human rights principles *support* recovery in wrongful life claims. Sheth builds on the arguments made by Hensel in describing how wrongful birth and wrongful life claims violate the *Americans with Disabilities Act*, 42 USC 12101 (1990). See Sheth, *supra* note 171. Interestingly, at least one scholar has put forth a detailed argument focusing on human rights principles, in particular that of human dignity, in an attempt to *support* recovery in wrongful life claims. Jones considers that an award of damages recognizing a wrong promotes dignity. She conceives of the harm in wrongful life through comparing the position of the disabled child with that of a healthy child, as the latter is the child the mother believed she was carrying. She states that the main problem with the tort is its name, which denotes a focus on the "victim" rather than on the wrongful conduct of the defendant. Ideally a universal welfare scheme would provide for the needs of all disabled individuals, rather than a tort system offering compensation only to those who can make out a cause of action.
177. Kerry T Cooperman, "The Handicapping Effect of Judicial Opinions in

Cooperman supports the approach taken in *Procanik v Cillo*,[178] the New Jersey wrongful life decision accepting the claim for damages associated with the costs of living with a disability but not for general damages covering pain and suffering. Such an approach, he writes, avoids viewing being born disabled as a harm, instead favouring a "contextual jurisprudence that accounts for the social, financial, and moral concerns of families, people with disabilities, and communities."[179] In particular, it focuses on the "needs of the living" rather than on the preference of non-life over life.[180]

These analyses of the birth torts offer a ready critique of notions of reproductive harm where they involve negligence that leads to the birth of a child living with a disability. The birth tort cases stand in contrast to conventional prenatal injury claims where the negligence caused the injury of a child who otherwise would have been born "healthy." Such situations raise difficult questions about the nature of harm or injury. For example, an emphasis on the prevention of disability, which tort law promotes through its deterrence function, risks portraying individuals with disabilities in a stigmatizing manner.[181] In contrast, tort law may have difficulty recognizing that an injury has taken place in situations where some of the parties concerned do not feel aggrieved or "wounded."[182] Decisions in the birth torts ought to avoid the dichotomy of viewing a healthy child as a blessing versus a child with a disability as a harm, and evaluate damages in terms of a nuanced view of disability taking into account "biological, familial, financial, attitudinal, and social factors."[183] Reducing stigma against individuals living with disabilities depends on

---

Reproductive Tort Cases: Correcting the Legal Perception of Persons with Disabilities" (2008) 68 Md L Rev Endnotes 1 at 14-15.

178. 478 A (2d) 755 (NJ Sup Ct 1984) [*Procanik*].
179. Cooperman, *supra* note 177 at 19.
180. *Ibid* at 18, citing *Procanik, supra* note 178. See also Stein, *supra* note 146.
181. See Caroline Wang, "Culture, Meaning and Disability: Injury Prevention Campaigns and the Production of Stigma" (1992) 35:9 Social Science & Medicine 1093.
182. See Sarah S Lochlann Jain, *Injury: The Politics of Product Design and Safety Law in the United States* (Princeton, NJ: Princeton University Press, 2006) at 6.
183. Cooperman, *supra* note 177 at 18.

careful characterization of injury, particularly in wrongful birth and wrongful life claims.

Though not a matter of medical malpractice, and therefore currently outside of the framework of "birth torts," cases in which household chemicals are linked to adverse health outcomes will similarly need to strike a balance between openness to change in the human form and acknowledging the blameworthiness of wrongdoers. However, the consideration of being born with a disability as a harm or injury is important to claims linked to exposure to toxic household chemicals. To this end, successful birth torts affirm that causing fetal harm through negligence in pregnancy is a legitimate site for legal action when the negligence results in the birth of a child with a disability. If exposures to household chemicals can be understood as a matter of negligence (*i.e.* a failure to warn consumers of the potential effects of exposure during pregnancy), it stands to reason that the principles of wrongful birth claims may be extracted for application in factual scenarios addressing prenatal exposures to household chemicals.

D. Pre-Conception Torts

The third unique set of circumstances in reproductive tort involves claims of negligence that occurred not simply prior to the birth of the child, but prior to his or her conception. Pre-conception torts generally involve negligence that occurs prior to conception and *injury* that occurs *in utero*. The injury may also be alleged to have occurred prior to conception. This situation can arise if gametes sustain damage prior to *in vitro* fertilization,[184] or if radiation or toxic substances influence the germ-line cells of an individual who later has a child.[185]

---

184. See for example, Evi ML Petro et al, "Endocrine-disrupting Chemicals in Human Follicular Fluid Impair *In Vitro* Oocyte Developmental Competence" (2012) 27:4 Human Reproduction 1025; Victor Y Fujimoto et al, "Serum Unconjugated Bisphenol A Concentrations in Women May Adversely Influence Oocyte Quality During In Vitro Fertilization" (2011) 95:5 Fertility and Sterility 1816.

185. See for example, Susan M Duty et al, "The Relationship Between Environmental Exposures to Phthalates and DNA Damage in Human Sperm Using the Neutral Comet Assay" (2003) 111:9 Environmental Health Perspectives 1164; Russ Hauser, "Urinary Phthalate Metabolites

Canadian courts have not explicitly addressed the viability of pre-conception tort claims. An overview of the American case law that has dealt with the issue is helpful. On surveying the jurisprudence, one finds that the prospect of recovery varies by fact scenario and by state. The most successful cause of action has been that of a child injured as a result of failure of the mother's physician to treat her against Rh sensitization following the birth of a prior child with incompatible Rh factor blood.[186] A standard and straightforward treatment, its omission can lead to serious illness or stillbirth of a subsequently conceived child with incompatible Rh factor blood.[187] Courts in various states have allowed this type of claim, even where the injured child was not conceived until several years after the negligence occurred.[188] The state of New York, however, which has consistently denied preconception tort claims, refused to recognize this cause of action in a relatively recent decision.[189]

In contrast to the overall success of the above cause of action, no court has allowed a claim involving injury resulting from an automobile accident to a child that was not yet conceived at the time of the accident.[190] This example provides an illustration of how conception can serve as a dividing line with respect to duty. Recognizing the claim of a child *in utero* has been unproblematic in the automobile collision context. However, courts dealing with pre-conception claims have held that it is not foreseeable that a child would be injured as a result of a collision

---

and Semen Quality: A Review of a Potential Biomarker of Susceptibility" (2008) 31:2 International Journal of Andrology 112.

186. Julie A Greenberg, "Reconceptualizing Preconception Torts" (1997) 64:2 Tenn L Rev 315 at 336-37.
187. Karen Fung Kee Fung et al, "Prevention of Rh Alloimmunization" (2003) 25:9 Journal of Obstetrics and Gynaecology Canada 765; *Lough v Rolla Women's Clinic, Inc,* 866 SW (2d) 851 at 852 (Mo Sup Ct 1993).
188. Greenberg, *supra* note 186 at 323-26; Matthew Browne, "Preconception Tort Law in an Era of Assisted Reproduction: Applying a Nexus Test for Duty" (2001) 69:6 Fordham L Rev 2555 at 2567-72. As a variation on the facts of the majority of cases cited involving Rh sensitization, the successful 1967 preconception tort case of *Renslow v Mennonite Hospital*, 367 NE (2d) 1250 (Ill Sup Ct 1977) [*Renslow*], involved the negligent transfusion of Rh positive blood to an Rh negative woman who became sensitized and later conceived and gave birth to a child harmed as a result.
189. *Barakov v Beth Israel Med Ctr*, 44 AD (3d) 981 (NY App Div 2007).
190. Browne, *supra* note 188 at 2578.

involving a woman who was not yet pregnant at the time.[191]

Less consistent in terms of outcome are cases centring on surgery and other medical treatment, products including pharmaceuticals, and exposure to toxic substances (usually in an employment context).[192] Successful surgery actions have taken place in Michigan[193] and Missouri.[194] Both actions involved a subsequently conceived child injured by negligent performance of a caesarean section during the birth of a prior child. The case of *Albala v City of New York*[195] similarly involved the negligent performance of an abortion that led to the injury of a child subsequently conceived. In that case, the New York Court of Appeals held that to allow the proposed cause of action would "require the extension of traditional tort concepts beyond manageable bounds."[196] The Court also noted that the proposed duty would encourage doctors to practice defensive medicine, and that "society as a whole would bear the cost of our placing physicians in a direct conflict between their moral duty to patients and the proposed legal duty to those hypothetical future generations outside the immediate zone of danger."[197]

With respect to products liability, recovery has been sparse. Though one court refused to dismiss a claim alleging injury to children conceived and born subsequent to their mother's taking birth control pills,[198] most pre-conception actions involving pharmaceuticals have been unsuccessful claims by grandchildren of women who took DES during pregnancy.[199] As noted above, women exposed to DES *in utero* had an array of

---

191. *McAuley v Wills*, 303 SE (2d) 258 (Ga Sup Ct 1983).
192. Browne, *supra* note 188 at 2555 ff.
193. *Martin v St John Hospital and Medical Center*, 517 NW (2d) 787 (Mich Ct App 1994).
194. *Bergstreser v Mitchell*, 577 F (2d) 22 (8th Cir 1978).
195. 54 NY (2d) 269 (Ct App 1981).
196. *Ibid* at 271-72.
197. *Ibid* at 274.
198. *Jorgensen v Meade*, 483 F (2d) 237 (10th Cir 1973).
199. The lack of success in DES claims has been attributed in part to the long latency period between exposure and the discovery of reproductive harm in DES granddaughters. See Glen O Robinson, "Multiple Causation in Tort Law: Reflections on the *DES* Cases" (1982) 68:4 Va L Rev 713. See also discussion of difficulty identifying a plaintiff in multigenerational DES cases below at note 272 and accompanying text.

adverse health outcomes including uterine anomalies that impeded their capacity to carry a pregnancy to term. As a result, some of their children suffered injury due to premature birth. In one such claim – *Enright v Eli Lilly* (which involved claims made by a "DES granddaughter" born with cerebral palsy) – the New York Court of Appeals held that the principles expressed in *Albala* applied, as recognizing liability could lead to over-deterrence and a disincentive for drug manufacturers to produce generally useful products.[200] The Court also worried that recognizing a duty here would lead to claims for damages by subsequent generations of plaintiffs.[201]

Several decisions suggest that some jurisdictions may recognize a duty to plaintiffs not yet conceived in workplace and other exposure scenarios, though having to satisfy every element of the relevant cause of action, including causation, has limited recovery.[202] The United States Supreme Court in *International Union, UAW v Johnson Controls*[203] referred in passing to the possibility of pre-conception tort liability. In the decision, the Court held that an employer measure prohibiting women of childbearing capacity from participating in work activities where they would be exposed to lead, a teratogen, impermissibly discriminated against women and was not accepted as a bona fide occupational qualification (BFOQ). The majority found the prospect of tort liability to injured infants to be remote.[204] They based this conclusion on the facts that the employer was informing women of the risks associated with lead exposure and complying with Occupational Safety and Health Administration standards concerning such exposure, and that federal anti-discrimination law would pre-empt state tort law if it were impossible to comply with both.[205] The concurring judgment of

200. 77 NY (2d) 377 at 386-87 (Ct App 1991).
201. *Ibid* at 387.
202. See *e.g. Coley v Commonwealth Edison Co*, 768 F Supp 625 (Ill Dist Ct 1991); *Second Nat'l Bank v Sears, Roebuck & Co*, 390 NE (2d) 229 (Ind Ct App 1979). See also Daniel S Goldberg, "Against Genetic Exceptionalism: An Argument in Favor of the Viability of Preconception Genetic Torts" (2007) 10:2 J Health Care L & Pol'y 259.
203. 499 US 187 (US 1991) [*Johnson Controls*].
204. *Ibid* at 208.
205. *Ibid* at 208-09.

Justice Scalia similarly states that, as the employer has not demonstrated "a substantial risk of tort liability," the argument that its fetal protection policy is a BFOQ is necessarily defeated.[206] In contrast, Justice White, though concurring in the result, emphasized that given the increasing recognition of pre-conception tort,[207] a fetal protection policy could be justified if an employer could establish that it was "reasonably necessary to avoid substantial tort liability."[208]

Perhaps most relevant to the case of exposure to household chemicals is a more recent American pre-conception tort case in which the District Court for the Northern District of California decided a case involving alleged genetic damage and injury due to toxic environmental emissions. The Court held with respect to the pre-conception claims that the defendant emitter did not owe a duty to the plaintiffs as it did not provide "goods or services related to the reproductive process."[209] Following the precedent set in a California pre-conception automobile injury case,[210] the Court held that the alleged injuries were not reasonably foreseeable. The Court suggested that the law may change when "science and medicine progress to the point that scientists can interpret individual DNA histories or can confidently attribute injuries to chemical exposure."[211]

Despite the suggestion of the District Court for the Northern District of California regarding the potential for future claims in which injuries can be clearly attributed to chemical exposures, and the increased recognition of preconception torts outlined in *Johnson Controls*, the challenge posed by the lack of concrete evidence of intergenerational reproductive harm in the case of household chemicals is, as yet, a particularly difficult legal obstacle to overcome. Yet, it is pre-conception injury scenarios that may be most useful to theorizing intergenerational reproductive harm that may be caused by exposure to household chemicals. Pre-conception injury scenarios by their nature raise concern over liability for harm

206. *Ibid* at 223-24.
207. *Ibid* at 213.
208. *Ibid* at 212-13.
209. *Avila v Remco Hydraulics*, 633 F (3d) 828 at 848 (9th Circ 2011).
210. *Hegyes v Unjian*, 234 Cal App (3d) 1103 at 1138 (Ct App 1991)[*Hegyes*].
211. *Whitlock v Pepsi Americas*, 681 F Supp (2d) 1123 at 1127 (Cal Dist Ct 2010).

to future generations. As such, they clearly implicate indeterminacy of liability in time and class, and by a function of these, together with the fact that damages for injuries to infants often amount to millions of dollars, indeterminacy in amount as well. American pre-conception tort judgments have noted the "staggering" implications of recognizing a duty: courts have referred to the prospect of liability to younger siblings of the plaintiff child conceived and born to a woman previously injured in an automobile collision,[212] or, in the case of a young woman who becomes sensitized to the Rh factor through blood transfused at a young age and whose child brings a claim upon reaching majority, liability to children in a proceeding taking place "half a century after the negligent act was performed."[213] Given the ubiquity of household chemicals, lack of knowledge about their health effects (particularly in terms of multigenerational effects and exposures *in utero*), and the diffuse, often-gradual nature of exposure, factual scenarios that will pertain to harm caused by BFRs and phthalates may often involve indeterminate liability.

Courts and scholars attempting to allay concerns regarding the potential burden of indeterminate liability make several points. First, they assert that the actual number of pre-conception tort claims is and will be very small.[214] This may not be persuasive in Canadian courts as indeterminate liability has been noted to be a concern over just that: indeterminacy, and not simply the volume of claims.[215] Next, concern over indeterminate liability has been addressed by distinguishing certain injuries from "self-perpetuating" conditions such as exposure to chemicals or radiation resulting in germ-line genetic changes.[216] Any indeterminacy would be far less pronounced if liability only extends to individuals in a single generation. This approach, however, distinguishes rather than

212. *Hegyes*, *supra* note 210 at 1119.
213. *Renslow*, *supra* note 188 at 376 (quoted from the dissenting judgment).
214. *Hegyes*, *supra* note 210 at 1151-52 (dissenting judgment); Goldberg *supra* note 202 (referring to "the problem of multi-generational liability" as "the proverbial storm in a teacup" at 282), and citing Greenberg, *supra* note 186.
215. See *e.g. Canadian National Railway Co v Norsk Pacific Steamship Co*, [1992] 1 SCR 1021 at 1126-27 [*Norsk*].
216. See *e.g. Hegyes*, *supra* note 210 at 1146 (dissenting judgment); *Renslow*, *supra* note 188 at 358.

resolves the issue of transgenerational harm. To this latter end, some advocate employing a case-by-case analysis of what essentially amounts to foreseeability and proximity, rather than categorically denying any pre-conception duty.[217] Others propose drawing the line at allowing recovery only for first generation pre-conception claimants.[218] In Canadian law, sufficient proximity may address concerns over indeterminate liability.[219]

As precedent in pre-conception tort is limited, it is not possible to confidently predict how Canadian courts will resolve the issues of foreseeability, proximity, and the residual policy consideration of indeterminate liability, and further, how they might do so in a factual scenario involving exposures to household chemicals. Given the holdings in *Bovingdon v Hergott*[220] and *Paxton*,[221] it is probable that courts in Ontario, if not Canada as a whole, will take a conservative approach, not recognizing all of the pre-conception causes of action that have been successful in the US. This will make recovery difficult where household chemicals result in injuries, reproductive or otherwise, for a child yet-to-be-conceived.

IV. Rethinking the Categorization of "Reproductive Torts"

There are a number of Canadian cases which do not fit neatly into the aforementioned scheme, and which have ultimately motivated courts to rethink their approach to reproductive tort. These cases simultaneously consider some combination of prenatal injury, birth torts, and

---

217. See Tracey I Batt, "DES Third-Generation Liability: A Proximate Cause" (1996) 18:3 Cardozo L Rev 1217 at 1232. Granted, this is a somewhat circular argument in that it does not explain what factors would lead to a finding of foreseeability and proximity or address concerns over indeterminate liability; however, it does argue against a blanket no-duty rule for preconception claims.
218. See the dissenting judgment in *Grover v Eli Lilly & Co*, 63 Ohio St (3d) 756 at para 766 (Ohio Sup Ct 1992).
219. See *Norsk, supra* note 215 at para 258, but see *contra* the minority concurring judgment at para 321.
220. (2006), 83 OR (3d) 465 (Sup Ct), aff'd 2008 ONCA 2 [*Bovingdon* 2008].
221. *Paxton*, *supra* note 160. See also *Liebig v Guelph General Hospital*, 2009 CanLII 56297 (Ont Sup Ct).

preconception injury with varying outcomes. Taken together, these cases suggest a shift away from categorical classification of reproductive tort, and towards determining the legitimacy of prenatal and preconception claims drawing on the two-stage *Anns* test.[222] As discussed below, this approach at once promotes the recognition of women's autonomy by providing a means to balance the duty of care against relevant policy considerations, while establishing a need for a clear and direct relationship between the tortfeasor and plaintiff through foreseeability and proximity in duty of care.

The 1992 decision of the British Columbia Court of Appeal in *Cherry (Guardian ad litem of) v Borsman*[223] concerned facts that resembled both prenatal injury and wrongful life situations. The adult plaintiff, while pregnant, was the patient of the defendant who performed an abortion procedure on her, which failed. The infant plaintiff alleged that negligent performance of the procedure itself caused her to be born with a severe disability. At trial the defendant was found liable to both plaintiffs. One of the key issues on appeal was whether the trial judge erred in holding that the defendant owed a duty to the fetus not to harm it while performing an abortion procedure at the request of the adult plaintiff. The Court held that this was not a wrongful life case, as the defendant argued. Agreeing with the trial judge and with the infant plaintiff, the court noted that wrongful life cases are characterized by an assertion of "a legal obligation to the foetus to terminate its life,"[224] while the case in question involved an infant plaintiff physically injured by the defendant's negligence. This supported a cause of action as the defendant owed a duty to the mother to properly perform the procedure, as well as to the subsequently born child not to harm it if he failed in carrying out his duty to the mother. Thus, though in actual fact the child would not have been born but for the negligence, the court afforded the child a remedy by defining the claim through the duty not to injure.

In another case, *Lacroix v Dominique*,[225] the Manitoba Court of

222. *Anns v Merton London Borough Council*, [1977] All ER 118 [*Anns*].
223. 94 DLR (4th) 487 (BCCA) [*Cherry*], aff'g (1990), 75 DLR (4th) 668 (BCSC).
224. *Ibid* at para 71.
225. *Supra* note 161.

Appeal was also faced with a factual scenario in which it was unclear whether the injury was harm to the child *en ventre sa mère*, or a wrongful life claim. The plaintiff parents consulted the defendant neurologist about whether the medication the mother was taking to control her epilepsy would pose risks to any children they would have while she was taking the medication. The parents alleged, and the trial judge found, that the defendant had not properly advised the plaintiff parents of the risks. Their second child, the infant plaintiff Donna, "was born with physical anomalies and was diagnosed as being developmentally delayed and retarded."[226] The trial judge had found that the cause of her disabilities was the medication, and that had the parents been properly advised the mother would not have become pregnant.[227]

In setting out its analysis concerning the child's claim, the Court of Appeal stated, "[c]ases involving a claim by a child born with abnormalities generally fall within one of two categories: (1) cases in which the abnormalities have been caused by the wrongful act or omission of another; and (2) cases in which, but for the wrongful act or omission, the child would not have been born at all."[228] The Court cited *Cherry* as an example of a case falling under the first category, noting the ultimate award of damages to the child.[229] As for the second category, the court in *Lacroix* concluded that, based on the fact that the mother would not have become pregnant had she been properly advised, the case fell into the second category, and that the trial judge was therefore correct in rejecting the child's claim.[230]

The 2008 decision of the Ontario Court of Appeal in *Bovingdon* responded to both *Cherry* and *Lacroix*. The case featured a woman who was prescribed Clomid to aid with ovulation, and who later gave birth to twins with disabilities. The plaintiffs alleged that the defendant obstetrician negligently failed to inform the mother of the risks associated with taking the drug, specifically the possibility of prematurely giving birth to twins, and of the risks associated with premature birth, including

226. *Ibid* at para 5.
227. *Ibid* at para 8.
228. *Ibid* at para 24.
229. *Ibid* at para 25.
230. *Ibid* at para 42.

cerebral palsy.[231] At trial, the defendant was found to have owed a duty of care to the infant twin plaintiffs. Pardu J held, relying on *Lacroix*, that this was not a wrongful life case because the defendant, in prescribing Clomid, caused not only the birth of the children, but also their injury.[232] The defendant appealed.

Justice Feldman, in her judgment on behalf of the Court of Appeal, reviewed the two-category analysis set out in *Lacroix*, and rejected it as failing to provide "a coherent theory that can assist courts in making the difficult decision of when a child should be able to recover damages from a doctor for being born with disabilities."[233] The trouble with the approach was that cases such as *Cherry* and *Lacroix* could be viewed as falling into either category, with the negligence capable of being viewed as causing both the injury as well as the birth of the child. She preferred to approach the claim "through the normal analysis of tort liability: duty of care, standard of care, breach, and damage."[234] With respect to the first issue, the infant plaintiffs argued that the defendant owed them a duty co-extensive to that owed to their mother, namely, to properly inform her of the risks associated with taking the fertility drug Clomid.[235] The plaintiffs further asserted, likely in order to avoid the characterization of their claim as one for wrongful life, that they had the right "to have a drug-free conception, with a reduced risk of disability, rather than a right not to be born."[236]

Feldman JA held that because the defendant's duty was to provide information to help the mother make the decision of whether or not to take the drug, it could not be said that the children had a right to a drug-free birth. Neither could they be owed a duty co-extensive with that owed to the mother, since it is the mother's choice whether to take the drug or not. She could, after all, have chosen to take the drug notwithstanding any risks to the children.[237] The defendant therefore did not owe a duty

231. *Bovingdon* 2008, *supra* note 220 at para 13.
232. *Ibid* at para 4.
233. *Ibid* at para 55.
234. *Ibid* at para 61.
235. *Ibid* at para 62.
236. *Ibid.*
237. *Ibid* at para 68.

to the children not to cause them harm in prescribing Clomid to their mother.[238] Policy considerations also supported this conclusion, in that recognizing the duty would create a potential conflict: physicians might refuse to offer to prescribe Clomid to women for fear that doing so could breach a duty owed to their future children.[239] Feldman JA indicated that in deciding the case at bar on the basis of duty, she was not commenting on the viability of the wrongful life cause of action.[240] She also distinguished the case at bar from the case where a child alleges that a physician negligently prescribed his or her mother a drug that is contraindicated for pregnant women.[241]

Later the same year, the Court took on this very issue in the case of *Paxton v Ramji.* In this case, Dawn Paxton had requested her physician, the defendant Dr. Ramji, to prescribe Accutane to treat her acne condition.[242] As Accutane is a teratogen, as per the standard of care, specific precautions are supposed to be taken to ensure that the patient does not become pregnant while taking Accutane, namely the use of two forms of birth control (when the patient is not abstinent).[243] In prescribing the drug,[244] Dr. Ramji relied on the fact that Ms. Paxton's husband had undergone a vasectomy about 4 1/2 years prior to her commencing the treatment.[245] Shortly after commencing treatment, however, Ms. Paxton became pregnant due to failure of the vasectomy.[246] As a result, Jaime Paxton was born "with a number of severe disabilities

238. *Ibid* at para 70.
239. *Ibid* at para 71.
240. *Ibid* at para 72.
241. *Ibid* at para 69.
242. *Paxton*, *supra* note 160 at para 5.
243. *Ibid* at paras 6-7.
244. As Accutane is a teratogen, it was only supposed to be prescribed following the Pregnancy Protection Mainpro-C Program (PPP) developed by the drug's manufacturer, which stipulates that the patient use effective contraception from one month prior to commencing treatment, until one month after ceasing treatment. Specifically, two reliable birth control methods were to be used simultaneously, unless abstinence was the chosen method (not merely a vasectomy as in *Paxton*). See *ibid* at paras 6-7; *Paxton* 2006, *supra* note 160 at para 136.
245. *Paxton, ibid* at para 2.
246. *Ibid* at para 9.

as a result of her exposure to Accutane while *in utero*, including a right facial palsy; seizures; generalized hypotonia; megalencephaly of the left occipital lobe of the brain; prominent dysmorphic features; hearing loss; anotia (absent right ear); and microtia (malformed left ear)."[247]

The infant plaintiff brought a claim in negligence against Dr. Ramji.[248] At trial, Justice Eberhard held that a physician owes a duty to the "unconceived child of a woman of childbearing potential"[249] not to prescribe Accutane if it was contraindicated, specifically if the patient is of childbearing potential and the physician is not satisfied that she will avoid pregnancy while taking the drug.[250] In arriving at this conclusion, Eberhard J first turned to the classification of causes of action in reproductive tort, considering the analysis in *Lacroix* as particularly persuasive.[251] Viewing the duty as one not to prescribe the drug to a woman if she were unable or unwilling to follow the required birth control methods, she concluded that the duty was owed to the potential child of the patient (not to injure her/him).[252] She acknowledged that "in the abstract" this duty gave rise to a concern about conflict with the physician's duty to his or her patient.[253] However, "in the real world," physicians already deal with this conflict, as the standard of care imposed by the medical community "demands that protections must be put in place to avoid pregnancy before Accutane can be given."[254]

Eberhard J distinguished the facts of the case at bar from those in *Lacroix*. As the medication in *Lacroix* was required for the mother's health as well as for that of her future child, it was impossible to hold that the physician owed a duty to the future child in prescribing the drug.[255] She also justified holding that a duty of care could be owed in this case to a child before he or she was conceived. She noted that whether a woman is already pregnant or later becomes pregnant when prescribed Accutane,

247. *Ibid* at para 11.
248. *Ibid* at paras 2, 17.
249. *Ibid* at para 22.
250. *Paxton* 2006, *supra* note 160.
251. *Ibid* at para 157.
252. *Ibid* at para 194.
253. *Ibid* at para 196.
254. *Ibid.*
255. *Ibid* at para 199.

the risk and injury to the child may be the same and the pregnancy is equally "foreseeable and proximate."[256] Notwithstanding, having held that the defendant owed a duty to the infant plaintiff not to prescribe Accutane to her mother if it was contraindicated, the trial judge found that Dr. Ramji had met the standard of care in relying on the vasectomy as an effective means of addressing Ms. Paxton's child bearing potential. Thus, the prescription of Accutane was not contraindicated and the claim was dismissed.[257]

The plaintiffs appealed the trial judge's findings with respect to standard of care,[258] while the defendants used the appeal to argue against the recognition of a duty of care to Jaime. The Court of Appeal disposed of the appeal by overturning the trial judge's holding with respect to duty. Feldman JA, who wrote the decision, echoed her judgment in *Bovingdon* in criticizing the *Lacroix* approach of evaluating claims by determining whether or not they could be characterized as wrongful life.[259] Instead, she referred to a line of tort cases decided by the Supreme Court of Canada, relating to various factual subject matters, which set out and apply the basic test for determining whether a duty of care should be recognized.[260] To this end, the Court held that there was "no settled jurisprudence in Canada on the question whether a doctor can be in a proximate relationship with a future child who was not yet conceived or born at the time of the doctor's impugned conduct,"[261] nor was there an analogous duty of care.[262] Feldman JA thus turned to the *Anns* test[263] to first establish whether the foreseeability and proximity of duty of care necessary to establish a *prima facie* duty of care exists, and then, if such a duty existed, to examine whether residual policy considerations should

256. *Ibid* at para 206.
257. *Ibid* at paras 211-16.
258. They also appealed a finding that Jaime would not be entitled to punitive damages.
259. *Paxton*, *supra* note 160 at paras 28-29.
260. *Ibid* at para 29.
261. *Ibid* at para 53.
262. *Ibid* at para 54.
263. See *ibid* at paras 60-80, citing *Anns*, *supra* note 222 and subsequent Canadian jurisprudence.

limit recognition of the duty.[264]

Feldman JA found that, though the injury was foreseeable, the physician's relationship with the child-yet-to-be-conceived was not proximate enough to recognize a duty. Imposing a duty of care for children not yet conceived could result in physicians offering "treatment to some female patients in a way that might deprive them of their autonomy and freedom of informed choice in their medical care."[265] Citing the Supreme Court of Canada decisions in *Dobson* and *DFG*, Feldman JA stated that "[b]ecause women are autonomous decision makers with respect to their own bodies, they neither make the decision on behalf of the future child, nor do they owe a duty to act in the best interests of a future child."[266] In the case of prescribing a teratogenic drug, the physician can only enlist the agreement of the woman not to become pregnant, but he or she cannot ensure that she will abide by that agreement.[267] Feldman JA went on to state that residual policy considerations would likewise make imposition of a duty seem unwise.[268] It could, for example, destabilize women's right to abortion,[269] presumably by promoting the view that the future child has its own legal interests apart from those of the mother. As a result of the holding with respect to duty, the appeal was dismissed.[270]

The Canadian case law covering reproductive tort cases involving multiple claims (*i.e.* a combination of prenatal injury, wrongful birth, wrongful life, and preconception claims), culminating in the decision in *Paxton*, signifies a shift away from resolving disputes by determining whether they give rise to wrongful life claims, to approaching them using the ordinary principles of tort law. As noted above, this approach to reproductive tort law is particularly useful to address conflicting duties of care. In such cases, determining a duty of care relies on first proximity and foreseeability (following the *Anns* test), balanced against specific

264. *Ibid* at para 35, quoting *Syl Apps Secure Treatment Centre v BD*, 2007 SCC 38 at para 3.
265. *Ibid* at para 68.
266. *Ibid* at para 73.
267. *Ibid* at paras 74-75.
268. *Ibid* at para 77.
269. *Ibid* at para 79.
270. *Ibid* at para 88.

policy considerations.

The idea that a duty of care to a woman may preclude a duty of care to a fetus or preconceived embryo, following the policy considerations of the *Anns* test recognized in *Paxton*, is integral to upholding the principles of judicial non-intervention in the governance of pregnancy established in *DFG* and *Dobson*. The inseparability of a woman, a fetus, and her preconceived embryos is important here, and *Paxton* asserted that the unique nature of this relationship cannot require a duty of care.[271] Applied to the case of exposures to toxic household chemicals, this may mean that through the application of the *Anns* test, and the policy considerations emergent in *DFG* and *Dobson*, women, and in certain cases the physicians treating them, may not be liable for the exposure of either fetuses or preconceived embryos to exposures to household chemicals that may result in injury.

Apart from the issues of proximity and foreseeability raised in the application of the *Anns* test to prenatal and preconception claims, recovery will be unlikely in cases where the harms incurred cannot be clearly and directly linked to a particular origin, or where cause-and-effect in injury are unclear. For example, determining a duty of care for particular pharmaceutical companies has been difficult as plaintiffs whose mothers took DES are often unable to determine the manufacturer of the drugs taken by their mothers decades ago.[272] Factual scenarios where individuals may be exposed to a wide array of household chemicals prior to conception, *in utero*, and/or in breastfeeding make it difficult to discern when and how exposures took place, which chemicals are responsible for what physiological harms, and which manufacturers should be held liable.

V. Conclusion

Reproductive tort jurisprudence has a number of significant implications for the litigation of injuries caused by prenatal and preconception exposure to household chemicals. The decisions in prenatal injury cases

---

271. *Ibid* at para 68.
272. "Jury Awards $42.3 Million to Women in Drug Lawsuit", *The New York Times* (9 January 1994) 28.

(including *Montreal Tramways* and *Duval*) that do not include claims against a pregnant woman suggest that the cause of action for personal injury sustained while *in utero* is well-established. Though reproductive harms caused by household chemicals are, as noted above, most often the result of diffuse, cumulative exposures, these cases identify the potential for such claims to succeed. Further, they remind us that causation need not be definitively proven, as long as the relationship between the harm done and the purported causation can be reasonably established on a balance of probabilities.

Canadian courts have, following *DFG* and *Dobson*, established a legal framework that demonstrates flexibility in conceptualizing prenatal claims made against pregnant women.[273] Recognizing the pre-eminence of the right to reproductive autonomy, the Supreme Court of Canada has refused to permit claims of prenatal harm brought by a child, once born, against his or her mother. In *Paxton* and *Lacroix*, the courts also refused to permit claims in cases of preconception injury insofar as claims against individuals who owe the pregnant woman a duty would conflict with any duty owed to her future child. Given the undue burdens on women to avoid exposing themselves and their families to toxic household chemicals, these principles are particularly relevant.

While the recognition of women's reproductive autonomy attributable to the application of the *Anns* test in *Paxton* is important, the dominance of proximity and foreseeability in the *Anns* test renders this model problematic in cases where the factual scenario involves intergenerational harms caused by ongoing, diffuse exposures to household chemicals. Foreseeability might be addressed simply by the knowledge that household chemicals may adversely affect the reproductive system. However, if there is widespread public knowledge that exposures are harmful, the onus might equally fall to consumers to avoid products containing these chemicals. The costs of educating oneself about household chemicals, of finding the right stores and the right products with phthalate-free shampoo and flame-retardant free pajamas will, following Lee and Scott,[274] fall to women, plagued by

273. Mykitiuk & Scott, *supra* note 116 at 341.
274. See generally Lee & Scott, *supra* note 20.

the challenges of engaging in precautionary consumption. For those financially or otherwise unable to avoid exposures, seeking damages in tort might not be an option due to difficulty in pointing to a duty of care or in establishing causation, depending on the nature of the particular situation. Further, proximity in such cases could be easily undermined by an understanding that only those exposed are eligible to seek damages, mitigating problems of indeterminate liability.

In addition, the recognition of birth or life with a disability as a legal harm has important implications for the disability community, insofar as "disability comes to be seen as an injury, something located in the individual, and something for which someone ought to be held at fault."[275] Alternative approaches such as judgements that do not identify being born with a disability as a harm, but rather provide for the financial costs of living with a disability in contemporary society (following Cooperman),[276] may work to identify the problematic nature of theorizing birth and life as harms, while providing for peoples' needs. Reproductive torts jurisprudence needs to consider the diversity of human experience while recognizing the needs plaintiffs may experience in living with or raising a child with a disability.

Overall, reproductive tort law offers insightful principles for approaching cases involving the adverse health outcomes linked to exposures to brominated flame retardants and/or phthalates. However, the potential for obtaining a remedy is limited. Given the state of the science, demonstrating a clear relationship between exposures and physiological harms incurred is unlikely, and defendants are not easily identified. Moreover, success for claims of intergenerational reproductive harm caused by exposures to household chemicals is unlikely under Canadian tort law.

What remains is that Canadians and others continue to be exposed to household chemicals suspected of causing harms to the reproductive systems of those exposed, and to future generations. Existing animal and

---

275. Jennifer Ann Rinaldi, "Wrongful Life and Wrongful Birth: The Devaluation of Life with Disability" (2009) 1:1 Journal of Public Policy, Administration and Law 1 at 6.
276. Cooperman, *supra* note 177 at 14-15.

human studies, as noted above, demonstrate important implications of these exposures, to the extent that particular phthalates have already been banned from the Canadian marketplace. If tort law is insufficient to address these intergenerational reproductive harms, then further study is required to establish how chemical and product manufacturers can be deterred from causing the injuries associated with production of these chemicals, how states can better regulate their use, and what legal recourse can be sought if and when all else fails.