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Frozen in perpetuity: ‘abandoned embryos’ in Canada

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Abstract The matter of ‘abandoned embryos’ arises when surplus IVF embryos are frozen and stored for later use. If the fertility clinic or storage facility in question does not have clear direction about what to do with these embryos, and/or payment for storage ceases, and/or the embryo providers cannot be reached, the embryos raise an ethical and practical challenge. On the one hand, there is a commitment to respect the autonomy of embryo providers to determine what should happen to their frozen embryos. On the other hand, there are weighty reasons why fertility clinics and storage facilities do not want responsibility, potentially in perpetuity, for other people’s frozen embryos. This article examines the matter of ‘abandoned embryos’ – the emergence of the term, its use in policy and law, and its implications in the Canadian case. We demonstrate that despite an intricate legislative framework, there are important gaps that leave fertility clinics and storage facilities in the tenuous position of discarding ‘abandoned embryos’ without clear authorization, or storing them indefinitely. We argue that clarity in consent procedures coupled with flexible time limits on embryo storage provide an approach that can best serve the interests of all involved.

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Introduction

On 30 November 2012, the British Columbia Women’s Centre for Reproductive Health ceased operations. At the time, the Centre had frozen human sperm and embryos in storage for more than 1200 people. While preparing to close its doors

and afterwards, staff at the Centre tried to contact all persons with sperm and embryos in storage to ascertain their wishes regarding transfer to another fertility clinic or discard. The staff made hundreds of telephone calls, sent letters by registered mail, issued second mailings to alternate addresses for letters that were returned to sender,

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and hired a skip tracer to track individuals. The Centre also petitioned the British Columbia Supreme Court for an order permitting the sperm and embryos in storage to be discarded. A Court order was granted validating the Centre's authority to discard the frozen sperm and embryos (*Lam v University of British Columbia* 2013 BCSC 2142). With this decision in hand, the staff made a final effort to reach those with sperm or embryos in storage in order to be able to act on their wishes, and then discarded what materials remained.

The uncertainty experienced by the British Columbia Women's Centre for Reproductive Health about what to do with the sperm and embryos stored in their fertility clinic was unique because of the circumstances precipitating decision-making – namely, closure of the clinic. In important respects, however, this uncertainty is commonly experienced by fertility clinics and storage facilities in jurisdictions without legislated time limits, as they struggle to understand the scope of their obligations regarding what have been described as 'orphaned embryos' or more commonly 'abandoned embryos'. These are embryos placed in storage by people who are now 'lost to follow-up' – people who have completed or dropped out of fertility treatment, stopped paying storage fees, and are not able to be contacted by the clinic or storage facility to confirm or provide wishes regarding the future use or discard of frozen embryos no longer wanted for 'own' reproductive use.

In the literature, a range of terms is used to describe various options for using or discarding embryos. For example, the term 'disposition' is often used to refer to options that include both using embryos and discarding them. 'Transfer' often refers to making use of embryos for one's own reproductive purposes, or the reproductive purposes of others, but can also refer to donation to research. Embryos being discarded are often described in terms of 'destruction' or 'disposal.' For clarity, we differentiate between ways of 'using' embryos (which include own reproductive use, third-party reproductive use, improving assisted reproduction procedures, providing instruction in assisted reproduction procedures, and research) and 'discarding' embryos when no such use is to occur before the embryos are destroyed.

This article proceeds in four parts. First, we provide a history of how the term 'abandoned embryos' came into common parlance and identify its contemporary scope, focusing on the Canadian case. Although the term rarely appears in official public policy or law, it continues to be used by professional medical associations (ASRM, 2013; O'Neill and Blackmer, 2015), in popular media (Blackwell, 2013; Kirkey, 2013) and by clinicians (Elford et al., 2004) in Canada, the United States, the United Kingdom, and elsewhere. Second, we trace the introduction of the current regulatory framework in Canada governing embryo use. We show how this framework anticipates the need for clear directives for the future use of embryos in storage, but does not include any provisions for discarding unused embryos. Third, we briefly review Canadian case law relevant to the question of how 'abandoned embryos' should be handled. Finally, we conclude that legally valid written instructions in consent forms regarding the use or discard of frozen embryos should be respected (i.e. acted upon), and that those instructions should be constrained by clear legislated time

limits on embryo storage. In jurisdictions that do not have a legislated limit on embryo storage, this approach can best serve the interests of all concerned parties – persons with embryos in storage, fertility clinics and storage facilities.

The emergence of 'abandoned embryos'

Fertility clinics around the world have untold numbers of human embryos in storage. Typically, this is because more embryos are created in a stimulated IVF cycle than can safely be transferred, and the embryos that are not transferred are often frozen for possible future use (Goswami et al., 2015; Karpin et al., 2013). Ideally, when embryos are frozen for later use, clear written instructions regarding future 'own use', 'use by others', and possibly eventual discard are obtained from the person(s) for whom the embryos were created (who may or may not be the providers of the sperm or eggs, as when donor gametes are used to create the embryos in question). In some instances, however, there are embryos in storage for a good length of time – placed there by people who are now 'lost to follow-up' – for which clear written instructions about using or discarding their embryos are either missing or incomplete. These embryos pose an ethical and practical problem for fertility clinics and storage facilities (Baylis, 2015; Blackwell, 2013; Kirkey, 2013). On the one hand, there is the commitment to respect autonomy and recognition of the responsibilities (if not rights) of individuals and couples to determine what should happen to their frozen embryos. On the other hand, there are practical and weighty reasons why fertility clinics and storage facilities do not want legal and financial responsibility, potentially in perpetuity, for other people's frozen embryos.

It appears that the term 'abandoned embryos' was first used in 1983, not long after the first use of frozen embryos to achieve a live birth. In 1981, an American couple, Elsa and Mario Rios, were treated at Queen Victoria Medical Centre in Melbourne, Australia. A number of IVF embryos were created using anonymous sperm. Several of the embryos were transferred in the hope of establishing a pregnancy and two were frozen for later reproductive use. The initial transfer did not result in a pregnancy and, before the couple could use the frozen embryos in a second attempt, Elsa and Mario died in a plane crash. In the aftermath, a number of media reports discussed the fate of these embryos, speculating as to whether any children born of them might be entitled to their estate. One widely published Associated Press article quoted Margaret Tighe, then-president of an Australian anti-abortion group, as stating that 'it is terrible that human beings are allowed to be produced in laboratories, frozen, and then abandoned and allowed to die' (Kentucky New Era, 1984; New York Times, 1984). This appears to be the first use of 'abandoned' to describe embryos, thereby seeking to anthropomorphize embryos in storage in order to argue that their discard would be tantamount to abortion and, in the same line of argument, tantamount to killing a living being. Use of the term 'abandoned' (like 'orphaned') also served to equate embryos to children in a way that vilifies those who do not use the embryos they create to initiate a pregnancy. Indeed, the terms 'abandoned embryos' and 'orphaned embryos'

continue to be deployed by anti-abortion advocates (see for example Ferriman, 2011; Mundy, 2006). Shortly after this first, problematic use of the term 'abandoned embryos', the language of abandonment appeared in policy documents (Ontario Law Reform Commission, 1985) and the academic literature (Dickens, 1987; Robertson, 1985/1986).

The term 'abandoned embryos' was cemented in popular discourse in 1996, on the five-year anniversary of the UK's *Human Fertilisation and Embryology Act*. This Act, originally passed in 1991, established a 5-year maximum storage period for frozen embryos. As the initial 5-year deadline (31 July 1996) approached, fertility clinics in the UK began contacting their patients for consent to discard their frozen embryos. The responses to these efforts were uneven and 'in some clinics, more than half of the patients failed to respond' (Edwards and Beard, 1997). Media accounts described those who failed to respond as abandoning their embryos like 'lost property at a railway station' (Nacheman, 1996).

With fervent discussion about the ethics of discarding embryos in the UK looming large, the US media initiated debate about what should happen in the US, where there were no laws limiting embryo storage (Ibrahim, 1996; Schreuder, 1996). In 1997, the Ethics Committee of the American Society for Reproductive Medicine (ASRM) published a Committee Opinion on the *Disposition of Abandoned Embryos* affirming that:

[I]t is ethical for a program to consider embryos abandoned if more than five years have passed since contact with a couple, diligent efforts have been made by telephone and registered mail to contact the couple at their last known address, and no written instruction from the couple exists concerning disposition (1997 p. 1S).

With this Opinion, the ASRM recognized the phenomenon of abandoned embryos as a widespread and pervasive problem. The ASRM Opinion was reviewed and endorsed in 2004 during the US presidential election amidst debate over the ethics of embryonic stem cell research, catapulting the term into popular usage (Gold, 2004; Kinsley, 2004). In 2013, nearly 20 years after the ASRM Opinion was first developed, it was revised to expand the scope of the term 'abandoned embryos':

Another form of abandonment would be when an individual or couple with dispositional control over stored embryos may simply affirmatively indicate to the program or facility that they do not wish to have anything further to do with the embryos, thereby effectively delegating dispositional control to the program or facility (2013, p.1848).

With this addition, abandoned embryos in the US were redefined by the ASRM to include intentional as well as unintentional abandonment. The term 'abandoned embryos' then, has been used to describe embryos: (i) in storage for an extended period of time; (ii) where there are no clear written instructions from the gamete and embryo providers about what to do with these embryos if they are not to be thawed for the reproductive use of the individuals or couples for whom they were created; and (iii), for any number of reasons, these individuals or couples cannot be contacted to provide clear written instructions; or (iv) where they are wilfully 'abandoned.'

Whereas the absence of written instructions is a defining feature of most 'abandoned embryos' according to the ASRM, this is not necessarily so in Canada, where there are usually written instructions in consent forms documenting the wishes of the gamete and embryo providers. The challenge for Canadian fertility clinics and storage facilities is that the written instructions – created in accordance with the *Assisted Human Reproduction Act (AHR Act)* (Canada 2004) and its regulations on consent (Canada 2007) – may not provide adequate guidance regarding the use or discard of frozen embryos. For example, the instructions may only address anticipated 'own use', and may not include instructions for use by others or instructions for eventual discard (when 'own use' and 'use by others' is not an option). A second problem in Canada is that when there are consent forms with clear written instructions about use and discard, fertility clinics and storage facilities are unwilling (or very reluctant) to act on these instructions when the embryo providers cannot be contacted to affirm or withdraw their original consent (Ravitsky and Dupras-Leduc, 2015, p.229). This appears to be the case even when clinic policies clearly indicate that frozen embryos will be discarded in the event of default on payment or loss of contact.

Indeed, it appears that fertility clinics and storage facilities in Canada perceive consent forms providing direction on the future use or discard of stored embryos as just that – consent forms, which are always revocable, not contracts. Due to the passage of time between when consent forms were originally signed, and when the clinic or storage facility would like to act on the prior written instructions to use or to discard embryos, there are important concerns about the possibility that people will have changed their minds (Newton et al., 2007). Most clinics and storage facilities want to obtain a contemporaneous consent in no small part to avoid a situation whereby individuals or couples return for their embryos and, finding them gone, object to any and all actions taken to use or discard their embryos. As such, in Canada, the use of the term 'abandoned embryos' is more expansive than in the US insofar as the term also captures embryos: (i) in storage for an extended period of time; (ii) where there are clear written instructions about the future use or discard of these embryos, but these instructions cannot be reaffirmed by the embryo providers; and (iii), for any number of reasons, these individuals or couples cannot be contacted.

However, use of the term 'abandoned embryos' to describe embryos for which clear written instructions are either missing or available but not acted upon is both inappropriate and inaccurate. First, the term 'abandoned embryos' is inappropriate, as it suggests that responsibility for missing instructions regarding the use or discard of frozen embryos is the fault of the gamete or embryo providers. Abandonment differs from loss, for example, insofar as abandonment involves intent, a wilfulness in leaving behind an item or person. The fact is that embryos may end up labelled as abandoned through no fault or intention of individuals or couples, as when clinics fail to get proper written instructions in their consent forms, or fail to ensure that written instructions are complete. The same is true in situations where fertility clinics or storage facilities misplace or lose the relevant consent documents. In such cases, the embryos are not abandoned. Second, the term

'abandoned embryos' is inaccurate when persons with embryos in storage have made plans to use or discard their embryos in the future, and fertility clinics or storage facilities are loath to act on their instructions.

Governing so-called abandoned embryos in Canada

In Canada, concern with so-called abandoned embryos emerged with early attempts to study assisted reproductive technologies. A 1985 Ontario Law Reform Commission report, *Human Artificial Reproduction and Related Matters*, suggested that in cases where embryos were seemingly abandoned, fertility clinics or storage facilities might be in a position to decide whether to donate the embryos to research. To this end, the Ontario Law Reform Commission asserted that 'the issue of voluntary transfer or abandonment' of both gametes and embryos were cause for concern, and that the use of advance directives might not be sufficient to account for the range of issues that might arise (1985, p.201–202).

Use of the word 'abandoned' to describe embryos in Canada was made more explicitly in 1989, when media coverage of new embryo freezing programmes discussed what might eventually happen to embryos in storage. Articles published in Canada at this time referenced the Rios case, identifying fertility clinics' initial attempts to address concerns about using and discarding frozen embryos. For example, one clinic set a 2-year limit on storage 'after which unused ones [would] be destroyed or donated for research,' while another clinic established a policy that 'frozen embryos would be destroyed if an estranged couple could not agree on ownership' (Lipovenko, 1989). And while the Rios case raised concerns about what should happen to frozen embryos in the case of death, commentators also worried about what should happen in the case of divorce, withdrawal from treatment, disagreement within a couple, or closure of the clinic (Baylis, 1993; Lipovenko, 1989).

That same year, the federal government established a Royal Commission on New Reproductive Technologies (hereafter, Royal Commission or Commission) to investigate the 'social, ethical, health, research, legal, and economic implications' of reproductive technologies, and to provide recommendations about how best to govern them (Royal Commission, 1993, p.1175). The Commission's final report confirmed that only five fertility clinics offered embryo freezing and these clinics had time limits that 'ranged from four months to 10 years, and one clinic's policy was to store them until the woman who was the source of the eggs used to create the zygotes had turned 60' (1993, p.537). Of note, while the Commission reported an upper age limit of 60 at one particular clinic, the research cited by the Commission as the source for this data refers to an upper age limit of 40 (Stephens and McLean, 1993, p.17).

In a chapter called 'The Handling of Eggs and Embryos' (which included a section 'Dealing with Spare Embryos'), the Commission observed a need for clarity with regard to the handling of embryos in circumstances including the death of the embryo providers, as well as divorce and other tenuous situations. The Commission also suggested that although

'property law may be an appropriate mechanism to achieve the goal' of giving gamete providers control over the disposition of their embryos, a different conceptual framework, outside the notion of property and the elements of ownership that it suggests, would be preferable (1993, p.597–598). To this end, the Commission recommended that time limits and other policies related to discarding embryos in storage be made by legislatures outside of the adversarial process of the courts. Specifically, the Commission recommended that embryos 'not be stored for more than five years from the date they are frozen, or beyond the death of one of the gamete donors' (1993, p.599).

In 1999, the two professional medical associations most involved in the governance of assisted reproduction in Canada – the Society of Obstetricians and Gynaecologists of Canada (SOGC) and the Canadian Fertility and Andrology Society (CFAS) – published a joint policy statement, *Ethical Issues in Assisted Reproduction*. The use of reproductive technologies in Canada had expanded substantially since the time of the Royal Commission, and by this time it was clear that 'abandoned embryos' existed in Canadian fertility clinics, and that effective consent for embryo disposition was necessary. While the joint policy statement was not a clinical practice guideline, it identified ethical options for clinicians using reproductive technologies. In the section 'Disposition of Frozen Embryos', the statement made clear that '[v]oluntary uncoerced and informed, written consent is integral to the ethical disposition of frozen embryos [pregnancy, research, discard]' (Martin et al., 1999, p.19) and that only if gamete providers 'waive their decisional authority should a designated official or committee of the freezing facility in possession of the frozen embryos ... assume decisional authority, according to mechanisms approved in a national forum' (p.21–22). The joint policy statement further stipulated that when there was no 'consent to a disposition option other than disposal, the freezing facility should not use the embryos in any way' and should simply discard them (p.22). In short, the SOGC and CFAS suggested that there should be mechanisms in place to avoid the existence of so-called abandoned embryos through rigorous consent practices, and, should these consent practices fail, then fertility clinics should be empowered to make decisions about when to discard embryos.

Embryo storage was not a major issue in the parliamentary debates and public consultations leading up to the passage of the *AHR Act* in 2004. However, two motions to amend the proposed Act, raised by Liberal backbencher Paul Szabo, are relevant insofar as they might have provided some guidance on the use and discard of frozen embryos. Motion no. 39 addressed embryo use, stating that 'a donor may not transfer to another person the ownership, or any of the rights or obligations of ownership, of an embryo or any other human reproductive material' (Canada, 2003b). Discussion about this motion, which was ultimately defeated, centred on whether human embryos could be considered property – something that might be traded or exchanged between potential 'owners.' The other relevant motion, Motion no. 88, examined the discarding of embryos, suggesting that the proposed regulatory agency be explicitly responsible for establishing limits on a range of activities including 'the length of time that an embryo may be stored' (Canada, 2003a). When this motion was defeated, so too was

the possibility of explicitly attributing responsibility for establishing limits for embryo storage to Assisted Human Reproduction Canada (the federal agency tasked with the oversight of the *AHR Act*). Arguably, this task was reserved for Parliament insofar as s.10(3) of the *AHR Act* (2004) on the keeping and handling of gametes and embryos stipulated that:

10. (3) No person shall, except in accordance with the regulations and a licence, obtain, store, transfer, destroy, import or export (a) a sperm or ovum, or any part of one, for the purpose of creating an embryo; or (b) an *in vitro* embryo, for any purpose. (Canada, 2004)

Prior to any such regulations being developed (and any licensing system being introduced), however, this section of the *AHR Act* was found to be unconstitutional by the Supreme Court of Canada in its 2010 decision in Reference re *Assisted Human Reproduction Act* (2010 SCC 61, [2010] 3 S.C.R. 457). This section of the *AHR Act* was repealed in 2012, when the *Jobs, Growth and Long-term Prosperity Act* S.C. 2012, c.19 was nominally introduced to implement provisions announced in the 2012 federal budget, but also introduced a number of amendments to the original *AHR Act* (ss. 713–753). Section 8 was not amended, but Section 10 was repealed. New language for s.10 was proposed (s.716) but is not in force.

While so-called abandoned embryos have long been discussed as an issue for regulatory intervention in Canada, they have not been a primary concern in the policy process. Instead, policy debates on assisted reproduction in Canada have largely focused on the potential commodification of reproductive material and human embryos, the legitimacy of using criminal law to govern the field, and the socio-ethical implications of embryonic stem-cell research (Cattapan, 2015). To date, neither legislation nor regulations have adequately addressed so-called abandoned embryos, leaving fertility clinics and storage facilities in the precarious position of either discarding them in an unclear regulatory environment, or storing them in perpetuity. The *AHR Act* and related regulations focus narrowly on the circumstances in which embryos can be used – for reproductive purposes, for clinical training, improving assisted reproduction procedures, or for research – and there is no law or regulation on what to do when embryos remain in storage, potentially in perpetuity.

To be precise, existing law and regulations are clear about embryos for 'own use', and about use by others, but not about discarding stored embryos. The *AHR Act* contains a number of provisions on the use of embryos, with sections limiting the sale of embryos and setting out the parameters for the consent needed for their use. Section 8(3) is the most relevant for purposes of the latter, stating that:

(3) No person shall make use of an in-vitro embryo for any purpose unless the donor has given written consent, in accordance with the regulations, to its use for that purpose (Canada, 2004).

The *Assisted Human Reproduction* (Section 8 Consent) *Regulations* were brought into force in December 2007, setting out when consent must be obtained for the use of embryos. Most relevant here is s.13(1), which stipulates that once an embryo has been created and 'before a person makes use' of it, the person(s) for whom the embryos were

created must have consented in writing to 'one or more of the following purposes,' namely:

- (a) the donor's own reproductive use,
- (b) the reproductive use of a third party,
- (c) improving assisted reproduction procedures,
- (d) providing instruction in assisted reproduction procedures, or
- (e) a specific research project, the goal of which is stated in the consent (Canada, 2007)

The problem with s.13(1) is that when the persons for whom embryos were created only consent to their own reproductive use, and do not use their embryos for this purpose and do not provide new instructions, it is unclear what can and should happen next. The *AHR* (Section 8 Consent) *Regulations* do not address discarding embryos, and only provide information about certain options for own reproductive use or for use by others.

The Regulatory Impact Analysis Statement that accompanied the publication of the *AHR* (Section 8 Consent) *Regulations* in the *Canada Gazette* did provide some guidance, however, suggesting 'forthcoming regulatory proposals under section 10 [of the *AHR Act*] will address *in vitro* embryo storage limits and destruction, which will provide further clarity' (Canada, 2005). As section 10 has since been repealed, however, the regulations on consent are all that currently exist to provide guidance in this area, and although these regulations provide clarity about when stored embryos can be used, there is no direction at the federal level about the eventual discarding of so-called abandoned embryos.

In 2009, following the decision of the Quebec Court of Appeal on the constitutional legitimacy of the *AHR Act* (2008 QCCA 1157, 298 D.L.R. (4th) 712), the Quebec legislature passed the *Act respecting Clinical and Research Activities relating to Assisted Procreation*, as part of an extensive programme to both fund and regulate a wide range of assisted reproductive services in the province. This Act included explicit provisions about using and discarding stored embryos. Under s.24, when embryo providers 'fail to make contact for more than 5 years, a centre for assisted procreation may conserve, donate, transfer or dispose of those persons' gametes or embryos in a manner that is acceptable in terms of ethics and recognized by the Minister' (Quebec, 2009).

Although s.24 recalls the recommendations of the Royal Commission on New Reproductive Technologies and the ASRM guidelines in referring to a 5-year time frame prior to discard, there was (and remains) significant concern with the fact that at their discretion, fertility clinics and storage facilities could use the embryos for purposes other than those originally intended by the gamete and embryo providers. Despite the recommendations of the *Commissaire à la santé et au bien être* to alter this section of the Act, currently there are no plans to amend this part of the legislation (Quebec, 2014).

With the exception of Quebec, where the use and discard of so-called abandoned embryos is at the discretion of individual clinics, there is no governance of abandoned embryos at the federal, provincial and territorial levels. In cases where embryos are designated for reproductive

purposes, the improvement of assisted reproduction procedures, providing relevant instruction, or a specific research project, directions about how to discard unused embryos may be superfluous, or only necessary if the purposes for which they were intended cannot be fulfilled. However, when there is only consent for own use, and no directions for future use or discard, or where there are such directions but the clinics are loath to act on them without further consent, concerns remain about how and when discarding embryos in storage is appropriate. Ultimately, clear information about the legal parameters for discarding so-called abandoned embryos, potential time limits for storage, and the relevant responsibilities of fertility clinics and storage facilities is lacking.

Recent developments in Canadian case law

The Royal Commission stated clearly that embryo disposition decisions 'are a matter for society, through its legislators, to decide – not for the courts to decide through an adversarial process' (1993, 598). In the absence of relevant federal legislation and regulations, however, disputes have fallen to the courts (Rivard and Hunter, 2005, p.106). For the most part, these cases have struggled with the legal status of the embryo – as property, a potential person, or *sui generis*. Academic literature and policy documents have tended to suggest that the embryo is *sui generis*, neither property nor potential person, but rather something that is 'unique and deserves greater respect than other human tissues or organs because of its existing potential to develop into a human being' (Moses, 2011, p.94; Canadian Biotechnology Advisory Committee, 2005, p.2–31). At law, however, the difficulty of making judgements on something unique is apparent, and judgements have used the framework of property law while paying attention to the potentially problematic nature of identifying human embryos as property (Dickens and Cook, 2010; Rivard and Hunter, 2005).

This understanding of embryos as property has surfaced in two recent Canadian cases. In *C.C. v A.W.* (2005 ABQB 290) the court considered who had decisional authority for embryos created using a known sperm donor. The dispute in this case had to do with custody of twins born to CC using sperm from AW. AW had initially provided sperm 'as an act of friendship' so that CC could become pregnant using IVF. CC did become pregnant with the twins, and four additional embryos were cryopreserved and stored. At the time of the hearing, CC was seeking access to use the remaining stored embryos, which AW refused because CC was limiting his access to the twins. Sanderman J ultimately found that although AW did not consent to the reproductive use of embryos in storage, the stored embryos remained the property of CC. Specifically, the court held that the embryos were 'chattels that can be used as she sees fit.'

The finding that embryos can be considered property was affirmed in *Lam v University of British Columbia* (2013 BCSC 2142). In 2002, the electricity to a storage freezer at the University of British Columbia's Andrology Laboratory was disrupted and many of the stored sperm samples were damaged. In 2010, the materials in storage (including damaged samples) were transferred to the British Columbia Women's Centre for Reproductive Health. Later, when the

Centre was closing it petitioned the Court for permission to discard all materials remaining in storage including the damaged sperm samples. The Centre worried that if the stored sperm was discarded (along with the stored embryos) this might have a negative impact on an ongoing class-action suit by the men who had originally stored sperm with the University of British Columbia's Andrology Laboratory, as the sperm would no longer be available for testing to confirm damage should this be necessary in support of any evidentiary claims (Puchta, 2015). Butler J. ruled on the petition (as part of *Lam v University of British Columbia* 2015 BCCA 2) that 'there was no doubt that the specimens [sperm and embryos in storage] were personal property.' This view, that the specimens were property, would be particularly important to the eventual outcome of the case, as the University of British Columbia appealed the view that the specimens were property. This view was upheld in the judgement of British Columbia Court of Appeal (*Lam v University of British Columbia* 2015 BCCA 2). However, more important for our purposes is that the ruling on the petition also asserted that it is reasonable for the Centre to cease storing the specimens, including the embryos, given that the Centre was paying unsustainable prices for storage, 'had taken reasonable steps to protect the interests of the owners by storing the specimens for a lengthy period of time without reward,' and had 'taken great efforts to communicate with the owners.'

The ruling on the petition suggests that so long as fertility clinics or storage facilities have stored the embryos in question for 'a lengthy period without reward,' that there is a need to discard the embryos for purposes of commercial necessity, and there have been substantial efforts to contact those for whom the embryos were created, it is reasonable for fertility clinics or storage facilities to discard these embryos. Questions remain, however, as to what constitutes 'a lengthy period,' 'commercial necessity' and 'great efforts'. Moreover, meeting these standards for discard may be unduly onerous. The 'great efforts' undertaken by the Centre to contact those for whom the embryos were originally created – making telephone calls, sending letters to multiple addresses, hiring a skip tracer – were considerable, and some might think excessive, in a context where the persons concerned have stopped paying storage fees. Further, waiting until storage is spatially or financially unsustainable, and discard is a 'commercial necessity' may be excessive. Lastly, it is important to note that this decision was reached in a particular case, at a particular moment in time, and at a provincial (not federal) level. As such, this ruling does not negate the need for clarity in legislation, regulation and/or public policy.

Discarding so-called abandoned embryos

On a go-forward basis, one way to reduce uncertainty regarding stored embryos in Canada is to ensure that legally valid written instructions for using and discarding them are respected (i.e. acted upon). A second way to reduce uncertainty is to introduce a legal time limit on embryo storage after which embryos that have not been used for reproductive purposes or transferred for use by another (such as research use) can be discarded without having to resort to the courts.

Some jurisdictions have legislation, regulations or guidelines that impose a time limit on embryo storage by which either using or discarding embryos is mandated. The establishment of a time limit makes clear to patients, fertility clinics and storage facilities what will be done with embryos in storage, irrespective of their status as 'abandoned' once the time limit has lapsed. For example, some jurisdictions allow 5 years of embryo storage (e.g. Denmark 1997); other jurisdictions have a 10-year limit (e.g. UK, 2009, New Zealand 2010 and certain parts of Australia (Stuhmcke and Chandler, 2014)). In some jurisdictions these limits are fixed; in other jurisdictions there is flexibility insofar as it is possible to request and be granted extensions. For example, in the UK, changes to the *Human Fertilisation and Embryology Act* in 2009 moved the time limit from 5 years to 10 years and allowed for extensions to the 10-year limit. In addition, amendments in 2010 to the New Zealand *Human Assisted Reproductive Technology Act 2004* specifically allowed for the Ethics Committee to authorize longer periods of storage (New Zealand, 2010).

The application of a time limit, not only to so-called abandoned embryos but to all embryos created in a particular jurisdiction, has been subject to criticism. For example, in her research on embryo storage limits in Australia, Anita Stuhmcke (2014, p. 289) draws attention to the ways that 10-year time limits for embryo storage have worked to link the 'life' of the embryo in storage to the reproductive age of embryo providers. In doing so, she argues that such time limits propagate gendered assumptions about a 'universally applicable timeframe for reproduction,' and calls for an understanding of embryo storage and disposition that incorporates flexibility and accounts for the diversity of patients' experience. Further, as part of the same study – which included a survey of 290 people in Australia with embryos in storage – a minority stated that they 'would choose a storage time of less than 10 years,' while 'most preferred no time limit at all or one based on a patient's need or ability to use' (Stuhmcke and Chandler, 2014, p. 132; see also Karpin et al., 2013).

To be sure, exceptions and flexibility in embryo storage time limits are important in ensuring that patients are able to make reproductive choices consistent with their views, values and priorities (Karpin et al., 2013; Stuhmcke, 2014; Stuhmcke and Chandler, 2014). At the same time, legally mandated storage time limits are a useful mechanism to manage the problem of so-called abandoned embryos when patients and couples are no longer involved in reproductive decision making. First, time limits address legal concerns about using or discarding embryos when the persons for whom they were created are no longer able to make decisions for reasons of death or disability. The late neurosurgeon and writer Paul Kalanithi's musing on the possibility of embryos left behind is of poignant value, especially as he and his wife engaged in the creation of embryos knowing that he was dying. In *When Breath Becomes Air*, Kalanithi (2016, 145) imagines his own embryos 'stuck in a freezer somewhere, too painful to destroy, impossible to bring to full humanity: technological artefacts that no one knew how to relate to'. Issues about the status of stored embryos and possible inheritance are more likely to be avoided when there is an expiration date on embryo storage. Second, storage limits make clear to those for

whom the embryos were created that if they want to use their embryos or control their use by others, then they need to act before the time limit expires (either to make a decision about use or discard, or to request an extension). Given the well-documented difficulty that persons with embryos in storage have in thinking about what to do with their embryos and making decisions about using or discarding them, storage limits can helpfully facilitate passive decision making (Cattapan and Doyle, 2016; Lyerly et al., 2011; Pereira et al., 2015; Provoost et al., 2012). Third, storage limits make clear the obligations of fertility clinics and storage facilities. While it is fair to expect that fertility clinics will notify persons with embryos in storage when a time limit is approaching, clinics will not have to worry about litigation that might ensue if they discard embryos left in storage beyond the time limit. Fourth, time limits ensure that fertility clinics and storage facilities do not incur the costs of storing an increasing number of embryos in perpetuity, or of tracking persons lost to follow-up in order to ascertain their current wishes.

Despite a complex legal and regulatory environment, and despite concerns about federal authority to regulate on assisted reproduction, flexible time limits for embryo storage could be established in Canada at the federal, provincial or territorial levels. First, at the federal level, it is important to note that the consent regulations remain within federal jurisdiction, and could be amended to include provisions about discarding stored embryos. Looking to the time limits established in the UK or New Zealand – countries with legislation similar to that in Canada – will prove informative in identifying both how time limits can be used, how they might be modified to speak particularly to the issue of so-called abandoned embryos (thereby avoiding some of the concerns about blanket storage limits), and the extent to which exceptions to, or extensions of, these limits might be appropriate. At the same time, at the federal level, there is currently little political will to engage in the governance of reproductive technologies (Baylis et al., 2014; Snow et al., 2015). Since 2006, when Assisted Human Reproduction Canada was officially created, the federal government has done little in the field of assisted human reproduction other than scale back the *AHR Act*. Second, at the provincial or territorial levels, there may be governments, in addition to the Government of Quebec, that are willing to establish time limits to address these concerns.

In conclusion, Canada today remains far from the position advocated by the Royal Commission that potential disputes about using or discarding embryos not be the subject of litigation, and that embryos not be regarded as property. A few disputes have ended up in court, and the judgements have determined that embryos are a form of property. Other approaches to using and discarding embryos are possible, however. For example, other jurisdictions have had success in implementing time limits on embryo storage, which have had important effects on addressing concerns about the fate of so-called abandoned embryos without making any claims about property. The establishment of flexible time limits on embryo storage by amending existing regulations of the *AHR Act* or introducing legislation or regulations at the provincial level could clarify what to do about these embryos.

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