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BIRTH AFTER DEATH: PERPETUITIES AND THE NEW REPRODUCTIVE TECHNOLOGIES

Sharona Hoffman* & Andrew P. Morriss**

INTRODUCTION

The Rule Against Perpetuities ("Rule" or "RAP") has long terrorized law students and lawyers alike: "no interest is good unless it must vest, if at all, not later than twenty-one years after some life in being at the creation of the interest."1 Despite this deceptively simple formulation, the Rule's complexities have bedeviled generations of property students and practitioners on both sides of the Atlantic. Reformers argue that the Rule's complexity is unnecessary to achieve the Rule's objectives2 and turns it into merely a malpractice trap.3

Despite this "reign of terror,"4 the Rule continues to apply in various forms in most U.S. jurisdictions and in England today,
partly because it protects important social interests, but partly because of inertia. The Rule is complex and esoteric, two qualities unlikely to induce state legislatures to take up the banner of reform.

The development of new reproductive technologies ("NRTs"), however, poses a serious threat to the Rule, one that could eliminate the Rule's ability to function. Human cloning, for example, has gone from science fiction to a subject for debate in Congress. Scientists have begun experimenting with the cloning of early stage human embryos, and one group has claimed (apparently falsely) the birth of a cloned human. As a result of the availability of these reproductive technologies, even dead people will have to be presumed to be fertile, and the period of "actual gestation" included within the Rule's period could be indefinitely extended by the existence of frozen embryos.

Without reforms to address this threat, in a few years, or perhaps tomorrow, a case will arise that forces the court to choose between an interpretation of the Rule that strikes many future interests

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5 These interests are frequently overlooked but are present nonetheless. See Haskell, supra note 2, at 545 (arguing that Rule's "societal purpose" is "often overlooked").

6 See Joel C. Dobris, The Death of the Rule Against Perpetuities, or the RAP Has No Friends—An Essay, 35 REAL PROP. PROB. & TR. J. 603-04 (2000) ("Except for a few law professors, tax bureaucrats, and even fewer reform-minded trusts and estates practitioners, society does not seem to care anymore about perpetuities, dynasties, dynastic property, and 'baronies.'").

7 See, e.g., Mike Allen, Abortion, Cloning Are on Bush Agenda, WASH. POST, Jan. 23, 2003, at A4 ("White House senior adviser Karl Rove, outlining plans that would have sounded improbable just three months ago, said yesterday that bans on late-term abortions and human cloning are high on President Bush's agenda and should be achievable in the new Congress."); Rick Weiss, Debate About Cloning Returns to Congress; Senate Considers Ban Affecting Human Embryos, WASH. POST, Jan. 30, 2003, at A9 (describing "contentious debate" over cloning in Senate).

8 Jose B. Cibelli et al., The First Human Cloned Embryo, SCIENTIFIC AMERICAN, Jan. 2002, at 45 (describing successful cloning of human embryo to six-cell stage and development of early stage embryos from eggs that were not fertilized by sperm).

9 See, e.g., Nell Boyce & James M. Pethokoukis, Clowns or Cloners?, U.S. NEWS & WORLD REP., Jan. 13, 2003, at 48, 48 (describing Raelians' claims). This claim has not been substantiated. See Kenneth Chang, Saying that Hoax is Possible, Journalist Leaves Cloning Tests, N.Y. TIMES, Jan. 7, 2003, at A12 (reporting growing skepticism of Raelian cloning claims).

10 See infra notes 213-15 and accompanying text.

11 The reader who is not sure what this means need not worry; we discuss these issues in great detail below. See infra notes 87-194 and accompanying text.
involving children and other descendants as invalid and an interpretation that almost entirely eviscerates the Rule. Either alternative’s consequences—eliminating (or at least severely restricting) a set of future interests or eliminating the Rule’s important protections—has serious and unwelcome social consequences. In this Article, we outline the problems posed by the development of new reproductive technologies for the Rule Against Perpetuities and propose reforms to address those problems.

In Part I, we describe the Rule Against Perpetuities, the policies behind the Rule, and past attempts at reform. In Part II, we describe several current and potential reproductive technologies that pose a threat to the Rule. In Part III, we describe the problems these technologies pose for the Rule. In Part IV, we propose reforms designed to protect the policy interests served by the Rule and prevent the problems caused by the new reproductive technologies.

I. THE RULE AGAINST PERPETUITIES

Although many, if not all, American law students are subjected to the Rule Against Perpetuities during their first year Property course or a Wills and Estates course, the Rule is so misunderstood that a brief review is necessary. Perhaps the most important point is that there is no single “Rule Against Perpetuities” in the United States today. Although most law texts begin with the common law version of the Rule, there are actually four different approaches to the Rule that differ significantly in a number of ways: the common law Rule; the “wait-and-see” Rule; the cy pres modification of the Rule; and the Uniform Statutory Rule Against Perpetuities (“USRAP”).

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12 See infra notes 16-86 and accompanying text.
13 See infra notes 87-151 and accompanying text.
14 See infra notes 152-94 and accompanying text.
15 See infra notes 195-241 and accompanying text.
17 There are also a number of differences between specific state statutes implementing the various approaches. These need not concern us here.
A. COMMON LAW RULE

The most familiar approach to perpetuities is the common law Rule, succinctly articulated by Professor John Chipman Gray in 1886 and quoted at the start of this Article. To illustrate the basic rule, consider T's will that leaves Blackacre "to my son A, and then to my first grandchild to reach twenty-five." The contingent remainder following A's life estate violates the common law Rule even if T's oldest grandchild is twenty-four at the time of his death, because the remainder might vest more than twenty-one years from the death of the relevant lives-in-being. Suppose all living grandchildren die and a new grandchild is born after T's death. A then dies before the new grandchild reaches age four. The grandchild's interest would vest, if at all, more than twenty-one years later. The gift is therefore void, since only T, A, and the grandchild (who is alive at the time of T's death) can be used as lives-in-being.

The common law rule has three main characteristics:

- It is a rule of logical possibility—if individuals who affect vesting are alive, then they are assumed to be able to do any act possible for a living person, including bearing children at advanced ages, marry people not born at the time of the gift, and so forth. Gifts are therefore void "if there is any possibility, however unlikely, that the perpetuity period (lives in being plus twenty-one years) will be exceeded." This is true even if by the time of the litigation, the contingencies have been resolved.

18 GRAY, supra note 1, § 201 (noting that original formulation was slightly different but functionally equivalent).
19 Robert E. Megarry, Comment, 81 L.Q. Rev. 478, 481 (1965). The author noted that "[t]his part of the rule is so fundamental, and so highly stressed by all the books and teachers, that he who does not know it must be expected to know little or nothing of the rest of the rule." Id. It was this precise point, however, that led the California Supreme Court to hold that the Rule was too complex to allow malpractice claims against attorneys who violate it. See Lucas v. Hamm, 364 P.2d 685, 690 (Cal. 1961). But see Wright v. Williams, 47 Cal. App. 3d 802, 809 n.2 (1975) (suggesting Lucas is no longer valid).
20 Leach, supra note 4, at 729.
The Rule is applied to interests prospectively. That is, at the time the transfer is made (the time of an inter vivos transfer or when a will goes into effect), the Rule is applied as of that date and with only the knowledge of events then available. The Rule is applied to interests prospectively. That is, at the time the transfer is made (the time of an inter vivos transfer or when a will goes into effect), the Rule is applied as of that date and with only the knowledge of events then available. Violations of the Rule lead to the striking of at least the invalid interest. This "all or nothing" nature gives potential litigants a powerful economic incentive to bring claims involving the Rule.

These three characteristics determine how the Rule will be applied and limit the policy objectives it can serve. First, the Rule serves the interest of certainty of title by providing that invalid interests are immediately struck or, at least, struck after litigation. Thus, we know now (or at least after suing someone) which interests are good and which are not.

Second, the Rule imperfectly advances the policy of facilitating transferability of property. The common law Rule requires that interests vest in interest, not that they vest in possession. Because a vested interest may not result in possession for many years, even vested future interests can cause problems for conveying title. This is so because the holders of all the interests must jointly act to convey a fee simple title to the asset. There is thus a problem of long-lived multiple interests that raise the transaction costs of land

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21 Id.
22 See Lawrence W. Waggoner, The Uniform Statutory Rule Against Perpetuities, 21 REAL PROP. PROB. & TR. J. 569, 570 (1986) ("A single chain of imagined events that could postpone vesting (or termination) beyond the permissible period spoils the testator's disposition."). The doctrine of "infectious invalidity" can lead to additional interests being struck. See ROBERT J. LYNN, THE MODERN RULE AGAINST PERPETUITIES 135 (1966) (explaining doctrine as allowing bad interest to lead to striking of interests that themselves pass under Rule because bad limitation is essential to donor's dispositive plan); W. Barton Leach, Perpetuities Legislation: Hail, Pennsylvania!, 108 U. PA. L. REV. 1124, 1147-49 (1960) (discussing infectious invalidity).
23 Leach, supra note 22, at 1132, 1150.
24 See Haskell, supra note 2, at 561:
If the future interests are contingent because the holders are unborn, it is peculiarly difficult to convey the fee. But even if the future interests are vested, which requires that the holders be presently identifiable, alienability is nevertheless fettered because it takes the joinder of the holders of successive interests to convey the fee.
transactions. The Rule provides imperfect protection against these, because properly drafted interests can "be made to endure for generations without a technical violation of the Rule." Since many people live into their eighties and beyond, "twenty-one years after some life in being at the creation of the interest" can amount to over one hundred years.

Third, the Rule imperfectly guards against fractionation of title. Where multiple owners share title to property, a "tragedy of the anti-commons" may result, preventing use of the property. Its protection against over-fractionation is imperfect because even where the Rule strikes future interests, it does not necessarily result in consolidating interests in property. In the infamous case of Brown v. Independent Baptist Church of Woburn, the striking of the invalid future interest led to the distribution of the property under the residual clause of a ninety-year-old will, leading to the expenditure of more than $9,000 out of the property's value of $34,000 to locate the heirs. The Rule thus imperfectly guards against inalienability due to fractionated land titles.

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26 GRAY, supra note 1, § 201, at 191.
27 For example, a standard savings clause, such as one specifying the names of twelve healthy babies as measuring lives, can greatly extend the perpetuities period. See JESSE DUKEMINIER & STANLEY M. JOHANSON, WILLS, TRUSTS, AND ESTATES 837, 875 (5th ed. 1995) (noting that actuarial statistics predict that at least one of twelve healthy babies should live to at least eighty years old, thus "12 healthy babies" clause should produce validating lives that provide a perpetuities period of more than 100 years). A savings clause protects an instrument against inadvertent violation of the Rule through a variety of mechanisms. See W. Barton Leach & James K. Logan, Perpetuities: A Standard Saving Clause to Avoid Violations of the Rule, 74 HARV. L. REV. 1141, 1141-47 (1961).
28 "Fractionation of title" refers to the division of the bundle of rights that make up a fee simple absolute into multiple bundles held by separate individuals. As the number of individuals holding some of the rights that make up a fee simple absolute title increases, the danger of anticommons increases. See infra note 29 for explanation of "anticommons."
29 See generally Michael A. Heller, The Tragedy of the Anticommons, 111 HARV. L. REV. 621 (1998) (describing anticommons problems that arose in former Soviet Union as result of fractionated title to property). A tragedy of the anticommons is the opposite of a tragedy of the commons. Excessive division of a property's title among multiple owners results in an inability to use the property because the transaction costs of reaching an agreement on the use are too high. Id. at 677.
31 Leach, supra note 4, at 743.
32 See Levin & Mulroney, supra note 25, at 335 ("One of the primary methods of preventing restraints on the alienation of property is embodied in the Rule Against
Fourth, the Rule imperfectly guards against excessive dead hand limitations on marketability by restricting some, but not all, remote interests. The balance struck by the common law Rule is generally stated as being that one should be able to control only for the lives of persons known to the grantor or testator. As Professor Leach noted, however, almost all perpetuities violations result from one of these conditions: (1) a gift being contingent on a person reaching an age of more than twenty-one; (2) a gift including persons unborn at the time of the gift; or (3) inclusion of a contingency unrelated to age or lives that could occur more than twenty-one years after the creation of the interest. Finally, the Rule applies to a wide range of interests. In addition to the familiar problems of gifts of future interests in real property, which happens less frequently today than in medieval England, courts have also applied the Rule to a variety of other interests, including options to purchase and rights of first refusal. Although

Perpetuities.

"Dead hand control" refers to continued control of assets by a deceased former owner through restrictions on the subsequent owners.

See Ira Mark Bloom, Perpetuities Refinement: There Is an Alternative, 62 WASH. L. REV. 23, 25-26 (1987) ("That the Rule serves a useful societal purpose by limiting dead hand control is a viewpoint almost unanimously accepted."); Levin & Mulroney, supra note 25, at 333 (noting that Rule expresses policy "that it is undesirable to permit the unrestrained freeze of property ownership in the hands of subsequent owners in modes that are inflexible or obsolete"). Remote interests retained by the grantor, such as rights of re-entry, are generally exempt from the common law Rule. See Robert J. Lynn, Perpetuities Literacy for the 21st Century, 50 OHIO ST. L.J. 219, 223 (1989) (noting right of re-entry retained by grantor and not invalidated by Rule). But see W. Barton Leach, Perpetuities: The Nutshell Revisited, 78 HARV. L. REV. 973, 980 (1965) ("Few states are committed to exempting rights of entry and possibilities of reverter from the Rule; the arguments against any other state so exempting them are, in the opinion of the present writer, overwhelming.").


Leach, supra note 4, at 735.

See Gregory G. Gosfield, A Primer on Real Estate Options, 35 REAL PROP. PROB. & TR. J. 129, 146-47 (2000) (discussing need to draft carefully to avoid perpetuities issues in options); J.A. Bryant, Jr., Annotation, Pre-emptive Rights to Realty as Violation of Rule Against Perpetuities or Rule Concerning Restraints on Alienation, 40 A.L.R. 3D 920, 924 (1971) ("All but a few of the cases which have considered the point have concluded that the common-law rule against perpetuities (if in force in the jurisdiction) is applicable to pre-emptive rights."). The Restatement (Third) of Property excludes coverage of options for the purchase of land, however, and so this problem may be reduced in the future. RESTATEMENT (THIRD) OF PROP.: SERVITUDES, § 3.3, cmt. a (2000). Options to purchase are interests that give an entity the right to purchase a property during some future period. Rights of first refusal grant
we rely on the simpler wills examples in this Article, the analysis is equally applicable to the Rule's effect on these other interests. The Rule's application to these additional interests means that the impact of the NRTs on the Rule goes well beyond the estate planning context.

Several approaches have been used to address the above described problems, resulting in three modified versions of the common law Rule.

B. WAIT-AND-SEE

A reaction to the stringency of the common law Rule, the wait-and-see approach allows interests that would be struck under the common law Rule to be saved by waiting through the perpetuities period (lives in being plus twenty-one years) to see whether or not an event occurs. This principle was adopted by the American Law Institute in 1979 in the second Restatement. Interests that satisfy the common law Rule automatically satisfy the wait-and-see Rule; interests that fail the common law Rule may satisfy the wait-and-see Rule. Analysis under a wait-and-see Rule Against Perpetuities
is thus a two-stage process. In the first step, a transaction is analyzed under the common law Rule. If the transaction is good under the common law Rule, then it is good under the modified Rule. If the transaction fails under the common law Rule, then the wait-and-see portion of the Rule applies. In this step, the "essential operation" of the modified Rule "involves waiting to see whether a nonvested interest actually vests or terminates within some time period." If the interest vests or terminates within the period allowed, then the interest is good. If the interest does not vest or terminate, the interest is either struck or reformed by the court. A variety of wait-and-see approaches exist, depending on how the waiting period is determined.

Thus, in the earlier example of a contingent remainder "to my first grandchild to reach twenty-five," the interest would be good if a grandchild actually reached twenty-five within twenty-one years of A's death or if a grandchild living at the time of the testator's death reached twenty-five, rather than being void because of the possibility that a hypothetical afterborn grandchild might be the first to reach twenty-five more than twenty-one years after the death of the testator and the grandchildren living at the time of the testator's death.

The wait-and-see approach trades off certainty of title, simplicity, and some marketability for increased attention to donor/grantor intent. It advances no additional policy objectives and weakens
some of the traditional common law Rule policy objectives\textsuperscript{46} by extending the period of dead hand control and allowing interests to survive for a time when they would otherwise be stricken at the outset.\textsuperscript{47}

C. CY PRES

The second "reform" mechanism to address the perpetuities problem is incorporated into both the Restatement's wait-and-see approach\textsuperscript{46} and the Uniform Statutory Rule Against Perpetuities.\textsuperscript{49} Under cy pres, or reformation, courts can "reform a future interest that violates the Rule Against Perpetuities to make it conform to the Rule in a manner approximating the intention of the donor."\textsuperscript{50} Some cy pres advocates argue that the courts should be able to insert a savings clause into the will or other instrument.\textsuperscript{51} With the original uncertainty because the only interests that will trigger the wait-and-see provisions are already quite uncertain because they are nonvested and contingent. Waggoner, supra note 22, at 573.

\textsuperscript{46} Any wait-and-see reform also alters the distribution of which interests will survive the Rule. As Professor Dukeminier pointed out in an article critical of the USRAP but equally applicable on this point to all wait-and-see reforms, wait-and-see will not often come to the rescue of the skilled draftsman, who will routinely insert an appropriate perpetuities saving clause. Wait-and-see almost always will affect families whose ancestor consulted an average lawyer or, worse, drew the will himself. The inept work of a thoughtless draftsman will be saved for the wait-and-see period. The testator's descendants may be left in a straightjacket. Dukeminier, supra note 35, at 1037.

\textsuperscript{47} See id. at 1050-51 (discussing policy objections to wait-and-see approach). Critics of the wait-and-see approach also argue that it is incoherent because "there is no principled way to determine the length of the waiting period within the framework of the common law Rule Against Perpetuities." Susan F. French, Perpetuities: Three Essays in Honor of My Father, 65 WASH. L. REV. 323, 333 (1990). See Waggoner, supra note 22, at 573 ("The greatest controversy over wait-and-see concerns how to determine the allowable waiting period—the time allotted for the contingencies to be validly worked out to a final resolution.").

\textsuperscript{48} RESTATEMENT (SECOND) OF PROP.: DONATIVE TRANSFERS § 1.5 (1983).

\textsuperscript{49} HANDBOOK OF THE NATIONAL CONFERENCE OF COMMISSIONERS ON UNIFORM STATE LAWS, Uniform Statutory Rule Against Perpetuities, 965 (1990) [hereinafter USRAP].

\textsuperscript{50} Haskell, supra note 2, at 556. See also Dukeminier, supra note 35, at 1071 (describing how cy pres works).

\textsuperscript{51} See Olin L. Browder, Jr., Construction, Reformation, and the Rule Against Perpetuities, 62 MICH. L. REV. 1, 5-6 (1963) (suggesting that "an obvious verbal reformation in the form of a savings clause" readily disposes of fertile octogenarian cases and "the rest of the company of improbable possibilities"); see infra notes 160-61 and accompanying text (defining fertile octogenarian problem).
perpetuities Rule, or in the case of the wait-and-see reforms or Uniform Statutory Rule Against Perpetuities, both the original Rule and the alternative secondary perpetuities Rule are applied. Some interests pass these perpetuities tests; for these interests there is no change. For those that fail the original (or revised) perpetuities test, the court attempts to construct an interest that passes the perpetuities Rule and that approximates the transferor's intent.

For example, suppose that a grant is made "to such of John Smith's children as reach twenty-five." The gift would be invalid under the common law Rule. Under the cy pres approach, the court could reform the gift to read "to such of John Smith's children who reach twenty-one" and rescue the gift rather than invalidating it.

The cy pres doctrine helps resolve the incentive issues caused by the "all-or-nothing" character of the common law Rule, because a successful challenge to an interest will receive only the benefit of the reformation. Since the reformation is to approximate the intent of the grantor or testator, "the spectrum of choices is very narrow, hardly worth litigating."

The cy pres approach thus depends on being able to identify those interests that fail the basic (or revised) perpetuities Rule and to alter the terms of those interests so that they pass the perpetuities Rule. Like the wait-and-see approach, the cy pres approach weakens the basic Rule to defer more to grantor intent or an approximation thereof.

52 See infra notes 57-70 (discussing Uniform Statutory Rule Against Perpetuities).
53 Under the wait-and-see approach, for example, one would wait until an event occurred that violated the Rule and then reform the instrument. This could take decades.
54 Suppose Smith has existing children who are ten and fourteen. Clearly, those children will reach twenty-five or not within their own lives. The gift is invalid, however, because both those children could die, Smith could have a third child, and Smith might then die before this new child turned four.
55 Now Smith can serve as a measuring life, since any children (including those conceived and in utero but not born before Smith's death) will reach twenty-one (or not) within twenty-one years (plus any actual gestation period) of Smith's death.
56 Leach, supra note 22, at 1150.
D. USRAP

Proposed by the National Conference of Commissioners on Uniform State Laws in 1986, the Uniform Statutory Rule Against Perpetuities ("USRAP") provides a combination of the common law rule, a ninety year wait-and-see savings provision, a reformation power for courts to correct interests that fail, and a specific directive that "the possibility that a child will be born to an individual after the individual's death is disregarded." The USRAP approach has been widely endorsed, although some perpetuities experts have criticized it as unsound.

As with the other reforms, the USRAP allows interests that pass the common law rule to continue unaltered and affects only those interests that do not survive under the common law RAP. For those interests that do not pass the common law Rule, the USRAP combines a wait-and-see approach determined by a specific time period and the reformation power. By bringing together both the wait-and-see approach and the reformation approach to interests that fail the common law RAP, the USRAP "saves" the largest

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57 USRAP, supra note 49, at 965.
58 USRAP, supra note 49, § 1(a)(1), at 984.
59 Id. § 1(a)(2), at 984.
60 Id. § 3, at 1037.
61 Id. § 1(d), at 985. Some states have created rebuttable presumptions about fertility. See, e.g., N.Y. EST. POWERS, & TRUSTS LAW § 9-1.3(e)(1) (1992) (creating presumption that males can have child at fourteen or older and females between twelve and fifty-five). Such a presumption is likely to be easier to rebut as the new reproductive technologies (NRTs) become more common. See, e.g., David K. Kadane, Perpetuities Reform: Part One, 63 N.Y. ST. B.J. 40, 42-43 (Oct. 1991) ("No stretch of imagination is required today to envision circumstances where these presumptions could be rebutted, particularly with the help of administered hormones and fertility clinic personnel, but these developments came after [the statute was enacted]. One can speculate as to the possible impact of modern reproductive engineering.").
62 The USRAP has been endorsed by the ABA Section on Real Property, Probate and Trust Law; the American College of Probate Counsel; the Board of Governors of the American College of Real Estate Lawyers; the Joint Editorial Board for the Uniform Probate Code; and others. Ronald C. Link & Kimberly A. Licata, Perpetuities Reform in North Carolina: The Uniform Statutory Rule Against Perpetuities, Nondonative Transfers, and Honorary Trusts, 74 N.C. L. REV. 1783, 1789 (1996). See also Fellows, supra note 16, at 607 (listing endorsements).
63 See, e.g., Dukeminier, supra note 35.
64 Waggoner, supra note 22, at 572.
The costs of this increased power to save interests that would otherwise be stricken are two-fold. First, the ninety-year wait-and-see period creates substantial uncertainty for those interests that fail the common law Rule and are of uncertain vesting. As Professor Dukeminier explains, "generally, no interest can be declared void for 90 years." In many cases, the heirs will be dead and only their heirs (a second or third generation) will inherit. Second, some opponents of the USRAP argue that it will lead to an increase in dead hand control by facilitating long term trusts. Briefly, by determining the perpetuities period to be ninety years, when the "measuring lives" approach often produced shorter periods, the USRAP allows the creation of interests that vest later than they would under a wait-and-see approach built around the common law Rule's measuring lives. Donors and grantors are thus able to control the property interests they create far longer than they could under the common law Rule. Third, the reformation power allocates to courts far removed temporally from donors the task of divining donor intent and using it to craft a substitute interest.

Interestingly, the USRAP acknowledges the problem of the posthumous birth of descendants by insisting that the law close its eyes to reality. Indeed, it is ironic that the Rule, so heavily
criticized for striking interests based on implausible factual scenarios, is now being "reformed" to mandate ignoring those same factual scenarios just as they become factually plausible. Although we disagree with the specific solution adopted by the USRAP, the statute's explicit consideration of the problem is the best route to resolving the problems caused by the NRTs and shapes our solution proposed below.

E. SUMMARY

The common law Rule provides a less than completely effective means of addressing dead hand control issues but does so at the cost of technical complexity. This complexity can generally be successfully addressed by proper drafting, although it may require some modification of donors' plans to do so. The wait-and-see approaches will strike fewer interests than the common law Rule, but at the cost of allowing additional dead hand control. Cy pres rescues interests that fail, alleviating the harshness of the common law Rule's "all or nothing" approach, but it requires court intervention to validate interests that fail the Rule. The USRAP weakens the common law more than any of the other alternative reforms because it combines all of them. All three reform versions make additional tradeoffs of the policies served by the Rule for measures to mitigate its harshness. The modern trend is thus to accept weaker protection of the interests served by the Rule in exchange for greater attention to donor intent.

The Rule Against Perpetuities, in whatever form, serves several important social interests, and reform should take those interests into account. First, the Rule is a means of limiting "dead hand" control of wealth, or legal control of productive assets by the deceased former owner. It is, however, an imperfect means of doing

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70 See infra note 80 and accompanying text.
71 See, e.g., Bloom, supra note 34, at 27 (noting "agreement that perpetuities violations caused by technicalities may be avoided by competent drafting"); Waggoner, supra note 3, at 1726 (noting that requirement of initial certainty "is not an obstacle to a skilled lawyer's implementation of reasonable client objectives").
72 See Bloom, supra note 34, at 32 (noting that fixed period wait-and-see approach may "unnecessarily and undesirably extend dead hand control").
so, as it does not apply to all forms of such control.\textsuperscript{73} Second, it protects (imperfectly) against assets becoming unmarketable due to excessive temporal fractionation of ownership into uncertain future interests by striking out some future interests and so reducing the number of future interests in any given property.\textsuperscript{74} Again, the Rule is an imperfect means of doing so, as it does not apply to all future interests or all forms of property.\textsuperscript{75} Third, the Rule allows current property owners to protect incompetent, profligate, or minor potential heirs by limiting their interests in gifts of property and so prevents them from squandering the entire property. It thus balances the competing social interests of limiting dead hand control and allowing property owners to protect their heirs.\textsuperscript{76}

The Rule's protections come at a high cost, however. A violation of the Rule results in the striking of interests (except under cy pres reforms), which causes an additional problem. Most Rule experts

\textsuperscript{73} Some jurisdictions, for example, do not apply the Rule to some equitable interests. For example, South Dakota and Wisconsin allow perpetual trusts if the trustee has the power to alienate the property. S.D. CODIFIED LAWS § 43-5-4 (Michie 1997); WIS. STAT. ANN. § 700.16(3) (West 2001). The Rule is also an imperfect check because, as virtually every commentator on the Rule notes, a good lawyer can accomplish most ends without violating the Rule—or as Professor Philip Mechem noted more colorfully, “the rule doesn't conspicuously stand in the way of unsocial people with good lawyers.” Leach, supra note 22, at 1142 (quoting Mechem).

\textsuperscript{74} This concern is reduced today when the main form of such property is interests in a trust, enabling the trustee to conduct transactions concerning trust assets. See Haskell, supra note 2, at 548 (“[O]riginal purpose of the Rule was to impose a time limit on dispositive provisions that made it difficult or impossible to convey a possessory fee in land, thereby effectively removing the land from commerce.”); Waggoner, supra note 22, at 587 (noting that scholars have difficult time identifying policies of Rule).

\textsuperscript{75} English courts had a broad view of the perpetuities problem and thought that perpetuities were harmful to the economic, social, and political life of the realm. The judiciary thought that perpetuities interfered with commerce, fostered discipline problems by assuring the youth their inheritance, and allowed traitors' wealth to pass to their families rather than to be forfeited to the crown. Perpetuities, they said, “[fought] against God, for pretending[ing] to such a stability in human affairs, as the nature of them admits not of.”


\textsuperscript{76} See id. at 456 (“[T]raditionalists and reformers generally agree on the goal that perpetuities law does and should pursue: a measured restraint on alienability that concomitantly respects the desire of past, present, and future generations to do what they wish with the wealth they enjoy.”). See also Fletcher, supra note 4, at 794 (noting that Rule “controls or limits the creation of uncertainty in the ownership and enjoyment of property, though it does so with remarkable tolerance”).
agree that Rule violations are generally instances of "persons who, starting from reasonable plans for the support of their families, have run afoul of the Rule through the ignorance or oversight of the particular member of our profession to whom they have entrusted their affairs" rather than "testators and settlors who have long-term designs which press against the limits of the Rule." Striking an interest leads to the receipt of the property in question by someone else, someone to whom the grantor did not intend to convey the property. This unjustly enriches the unintended taker at the expense of the intended taker. Eliminating such unjust enrichment is thus an additional policy reason to reform the Rule in light of the NRTs.

Critics of the Rule Against Perpetuities also point to the obscurity of the Rule's implications, the near-physical impossibility of some of the events that trigger the rule, and the complexity of the common law Rule. Even the various attempts at reform have produced debates over particular provisions, suggesting that while reform of

77 Leach, supra note 4, at 722-23. The widespread use of savings clauses in wills has reduced the problem of inadvertent Rule violations in that context and shifted it to transactions involving interests such as options. The appearance of the NRTs, however, is likely to mean that savings clauses will be necessary where they were not in the past. For a definition of "savings clauses" see supra note 27.

78 See Waggoner, supra note 3, at 1757 (noting that mistake by lawyer leads to transferring property to someone other than intended beneficiary).

79 Id. at 1752. Others have noted that lawyers are "unjustly" enriched by use of cy pres to prevent this. See Bloom, supra note 34, at 46 ("Enactment of deferred cy pres legislation will add a class of unintended beneficiaries: unborn lawyers. The staggering fees Professor Leach complained about [in deferred cy pres cases] may be commonplace in deferred cy pres litigation.").

80 See, e.g., French, supra note 47, at 333 ("[N]o one disagrees with [Professor Barton Leach's] basic premise that the common law Rule goes too far in striking down reasonable dispositions because of remote and fantastical possibilities."). The original fertile octogenarian case of Jee v. Audley, 29 Eng. Rep. 1186 (Ch. 1787), is a good example of such a "remote and fantastical" possibility. See infra notes 162-63 and accompanying text (discussing Jee). Of course, the NRTs make some of these events more likely to occur and so less "remote and fantastical" while simultaneously making some previously impossible events possible, but remote and fantastical.

81 See, e.g., Haskell, supra note 2, at 548 (common law Rule has produced "massive and complex body of law dealing with this matter, which is scarcely understood by the bar"); Hess, supra note 69, at 271 (Rule "suits its task much as did the proverbial sledgehammer used to kill a fly"); Kadane, supra note 61, at 40 (Rule strikes interests that fail to "meet certain esoteric standards").
the Rule may alter its functioning, nothing short of repeal is ultimately likely to simplify perpetuities issues.\(^{82}\)

How big is this problem? The number of perpetuities opinions in American courts each year is relatively small,\(^{83}\) a possible indication that the problem is not large. Reported opinions, however, are not an adequate index of the importance of the problem. First, many court opinions are not reported.\(^{84}\) Second, perpetuities cases, when they are litigated, are often lengthy, complex, expensive, and involve multiple parties.\(^{85}\) Even a small number of cases can therefore impose substantial costs and be of great significance. Third, many cases undoubtedly settle before a final opinion is issued because of the threat of complete loss of the parties’ interest.\(^{86}\) This suggests that considering only reported cases will undercount the extent of the problem. Nonetheless, until the advent of the NRTs, perpetuities problems undoubtedly have been less pressing than many other legal problems and so have received only occasional attention from state legislatures. The appropriateness of the various reforms has been the subject of intense debate among a few academics and lawyers but has generated little interest on the part of the bar at large and the general public. The widespread impact of the NRTs, however, threatens to make this inattention potentially costly by sharply increasing the number of interests that fall afoul of the Rule.

\(^{82}\) See Bloom, supra note 34 (summarizing debates over various approaches). Specific proposals have also provoked heated debate. See, e.g., Kadane, supra note 61, at 44-46 (criticizing New York reforms as overly complex and violative of grantor’s intent).

\(^{83}\) See Fellows, supra note 16, at 597 (noting that there were sixteen reported cases dealing with perpetuities between 1984 and 1989); Waggoner, supra note 22, at 580 n.23 (stating that “number of reported appellate cases raising perpetuity claims is not large” but noting that this may not be adequate measure of problem); Thomas L. Waterbury, Some Further Thoughts on Perpetuities Reform, 42 MINN. L. REV. 41, 71 n.109 (1957) (finding “about 100” perpetuities cases in the U.S. between 1945 and 1957).


\(^{85}\) See Leach, supra note 22, at 1131.

\(^{86}\) See id. at 1132 (“[I]f you lose, you lose all. It is the rarely courageous lawyer who will recommend to an otherwise penniless remainderman that he (usually she) fight it out to the end instead of taking a fifty-fifty offer.”).
II. NEW REPRODUCTIVE TECHNOLOGIES

All forms of the Rule Against Perpetuities depend on the Rule’s traditional common law logical possibility test for at least part of their analysis. Under this approach, any living individual is assumed to be capable of producing children, even at an advanced age. Thus, many of the circumstances that provoke the most criticism of the common law Rule turn on improbable pregnancies among octogenarians and infants.87

The NRTs greatly extend legal problems since they make such pregnancies not only theoretically possible but actually feasible. This has two consequences. First, NRTs might lead to more interests failing under reformed rules like the wait-and-see approach. Some prior analyses of the Rule’s faults that depend on “[t]he most outrageous cases” being “truly impossible possibilities,” such as “the possibility that a woman past the menopause will bear a child,” are therefore now incorrect.88 Post-menopausal women are now capable of bearing children in some circumstances.89 Much criticism of the famous case of Jee v. Audley, which relied upon such an “impossibility” to strike interests,90 is thus no longer valid. Most importantly, the NRTs offer the opportunity for post-mortem conception—and that possibility threatens to make void virtually every future interest involving children and other descendants subject to the Rule. Second, the “actual period of gestation” provision included within the Rule’s limits, so as to protect gifts to children conceived but not yet born at the time of their parents’ death, could be extended indefinitely for frozen embryos in storage, thus creating uncertainty about title. In this section we describe the NRTs.

87 For example, Jee v. Audley turned on the possibility of a pregnancy by a woman more than seventy years old in 1787. 29 Eng. Rep. 1186 (Ch. 1787). See infra notes 162-63 and accompanying text (discussing Jee). The inverse case, of a fertile infant, was discussed by W. Barton Leach in his article, Perpetuities in the Atomic Age: The Sperm Bank and the Fertile Decedent, 48 A.B.A. J. 942, 942 (1962).
88 Waterbury, supra note 83, at 55 & n.53.
90 29 Eng. Rep. 1186 (Ch. 1787). See infra notes 162-63 and accompanying text.
91 See infra notes 213-15 and accompanying text.
A. CRYOPRESERVATION OF SEMEN

Cryopreservation is the preservation of biological material, such as semen, at very low temperatures. Semen can be preserved by freezing for an unlimited amount of time, while still ensuring that sperm remain viable after thawing. Consequently, a man might father a child years, or even decades, after his death. While some men have semen frozen for purposes of donation to a stranger who wishes to become pregnant, others freeze semen for their own use at a later time. This may be done in anticipation of fertility-jeopardizing medical treatment or to insure that a usable sample is available at the appropriate point during an assisted reproductive cycle. Cryopreservation may be sought for a variety of other personal reasons as well, including reproduction after death.

Posthumous reproduction can be achieved even in cases where a man did not store semen prior to his death. Contemporary medical technology makes it possible for physicians to retrieve sperm from a deceased male within twenty-four hours of his death. In the United States, an increasing number of requests for postmortem sperm retrieval are being made by wives, other family members, fiancées, and friends.

The issue of posthumous reproduction by a man who had preserved semen samples was the subject of litigation in the well-known case of Hecht v. Superior Court of Los Angeles County. Prior to committing suicide in October of 1991, William E. Kane deposited fifteen vials of semen at a semen bank in Los Angeles.

94 TABER'S CYCLOPEDIC MEDICAL DICTIONARY, supra note 92, at 435.
95 TASK FORCE, supra note 93, at 289.
96 Id. at 289-90.
98 Id. at 2155-56. The authors conducted a study that revealed a total of 82 requests made at 40 facilities in 22 different states in the U.S. between 1980 and 1995. More than half of the reported requests (43) were made during 1994 and 1995. Of the requests, 25 were honored at 14 facilities in 12 separate states. Id.
100 Id.
He stated in both his will and his "Specimen Storage Agreement" that, in the event of his death, he wished that his semen be released to his partner, Deborah Hecht, or her personal physician so that Hecht could become pregnant with his child or children.101 After Kane's death, his adult children from a prior marriage petitioned the court for an order to destroy his stored semen.102 Following several years of litigation, Hecht ultimately obtained release of all the vials of semen.103 Several courts have also been called upon to grapple with the inheritance rights of children conceived from their dead father's frozen sperm. In 2002, the Supreme Judicial Court of Massachusetts considered the inheritance rights of children conceived from their dead father's frozen sperm.104 The court ruled that the children could inherit if their mother proved the descendant's paternity and established that he had agreed to reproduce posthumously and to support children that had been conceived from his sperm.105 By contrast, that same year, a federal district court in Arizona held that, under Arizona intestacy laws, children conceived after their father's death did not "survive" him and could not inherit under state law.106 Most probably, these are only the earliest of many similar cases that will come before the courts in future years.107

101 Id. at 276-77.
102 Id. at 278-79.
103 Kane v. Superior Court, 44 Cal. Rptr. 2d 578, 584 (Cal. Ct. App. 1995); Hecht v. Superior Court, 59 Cal. Rptr. 2d 222, 228 (Cal. Ct. App. 1996) [hereinafter Hecht II]. The court of appeals initially found that the decedent had a property interest in his stored sperm and that the semen was part of his estate, over which the probate court had jurisdiction. Hecht I, 20 Cal. Rptr. 2d at 283. The court further found that California's public policy did not prohibit the artificial insemination of an unmarried woman or the use of frozen sperm after the death of the father. Id. at 287, 289. Ms. Hecht was initially awarded three vials of sperm in accordance with a settlement agreement the parties had signed prior to the litigation regarding the stored semen, which stated that Hecht would receive 20% of the estate's assets. Kane, 44 Cal. Rptr. 2d at 580. The court of appeals ultimately decided that the decedent's sperm was neither an asset of the estate nor subject to division through a settlement agreement and awarded Hecht the remaining twelve vials. Hecht II, 59 Cal. Rptr. 2d at 226-28.
105 Id. at 272.
107 The Social Security Administration ("SSA") has also grappled with the issue. A case out of Louisiana involved Social Security survivor benefits for a child that was conceived
B. CRYOPRESERVATION OF EMBRYOS

The first pregnancy resulting from a frozen embryo was reported in Australia in 1983. Today, approximately 400,000 frozen embryos exist in storage facilities in the United States alone.

Cryopreservation of embryos involves a complex, multi-step process. First, a sequence of drugs is used to induce the maturation of multiple follicles so that several eggs, or oocytes, can be retrieved from the woman. Just prior to ovulation, the eggs are removed in a minor surgical procedure called ultrasound-guided transvaginal aspiration. While an ultrasound transducer provides images of the reproductive organs, a needle is inserted through the vaginal wall and into a developed ovarian follicle. The fluid inside the follicle is withdrawn together with the egg it contains, and the

through artificial insemination after her father's death. Girl Conceived after Dad Died Gets Benefits; Social Security Ruling Applies Only to This Case, CHI. TRIB., Mar. 12, 1996, at 12. The Social Security Act defines the term "child," in relevant part as "the child or legally adopted child of an individual." 42 U.S.C. § 416(e)(1) (2000). SSA initially maintained that the child was not eligible for benefits because Louisiana law did not recognize children conceived after their fathers' deaths as heirs. Joseph Wharton, Social Security Case Settled, 82 A.B.A. J. 40, 40 (May 1996). State laws concerning inheritance rights govern such questions. Id. The Social Security Act provides that "[i]n determining whether an applicant is the child . . . of a fully or currently insured individual . . . the Commissioner of Social Security shall apply such law as would be applied in determining the devolution of intestate personal property by the courts of the State in which such insured individual is domiciled . . . ." 42 U.S.C. § 416(h)(2)(A) (2000). A previous case involved an Arizona child, but since Arizona law recognized a child conceived posthumously through artificial insemination as the deceased father's heir, there was no dispute regarding the child's right to Social Security survivor benefits. Girl Conceived, supra, at 12. An administrative law judge later found that the Louisiana child was entitled to benefits, but a Social Security appeals panel overturned the ruling. Id. The child's mother filed suit in federal court, inducing SSA to reconsider its position. Wharton, supra, at 40. Ultimately, SSA decided to pay the child $700 a month in benefits but emphasized that the decision applied only to the case before it and that broad changes in the law might be needed as a consequence of new reproductive technologies. Girl Conceived, supra, at 12.

Alan Trounson & Linda Mohr, Human Pregnancy Following Cryopreservation, Thawing and Transfer of an Eight-Cell Embryo, 305 NATURE 707, 707 (1983). The pregnancy, however, ended unsuccessfully when the fetus was stillborn during the twenty-fourth week of gestation. Id.


TASK FORCE, supra note 93, at 53.

Id. at 54.

Id.
procedure is repeated for each follicle, utilizing the initial vaginal puncture.\textsuperscript{113}

After retrieval, eggs are examined in the laboratory to determine their level of maturity and optimal time for fertilization.\textsuperscript{114} The oocytes are then placed in a tissue-culture medium where they remain undisturbed for two to twenty-four hours prior to fertilization.\textsuperscript{115}

Semen is obtained from the male partner and is processed so that a concentrated sample can be introduced into individual culture dishes, each containing medium and one egg.\textsuperscript{116} After a day, the oocyte is examined to determine whether fertilization has occurred, and, if it has, the cell is an embryo, and it is stored in a nutrient culture medium that is placed in a warm incubator.\textsuperscript{117}

Embryos are frozen on the second or third day after oocyte retrieval, when they have divided into four to eight cells.\textsuperscript{118} Prior to freezing, the cells' liquid interior is replaced with a cryoprotectant solution so that the embryos are protected from the formation of damaging ice crystals.\textsuperscript{119} Embryos are then placed in straws that contain a very small amount of fluid and are slowly frozen, using computerized machines.\textsuperscript{120} The straws are stored in canisters that are kept frozen with liquid nitrogen.\textsuperscript{121} Prior to implantation, the storage straws are gradually warmed, the cryoprotectants are removed, and the embryos are cultured for about a day.\textsuperscript{122}

By some estimates, contemporary technology would allow for the safe storage of embryos for fifty years or longer.\textsuperscript{123} Consequently,

\textsuperscript{113} Id.
\textsuperscript{114} Id. at 56.
\textsuperscript{115} Id.
\textsuperscript{116} Id.
\textsuperscript{117} Id.
\textsuperscript{118} Id. at 57.
\textsuperscript{119} Id. at 81. Most storage facilities currently use propanediol as a cryoprotectant.


\textsuperscript{120} TASK FORCE, supra note 93, at 81.
\textsuperscript{121} Id.
\textsuperscript{122} Id.

\textsuperscript{123} Peter R. Brinsden et al., Frozen Embryos: Decision Time in the U.K., 10 HUMAN REPRODUCTION 3083, 3084 (1995). In the United States, many facilities specify a two- to five-year storage period, providing the couple an option to extend the time period with mutual written consent. TASK FORCE, supra note 93, at 293. In Australia, many programs impose a ten-year limit on embryo storage, after which a couple must agree to the disposition of any
children could be born many decades after one or both of their genetic parents died.

C. CRYOPRESERVATION OF OVUM

Cryopreservation of mature, unfertilized eggs is not standard clinical practice at the present time. The mature egg's high liquid content and size make it particularly difficult to freeze, and sperm have generally proven unable to penetrate previously frozen and thawed oocytes.

Nevertheless, ovum cryopreservation is a developing reproductive technology that has already proven successful in isolated instances. At one clinic in Italy, four of twelve frozen oocytes survived thawing, two were successfully fertilized, and one developed into a healthy baby after the embryo was transferred to the mother's womb. In the United States, a fertility clinic in Georgia also achieved success utilizing frozen oocytes. Sixteen of twenty-three eggs that had been frozen for twenty-five months appeared undamaged upon thawing, eleven were fertilized, four were transferred to the mother, and a twin pregnancy resulted.

unused embryos, or the matter is decided by an institutional ethics committee. Douglas M. Saunders et al., Frozen Embryos: Too Cold to Touch? The Dilemma Ten Years On, 10 HUMAN REPRODUCTION 3081, 3081 (1995). In England, a 1991 law dictated a five-year limit on embryo storage and prohibited cryopreservation of embryos unless couples agreed in advance to the destruction of unused embryos after this period. Brinsden, supra at 3083. See R.G. Edwards & Helen K. Beard, Destruction of Cryopreserved Embryos: UK Law Dictated the Destruction of 3000 Cryopreserved Human Embryos, 12 HUMAN REPRODUCTION 3, 3 (1997) (stating that because of Act, 3000 embryos would be destroyed unless parents made formal request for extension). In May of 1996, the law was amended to allow couples who created embryos to obtain a five-year extension of the storage period, but British fertility clinics nonetheless destroyed approximately 3,300 embryos for which no one requested extended cryopreservation. TASK FORCE, supra note 93, at 293; Youssef M. Ibrahim, Ethical Furoir Erupts in Britain: Should Embryos Be Destroyed?, N.Y. TIMES, Aug. 1, 1996, at A1.

See TASK FORCE, supra note 93, at 83 (noting difficulties encountered in cryopreservation of mature eggs).

124 Id.
126 SHER ET AL., supra note 119, at 171.
126 Id. at A26. The procedure was facilitated by a new technique that allows doctors to inject sperm directly into the thawed eggs. Id.
Research is also being conducted regarding postmortem retrieval of immature oocytes or entire sections of an ovary from a deceased woman.\textsuperscript{136} Some predict that in the future, ovum preservation combined with semen freezing might replace the cryopreservation of embryos.\textsuperscript{131} After fertilization, the embryos could be implanted either in the egg donor or in another woman. Consequently, the freezing of eggs, like frozen embryo storage, could lead to the birth of children long after one or both genetic parents are dead.

D. CLONING

Cloning is yet another reproductive technology that could enable individuals to reproduce posthumously. Posthumous cloning would be achieved by inserting the nucleus of a preserved somatic cell\textsuperscript{132} from a deceased individual into an egg that has had its nucleus removed.\textsuperscript{133} The egg would then develop into an embryo whose genetic makeup would be nearly identical to that of the deceased.\textsuperscript{134}

Cloning is the most controversial of the new reproductive technologies. In 1997, two Scottish researchers, Ian Wilmut and Keith Campbell, cloned a sheep.\textsuperscript{135} Since then, researchers have refined cloning techniques, and in January 2002, Texas A & M University announced the birth of the first cloned household pet, a cat.\textsuperscript{136} Scientists have also begun experimenting with the cloning of

\textsuperscript{130} TASK FORCE, supra note 93, at 265 n.207.
\textsuperscript{131} SHER ET AL., supra note 119, at 174. Freezing sperm and eggs separately might be preferable to freezing embryos because of moral and ethical considerations. Currently, doctors, donors, and storage facilities often face difficult decisions regarding the destruction of stored embryos that are deemed by some to constitute human lives. The destruction of cryopreserved gametes that have not been joined to form an embryo does not involve the same ethical dilemmas. Id. at 173.
\textsuperscript{132} A somatic cell is a cell other than a sperm or an egg. TABER'S CYCLOPEDIC MEDICAL DICTIONARY, supra note 92, at 1704.
\textsuperscript{133} TASK FORCE, supra note 93, at 390-91.
\textsuperscript{134} Id. While almost all DNA is contained in the cell's nucleus, some is contained in the cytoplasm, the cell matter outside the nucleus. TABER'S CYCLOPEDIC MEDICAL DICTIONARY, supra note 92, at 452. The cytoplasmic DNA would not be transferred to the embryo. TASK FORCE, supra note 93, at 390.
\textsuperscript{135} See Ian Wilmot et al., Viable Offspring Derived from Fetal and Adult Mammalian Cells, 385 NATURE 810, 810 (1997) (explaining science behind cloning sheep).
\textsuperscript{136} Carol Monaghan, Cloning Kitty: A Copycat of a Different Stripe, CHI. TRIB., Feb. 26,
early-stage human embryos. Although human cloning has proven controversial, and its ultimate success in producing a living being has yet to be demonstrated, Congress and many state legislatures have repeatedly considered bans on human cloning. Laws prohibiting the creation of human beings through cloning have been enacted in California, Louisiana, Michigan, and Rhode Island. In addition, President William Clinton issued an executive directive banning federal funding for human cloning research, a ban President George W. Bush supported after taking office.

Despite the early outcry against the idea of human cloning, cloning may well become an accepted reproductive technology in the future. Indeed, some commentators view it as inevitable. Cloning would allow either a male or a female of any age to reproduce by preserving some body tissue. The nucleus from one of the individual's somatic cells would later be transferred to an


See Cibelli, supra note 8, at 45. The scientists hope to develop human embryos for therapeutic rather than reproductive purposes.


Argentina, Australia, Belgium, Canada, Denmark, France, Germany, Israel, Japan, Norway, Peru, Slovakia, South Korea, Spain, Sweden, Switzerland, and the United Kingdom either have laws against human cloning or have announced plans to pass such laws. See F. JAMES SENSENBRENNER, HUMAN CLONING PROHIBITION ACT OF 2003, H.R. REP. NO. 108-18, at 3 (2003) (discussing countries and organizations that have banned or have called to ban cloning of human beings).

TASKFORCE, supra note 93, at 395-96. While some commentators believe that human cloning would be unethical in all circumstances, others feel that it would be ethically acceptable so long as the procedure was safe. Id.

See, e.g., Robin McKie, Dolly Dies—But Human Cloning Will Still Happen, OBSERVER, Feb. 16, 2003 ("It now seems inevitable that human clones will be born somewhere in the world,' said cloning expert Dr. Patrick Dixon."). available at http://observer.guardian.co.uk/uk_news/story/0,6903,896566,00.html.

enucleated egg cell to form an embryo. The somatic cell provider may be unrelated to the egg donor and the gestational mother, and thus three different individuals may biologically contribute to the birth of the child. Cloning could occur long after the somatic cell donor and the egg donor die and is therefore an additional technology that could be used for posthumous reproduction.

E. SUMMARY

Advances in reproductive technology are an established part of the medical landscape. No longer merely the subject of speculative fiction, new reproductive technologies become more widely available each year. As these technologies become widespread, the law will need to recognize their existence and consider their impact on existing legal rules and institutions. Much as family law earlier evolved to include children who were adopted or born out of wedlock within the legal definition of children, so too will property law need to address the reality of posthumously conceived children. Since at least some of these children will be “planned” posthumous births, as in the Hecht case discussed above, simply excluding all such children as heirs by definition, as was done with those born out of wedlock in earlier times, is unacceptable. We assume, therefore, that posthumous conception and birth of children is inevitable and that such children will ultimately have to be treated as the legal children of their genetic parents, at least where the children’s conception is planned.

147 TASK FORCE, supra note 93, at 391.
148 See Andrews & Elster, supra note 139, at 64.
150 See supra notes 99-103 and accompanying text.
151 See Krause, supra note 149, at 477-82 (discussing legislation that disfavored illegitimate children).
III. ACCOMMODATING THE NEW REPRODUCTIVE TECHNOLOGIES

Perhaps not surprisingly, given that the law has not quite resolved some of the legal issues surrounding "old fashioned" artificial insemination, the NRTs pose significant problems for all forms of the Rule. As perpetuities expert Professor Robert Fletcher noted, these technologies, "if recognized by the Rule, would create havoc with its mechanics." Fletcher quickly dismissed the possibility of such recognition in 1988, noting that "as far as we know, no court has allowed a challenge posing delayed or 'test-tube' births, and there seems little likelihood that any will." However, by changing the biology of reproduction significantly, the NRTs call into question even the most fundamental analysis under the Rule. We consider here only the most straightforward problem introduced by the NRTs: posthumously-conceived children. Complications created by a child having more than two parents, for example, are ignored.

A. THE BASIC PROBLEM

Consider the following bequest and the common law RAP.

*Example 1:* T leaves Blackacre "to my grandchildren who shall reach the age of 21."

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153 The NRTs require accommodation by the law in other areas as well: Are posthumously conceived children legitimate? Who gets to decide if the preserved genetic material can be used to procreate? See, e.g., E. Donald Shapiro & Benedene Sonnenblick, *The Widow and the Sperm: The Law of Post-Mortem Insemination*, 1 J. Health L. 229, 229 (1987) (discussing legal issues surrounding posthumous conception).

154 Fletcher, supra note 4, at 803.

155 Id.

156 See, e.g., Dukeminier, supra note 3, at 1663 n.44 (ruling out considering sexual partners—present or future—because partners "cannot beget any children of A after A's death" and ruling out, without explanation, use of NRTs).

157 E. Donald Shapiro, *New Innovations in Conception and Their Effects Upon Our Law and Morality*, 31 N.Y.L. Sch. L. Rev. 37, 54 (1986) (noting possibility of children having up to five parents through use of NRTs: "an egg donor, a sperm donor, a woman who provides a womb for all or part of gestation, and the couple who rears the child").
In Professor Barton Leach's classic article *Perpetuities in a Nutshell*, this bequest is given as an example of an interest valid under the common law Rule. The gift is valid, according to Professor Leach, "since all grandchildren must be born in the lives of the testator's (T's) children and these must perforce be lives in being at T's death."\(^{158}\) Suppose, however, that T has left cryopreserved semen in a sperm bank.\(^{159}\) Since it is logically possible that T will then have children who are born years later, T's children can no longer serve as the measuring lives. Recall, the common law Rule is a rule of logical possibility—as the "fertile octogenarian" problem demonstrates,\(^{160}\) the technology need not even exist to make the birth of a child realistically possible for the Rule to strike down an interest.\(^{161}\) In the (in)famous 1787 case of *Jee v. Audley*,\(^{162}\) Sir Lord Kenyon rejected the claim that seventy year-old John and Elizabeth Jee could be presumed not to be capable of further offspring, noting that if such a presumption could be made "in one case it may in another, and it is a very dangerous experiment, and introductive of the greatest inconvenience to give a latitude to such sort of conjecture."\(^{163}\)

Despite the long history of convoluted and even bizarre factual analyses relied on by courts in applying the Rule, one might argue that the problem of preserved semen, eggs, and embryos could be dealt with in most cases by a court's finding that no cryopreserved semen, eggs, or embryos existed for a particular testator. However, it will be difficult for parties to prove conclusively that a particular testator did not leave cryopreserved genetic material or embryos and thereby to persuade a court to reject application of the Rule to a given interest.\(^{164}\) For example, donating semen may not generate

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\(^{159}\) There are significant legal questions relating to whether frozen sperm deposited at a sperm bank is inheritable or devisable. Brashier, supra note 152, at 210-11.

\(^{160}\) See infra notes 169-70 and accompanying text.

\(^{161}\) Professor Robert Lynn argued in 1964 that "the possibility of a posthumous child conceived by artificial insemination after the death of the donor husband is a fantastic one, judged by ordinary standards" and therefore should not be a basis for challenging an interest. Robert J. Lynn, *Raising the Perpetuities Question: Conception, Adoption, "Wait and See," and Cy Pres*, 17 VAND. L. REV. 1391, 1396 (1964). The possibility is certainly less fantastic today.

\(^{162}\) 29 Eng. Rep. 1186 (Ch. 1787).

\(^{163}\) Id. at 1187.

\(^{164}\) Lest the reader think that courts are going to pay close attention to whether or not
a medical record that would be found by a standard medical history search. Similarly, individuals might have embryos stored in another country where they previously lived. Thus, proving the negative proposition that the deceased never arranged for the cryopreservation of genetic material is virtually impossible. Consequently, courts may have to strike many more interests than if the Rule required positive proof of cryopreservation. Indeed, while the use of this technology is relatively rare in the general population at this time, it might become widespread among the wealthy in a relatively short time. Even as an empirical matter, therefore, courts may not long be justified in ignoring the possibility of posthumously conceived children. The first class of problems presented by the NRTs is, therefore, that some interests that previously passed the common law Rule (and hence the other versions of the Rule which incorporate it as well) no longer do so once the NRTs are considered.

B. OPPORTUNITIES FOR FRAUD

The second class of problems created by the NRTs is that there are enhanced opportunities for fraud and other forms of unethical behavior that affect the disposition of testators' estates. Even if courts were willing to assume that a particular testator had not left cryopreserved genetic material behind, in the absence of conclusive proof that he or she had, this would not eliminate the problem. Consider the following hypothetical:

people actually leave preserved genetic material behind, consider the fertile octogenarian case, Jee v. Audley, 29 Eng. Rep. 1186. Only one American court had rejected the Jee presumption of fertility even at an advanced age as of 1983, according to Professor Waggoner's research, and we have found none since. Waggoner, supra note 3, at 1729-30. Professor Waggoner concluded that making the presumption rebuttable would be insufficient to solve the problem because it could seldom be sufficiently rebutted to save a perpetuity violation as long as the requirement of initial certainty remains the test for validity. The most that could be established in most cases would be that it was unlikely, indeed perhaps even extremely unlikely, that the person in question could have more children. Id. at 1731. Although Waggoner attributes this to the possibility of adoption, posthumously conceived children present the same issues. Id. at 1731.
Example 2: T, a wealthy man, falls ill without having provided for any cryopreserved semen. He dies and is survived by his second wife (W2) and two children from a prior marriage (C1 and C2), and leaves a will that makes the following bequests:

1. I leave Blackacre to my wife, W2, for life and then to my children.
2. I leave $1,000,000 to be divided equally among all my children.
3. I leave all the rest, residue and remainder of my estate to my wife, W2.

W2 is at T's side during his last moments and, shortly before he dies, W2 instructs a physician in her employ to collect semen from T and cryopreserve it.

Even if a court were willing to assume that T left no cryopreserved semen without conclusive proof, and even if T had never showed any interest in cryopreserving his semen, W2 will be able to prove conclusively that cryopreserved semen existed at the time the interests were created. The existence of the cryopreserved semen would mean that the bequest of the remainder to C1 and C2 would be stricken, and the remainder would then pass under clause 3 of the will and go to W2. In short, a powerful

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166 The semen could also be collected after T's death. See supra notes 97-98 and accompanying text. However, this could pose problems because the common law Rule requires evaluating the possibilities at the time the interest is created. Fletcher, supra note 4, at 793 (noting that Rule tests interests at effective date of instrument creating interest). In the case of a will, this would be the time of the testator's death, and by definition, no children could have been conceived using posthumously collected semen before the testator's death. In the case of a bequest by T "to all of A's children," one which would be otherwise valid under the common law Rule, posthumous collection of A's semen would have to be considered, and even more bequests would therefore be invalid.

165 C1 and C2 cannot, therefore, successfully argue (at least without obtaining a significant judicial modification of the Rule) that it is not possible that a child will be born to T and W2 at some time in the future because C1 and C2 will sue to obtain possession of the cryopreserved semen and then destroy it and so foreclose the possibility of W2 making use of the semen. It is possible that W2 will prevail in such a suit and, as a rule of logical possibility, therefore, the Rule should then apply.

167 C1 and C2's share of the $1,000,000 under clause 2 could also be in trouble in a jurisdiction that did not apply the "rule of convenience" to class gifts, since the class of potential takers would now be open. This is so because in a gift to a class, if the interest of one member of the class does not vest, none of the interests are vested for purposes of the
economic incentive would exist for W2 to ensure that T's semen was collected and cryopreserved, even if she never intended to bear children using the semen. By her action, W2 would be able to alter significantly the disposition of T's estate without his consent, a troubling development.168

In this example, T could take some steps to protect his estate plan. If T replaced the class gift of the remainder and the $1,000,000 with specific bequests to named children, he would avoid the problem. Such a course of action sacrifices the advantages of class gifts (i.e., T must amend his will after each child is born or risk leaving a child unprovided for by dying before amending the will to include that child.) but, for individuals with large estates such as T, this may not represent a significant inconvenience. The issue is not if one can write a will that gets around the problem, however, but whether people writing wills will in fact do so. Given the elementary perpetuities mistakes that already occur when writing wills, adding an additional contingency to consider is likely to produce additional errors.

Moreover, the NRTs also increase the chance of fraud. W2 in Example 2, for example, might collude with a lawyer to ensure that the will is written as in the example rather than without the class gift language. Since even lawyers sometimes fail to appreciate perpetuities issues, the chance of T appreciating the difference between a class gift and a gift to named heirs, especially when shown a will that appears to carry out his wishes exactly, are relatively slight. Thus, even in a straightforward case, such as this example, the NRTs pose a significant problem for the common law Rule.

C. REDUCING THE SET OF VALID INTERESTS

The third class of problems created by the NRTs is that they reduce the set of possible and/or desirable solutions available to

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168 Lynn suggests that courts simply refuse to recognize such children in similar circumstances. Lynn, supra note 161, at 1396.
either courts or drafters of instruments to solve other perpetuities problems. For example, the existence of the NRTs transforms many previously solvable perpetuities problems into versions of the "fertile octogenarian" type. Professor Leach set out the classic example of this problem in his 1938 article as follows:

Example 3: "T has a widowed sister, A, aged 80. He leaves property in trust to pay the income to A for life, then to pay the income to the children of A for their lives, then to pay the principal to the children of such children."169

The gift of the principal fails under the common law Rule because "the children of A include after-born children and A is conclusively presumed to be capable of having children until death."170

The fertile octogenarian "problem" is, at least in part, a problem of drafting rather than simply a problem of interpretation. In Example 3 above, T could simply have made the final portion of the gift to "the children of such children alive at the time of creation of the interest."171 The italicized words would save the gift, at the cost of excluding A's grandchildren born of A's afterborn children.

Without the NRTs, it seems safe to conclude, as some have, that it would "be the rare transferor who would protest that the change thwarts the intent."172 This is particularly true because without the NRTs, the grandchildren of A born of A's afterborn children are unlikely to exist. With the NRTs, however, the size of this class of potential grandchildren is expanded, making such drafting solutions at least marginally less desirable to transferors. The existence of the NRTs means that not only are octogenarians of both sexes presumed fertile, some of them actually are fertile. In addition, NRTs have the potential to make many deceased individuals fertile, or at least more likely to be fertile than a female octogenarian in 1938 or 1787 was.173

169 Leach, supra note 158, at 643.
170 Id. Leach calls this result plainly silly. Id.
171 See Kadane, supra note 61, at 42 (suggesting such language).
172 Id.
173 There is a further subset of the fertile octogenarian problem: the "precocious toddler,"
One solution to the fertile octogenarian problem generally is the adoption of a constructional preference for validity: "[W]here [an instrument] is fairly susceptible to two or more constructions, one of which causes a Rule violation and the other of which does not—the construction that does not result in a Rule violation should be adopted." This principle can be used in fertile octogenarian cases to support a holding by a court that the possibility of future children being born to or adopted by the person in question was so remote that the transferor never contemplated it and so did not intend to include such children in the class gift language even if they ultimately materialized. So construed, the requirement of initial certainty is met, and the interest is valid.

The problem with this solution is that the NRTs increase the probability of future children, making it less likely that the possibility of future children is indeed remote. Not only is it more likely (at least marginally) that any given individual will have more children in the future as the NRTs become available, but the NRTs also make it more difficult for third parties to evaluate how likely any individual is to have a child in the future by removing the most easily independently observed proxy for child bearing—age—as a means of excluding future children. John and Elizabeth Jee might not have been capable of actually having more children barring a miracle in 1787; today, their chances would be markedly greater.

in which young children are also presumed capable of reproduction. Leach, supra note 34, at 992 (citing Re Gaite's Will Trusts, 1 All E.R. 459 (1949)); Leach, supra note 4, at 732-33 (discussing same case). Cloning, at least, makes this more likely. See, e.g., Brian Alexander, (You)2, WIRED (Feb. 2001), available at http://www.wired.com/wired/archive/9/02/projectx.html (describing potential attempts by parents to recreate dead child through cloning).

174 Waggoner, supra note 3, at 1732.

175 Id. at 1733. See also LYNN, supra note 22, at 67 (arguing "'children whenever born to B [A's widow] irrespective of the time of conception' is not a construction within the presumed intention of the testator in the ordinary case, and should be rejected"). Notably, Lynn does not cite any evidence to support his claim, which was undoubtedly true in 1966 but is becoming less so as the NRTs become more common.
D. INADVERTENT VIOLATIONS

The fourth class of problems created by the NRTs is that they increase the number of inadvertent violations of the Rule: "A conspicuous feature of the common law rule . . . is the ease with which it can be violated unwittingly. Conversely, as we have seen, a draftsman who is wise in the ways of the rule can not only stay within permitted bounds, but manipulate those bounds to a considerable degree." The Rule is thus more likely to harm the client of the inexperienced practitioner than the client attempting to exercise dead hand control with the aid of a sophisticated lawyer. The preposterousness of the probabilities under which the NRTs lead to invalidity means these conditions are unlikely to occur to nonspecialists and are unlikely to be remedied by careful drafting of wills and other instruments.

As these examples illustrate, the existence of NRTs can result in many interests being vulnerable to challenges under any of the versions of the Rule in force today. Reform of the Rule to address these problems is therefore necessary.

E. INADEQUACIES OF THE CURRENT ALTERNATIVES

The three major types of reform of the common law Rule do not resolve the problems created by the NRTs for the common law Rule. The wait-and-see reform is dependent upon the common law Rule, as its second step applies only when an interest fails the common law Rule. While the wait-and-see Rule saves some interests that fail the common law Rule, it does not alter which

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176 Waterbury, supra note 83, at 58.
177 But see Kathleen R. Guzman, Property, Progeny, Body Part: Assisted Reproduction and the Transfer of Wealth, 31 U.C. Davis L. Rev. 193, 221-22 (1997) ("[E]xtending [wait-and-see and cy pres] to assisted reproduction requires little stretch."). There are many other questions raised by the NRTs. We have been describing voluntary gifts and bequests, but at least one commentator has suggested that a sperm donor's estate might have mandatory obligations toward posthumously conceived children. Brasher, supra note 152, at 211-12. Resolution of this problem is linked to the issues we raise, since it would be hard to reconcile an inconsistent approach that, for example, held that voluntary gifts to children conceived before death were void because a posthumously conceived hypothetical child might share it, with a rule that posthumously conceived children must inherit through intestacy and forced share laws.
interests pass the initial common law Rule test and so does not solve the problems caused by the NRTs for the common law Rule. For those interests it saves, the wait-and-see Rule requires actually waiting out a period up to lives in being plus twenty-one years to learn if the interest has actually vested. Such a period could amount to one hundred years or more. The fact that an increased number of interests fail the common law Rule means that more interests will be in legal limbo during the potentially lengthy waiting period designated by the wait-and-see Rule’s second step.

As NRTs become common enough to be understood by courts, their impact will be to expand the number of interests subject to the second step. The NRTs also diminish the utility of the wait-and-see reform because they increase the number of instances in which it is necessary to actually wait and see. Consider the following:

Example 4: A devises Blackacre “to B for life, remainder to that child born to (not adopted by) B who first attains age 25,” where B is a woman who survives A, is childless, and is incapable of conceiving and bearing a child.\textsuperscript{178}

Without considering the NRTs, Prof. Robert Lynn analyzed this devise under a wait-and-see Rule and concluded that “a declaration of failure of the contingent remainder [in B’s child] is permissible on A’s death.”\textsuperscript{179} As Prof. Lynn acknowledged in a footnote to his analysis, however, “[a]doption, freezing sperm, \textit{in vitro} fertilization, and surrogate motherhood have complicated” the law.\textsuperscript{180} Although Professor Lynn resolved the issue by assuming the problem away, the existence of the NRTs at least reduces the number of cases in which a factual determination that conception is impossible can be reached, thus making the need to wait and see more prevalent. The structure of the wait-and-see Rule will thus lead to considerable uncertainty over the validity of these interests during the waiting period.

\textsuperscript{178} Example taken from Lynn, \textit{supra} note 34, at 237.

\textsuperscript{179} Lynn, \textit{supra} note 34, at 237.

\textsuperscript{180} Id. at 237 n.42.
Moreover, there is an important problem with the wait-and-see approach that is aggravated by the NRTs. Recall that the common law Rule applies as a matter of logic. If an interest fails the common law Rule because of a potential "unborn widow"\textsuperscript{181} or afterborn child, the wait-and-see Rule simply requires waiting to see whether the interest actually vests within the perpetuities period. In many cases, this is sufficient to deal with low probability events. In some cases, however, identifying the measuring lives for purposes of determining how long to wait is a problem.

In general, wait-and-see Rules require either that the measuring lives have a reasonable relationship to the future interest in question or a causal relationship to the vesting or failure of the interest.\textsuperscript{182} As Professor Paul Haskell has noted, however, these attempts at clarification still leave substantial uncertainty about just who the measuring lives are.\textsuperscript{183} The NRTs complicate this analysis further by making possible additional births after the death of individuals involved. Consider this example provided by Haskell:

\begin{quote}
Example 5: "Assume testator bequeaths $100,000 to the grandchildren of A who reach age twenty-one. At testator's death, A, two children of A, and three grandchildren of A are living, but no grandchild has reached twenty-one."\textsuperscript{184}
\end{quote}

Haskell notes that interests of the grandchildren are void under the common law Rule "because of the possibility of afterborn children of A whose children could take beyond the period of the Rule."\textsuperscript{185}

\textsuperscript{181} The "unborn widow" problem arises in testamentary gifts such as "to A for life, then to his widow for life, and then to A's children then living." Since the woman who will be A's widow cannot be identified until A's death, the widow might turn out to be someone unborn at T's death and thus not a life-in-being under the Rule. Because A's children's interests will not vest until the widow's death, the possibility exists that the widow will both have been unborn at T's death and outlive A by more than twenty-one years, and this voids the gift to A's children.

\textsuperscript{182} Haskell, supra note 2, at 551-52.

\textsuperscript{183} \textit{Id}. at 553-54.

\textsuperscript{184} \textit{Id}. at 552.

\textsuperscript{185} \textit{Id}. 
Under a wait-and-see approach, the measuring lives to be considered include A, A's children, and A's grandchildren alive at the testator's death.\textsuperscript{186} The other parent of the living children of A and the parents of the living grandchildren of A other than the children of A are not generally considered measuring lives under the wait-and-see approach "because they are redundant—after the deaths of their respective spouses they cannot affect the identity of the grandchildren who take."\textsuperscript{187} Unfortunately, even if the wait-and-see Rule were clear on this point absent the existence of the NRTs, once the NRTs are in existence, it is difficult to see how those additional lives can be treated as redundant.\textsuperscript{188} The death of John no longer means that Mary cannot bear John's children. Therefore, the NRTs complicate the wait-and-see Rule's already complex measuring lives problem by increasing substantially the number of lives that must end before one can determine if the Rule has been violated.\textsuperscript{189}

The cy pres approach is also inadequate to deal with the problems posed by the NRTs. Recall that to apply cy pres requires the courts to identify the interests that fail a version of the perpetuities rule.\textsuperscript{190} The NRTs' impact on expanding the class of interests that fail the perpetuities rule (either in its original form or in a revised form) is thus not diminished by granting courts the power to engage

\begin{itemize}
\item \textsuperscript{186} "A is a measuring life because he may have a child who may have a child who may take; A's children are measuring lives because they may have children who may take; A's grandchildren are measuring lives because they may take." \textit{Id.} at 552-53.
\item \textsuperscript{187} \textit{Id.} at 553. Haskell uses this example as part of a discussion of why the measuring lives provision is unclear even on the wait-and-see approach's own terms. \textit{Id.} We do not mean to suggest he is advocating this particular approach. \textit{See also} Jesse Dukeminier, \textit{Wait and See: The Causal Relationship Principle}, 102 L. Q. REV. 250, 257 (1986) (noting that nothing can be proven by A's spouse that cannot also be proven by A).
\item \textsuperscript{188} In one respect, the NRTs make the wait-and-see rule simpler to apply. Haskell raises the question of whether measuring lives should be treated as if the individuals in question "'died' when they become infertile." Haskell, \textit{supra} note 2, at 553. Since, in the world of NRTs, no one becomes conclusively infertile before death, and some remain fertile even after death, that concern is eliminated by the existence of the NRTs.
\item \textsuperscript{189} Of course, one might secure affidavits or testimony from the individuals involved that no vials of cryopreserved semen, frozen embryos, or cryopreserved eggs exist to demonstrate that it is not necessary to wait to see if a particular life ended. Proving a negative is much harder than proving a positive, however, and much more expensive. Moreover, the issue is not merely whether the Rule will strike an interest but whether the potential for such an action raises the transactions costs of using the asset.
\item \textsuperscript{190} \textit{See supra} notes 51-56 and accompanying text.
\end{itemize}
in reformation of interests. The NRTs will therefore still vastly expand the number of interests failing the perpetuities rule.

Under a cy pres approach, the courts will be called upon to alter those interests to a form that approximates the donor's intent and complies with the perpetuities rule. But because the NRTs expand the proportion of interests that fail the perpetuities rule, courts will have more interests to reform, and they will have fewer interests that pass the perpetuities rule available as options to reform the invalid interests. Increasing the constraints on courts will also result in a reduced ability to approximate the donor's intent. The consequences of the NRTs for the cy pres reform are thus particularly serious. More interests will have to be reformed, the reformations will be less able to approximate the donor's intent, and the courts will have fewer options available to them to use in reforming the interests. Courts could, of course, simply use their cy pres powers to imply a restriction excluding posthumously conceived or born children who are born more than twenty-one years after the birth of the last measuring life, a restriction that would surely exclude mostly children for whom testators did not intend to make provisions. Doing so now, while the NRTs remain experimental and relatively rare, would be unlikely to have too many adverse consequences. As the NRTs become more widely available, however, it will require more widespread use of cy pres powers than currently accepted by the courts. We therefore prefer an explicit solution adopted legislatively, as described below.

The USRAP offers the apparent simplicity of an explicit provision rejecting the possibility of children born after death using an NRT. This provision prevents the NRTs from expanding the class of interests that fail the common law RAP and eliminates the need to consider the possibility of an impact of the NRTs in reforming an

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191 One question is what donor intent is likely to be with respect to posthumous children. Given that the NRTs are new, we do not yet have the societal experience with respect to this issue to be able to construct a majoritarian default rule or even for it to be likely that individuals storing genetic material have completely addressed their intentions with respect to the material. Over time, such experience is likely to arise and allow courts to do a better job of predicting donor intent, or at least to construct rules that provide reasonable default rules.

192 USRAP, supra note 49, § 1(d), at 985.
interest. Indeed, the USRAP manages to invert the common law Rule's fertile octogenarian problem. Under the common law before the advent of the NRTs, logical possibility trumped physical probability. Under the USRAP, after the development of the NRTs, legal definition trumps physical possibility. Although the chance of a post-mortem child may be remote today, despite its physical possibility, this is unlikely to remain true indefinitely. By legislating a mandatory pre-NRT view of science, the USRAP manages to ensure that the Rule remains out of synch with reality. The concept of addressing the problem through a presumption is pursued further in our proposed solution to the problem.

IV. REFORMING THE RULE

There are many proposed reforms to the Rule intended to solve a variety of problems as well as a few directed specifically at the problems discussed in this Article. In this section, we consider these reforms in light of the NRTs and propose our own solution.

193 The explicit legal disavowal of the possible impact of the NRTs brings to mind the Indiana legislature's attempt to define pi as 3.2. PETR BECKMAN, A HISTORY OF PI 174-77 (1976) (recounting story).

194 Professor Lynn, as noted earlier, "solved" the problems posed by the NRTs in a similar fashion. Lynn argued that "just as a rational law on perpetuities excludes a conclusive presumption of fertility, so too it excludes possibilities of adoption, conception, and birth that run counter to the probable intention of the donor and preclude the reasonably prompt final settlement of disputes over property." Lynn, supra note 34, at 237 n.42. The problem with Lynn's argument is that the "rational" Rule he describes is not the Rule under any of the proposed reforms or in any state that we are aware of. The Rule is rational and clear (at least on this)—living individuals are conclusively presumed to be fertile (except in a few states, including Idaho, Illinois, New Hampshire, and New Jersey). IDAHO CODE § 55-111 (Michie 1979); 765 ILL. COMP. STAT. ANN. 305/4 (West 2001); W. Barton Leach, Perpetuities: New Hampshire Defertilizes the Octogenarian, 77 HARV. L. REV. 279 (1963). See also In re Ransom's Estate, 214 A.2d 521, 525 (N.J. Super. A.D. 1965) ("This state rejects the 'notion' there is a conclusive presumption that a man or woman is always capable of bearing children regardless of age, physical condition and medical opinion to the contrary.") The court based its ruling on a finding that "[t]he chance of becoming pregnant after the age of 50 is negligible, and more so if the woman has passed through the menopause."); Fletcher, supra note 4, at 800-01 (summarizing "rules" for interpreting the Rule as including "[a] person, if male, may impregnate a female person and a person, if female, may give birth to a child at any age regardless of physical or mental condition" and "[t]hat an event is highly unlikely to occur is no barrier to the challenger").
A. THE LEACH SOLUTION

Professor Barton Leach, one of the greatest Perpetuities scholars of the twentieth century, addressed the implications of cryopreservation of semen in a slightly tongue-in-cheek 1962 article. Leach analyzed four possible solutions to the dilemmas posed by cryopreservation and the "fertile decedents." First, Leach noted that declaring posthumously conceived children illegitimate would be an "easy escape" since it would remove them from the class of "children." Leach ruled this solution out as politically infeasible, something that is certainly even truer today than in 1962. Next Leach considered whether the "rule of convenience" might resolve the issue, at least in some cases. Under this principle of construction, classes close for purposes of the Rule when any member can call for a distribution of principal. Thus, a class gift "to such of my children as reach age 25" could be valid (for the living children) if at the time of the gift at least one child was already twenty-five. Leach rejected this as a general solution because it would be inapplicable to many transfers.

Leach's solution was judicial adoption of a rule of "visible inconvenience." Under this approach, posthumously conceived children of a sperm donor would be legitimate if conceived by the donor's widow before she remarried, and "the duration of a male 'life in being' under the Rule Against Perpetuities should be defined as

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195 Leach, supra note 87. This article is about as funny as perpetuities writing gets.
196 Id. at 943.
198 A class closes when no one else can join the class. Once a class closes, perpetuities problems with respect to unborn children are eliminated.
199 Leach, supra note 87, at 944. Leach provides this example, which makes the application of the rule clearer:
   Thus where there is a gift to A for life, remainder to B's children, and B has children at A's death, the class closes at A's death; but if B has not had children before A's death, there are cases holding that the class remains open for all of B's children.
200 Many transfers do not involve class gifts with conditions that are already satisfied at the time of the gift and so not enough would be saved. Leach, supra note 87, at 944.
201 Leach provided a draft opinion wittily setting out this rule. Leach, supra note 87, at 944.
the period of his reproductive capacity, including any post-mortem period during which his sperm remains fertile" even through cryopreservation. The result is that "gifts are as valid as if the sperm bank had never been thought of" because the perpetuities period is extended for as long as reproduction is possible. Thus, a post-mortem child would still be considered born within the "life" of his father for purposes of the Rule. Although Leach considered only the possibility of male genetic material being preserved, his solution could easily be modified to include posthumously conceived children of parents of either sex. In the alternative, Leach proposed a statute providing cy pres for saving existing wills and irrevocable trusts and the use of improved drafting for wills and trusts drafted in the future.

Professor Leach's expertise in the area of perpetuities is legendary, but we nonetheless must disagree with Leach's solution for two reasons. First, Leach's "visible inconvenience" Rule has the effect of allowing those who store frozen genetic material to completely escape the Rule or, at least, to indefinitely extend the period during which gifts are good. By redefining "lives in being" to include the period of post-mortem reproductive capacity, the Rule will no longer strike any interest involving children or other descendants of an individual who first preserves his or her reproductive capacity. Leach's solution would allow the Rule to be undercut at will. By preserving genetic material to extend one's life for purposes of the Rule, an individual could make valid a gift "to my child A for life, then to A's children for life, then to A's grandchildren for life, then to A's great grandchildren" since the testator's life would now serve as a measuring life by virtue of the preserved material. Such a gift

202 Id.
203 Id.
204 See id. (arguing for legislative enactments to save wills and trusts from perpetuities violations by looking at intentions of creator of interest).
205 Leach addressed the issue of sperm banks and so considered only men. See id. at 943 (discussing problems that can arise from sperm banks). This stemmed in part from his belief that the technology did not allow an equivalent procedure for women. Id. Technology today would allow women an equivalent opportunity.
206 Indeed, one individual who preserves genetic material could serve as the "life in being" in multiple cases by being explicitly named in others' wills and other instruments.
would strike directly at the heart of the Rule's prescriptions against over-fractionation of title and dead hand control.

In crafting his solution, Leach assumed that the use of cryopreservation would be confined to a small number of people at risk of radiation exposure (astronauts in particular). Leach's assumption, however, is no longer true. He also considered only one of the several NRTs available now or in the near future. As a result, he did not consider the impact of widespread availability of NRTs, leaving his solution unsatisfactory under modern conditions.

B. THE THIES SOLUTION

Another alternative was proposed by attorney Winthrop D. Thies in a 1971 article. Thies was concerned primarily with the possibility that posthumously conceived children of a testator who had cryopreserved semen would be deemed a measuring life, thus extending the perpetuities period. His solution was to limit the class of posthumously conceived children who qualified to those born of the testator's widow. Alternatively, he proposed a limitation to a number of years after either the testator's death or after the testator would have reached a given age (Thies suggested seventy) had he lived.

Thies' analysis of the problem is overly narrow. First, conceiving children from frozen semen is only one possibility offered by the NRTs. The NRTs therefore raise issues that Thies' solution does not resolve such as the extension of women's reproductive capacity beyond death. More importantly, Thies' proposal does not address the issue of the impact of the birth of posthumously conceived children on class gifts. Indeed, determining that a posthumously

207 See Leach, supra note 87, at 944 ("Use of the sperm bank will probably be limited to relatively young men who, apart from the risks of the nuclear age, would normally far outlive the fertility of the deposited sperm.").

208 Winthrop D. Thies, Property Rights and the Posthumously Conceived Child, 110 Tr. & Est. 922 (1971).

209 Id. at 922-23, 960.

210 Id. at 960.

211 Id.

212 As noted earlier, many class gifts are potentially invalidated under the common law Rule because of the possibility that all living potential class members die and new,
conceived child is a measuring life creates almost as many problems as it solves because it could potentially greatly extend the perpetuities period.

C. THE GESTATION RULE

One possible alternative for circumstances in which an actual embryo exists is to extend the common law Rule that provides that periods of gestation are added to the perpetuities period to cover all embryos regardless of whether they are progressing toward birth or not. The gestation rule covers the situation described by Professor Leach in the following example:

Example 6: T makes a bequest "to my children for their lives, remainder to my grandchildren who shall reach 21" and has one living child and one unborn child, who is born eight months later. This second child later dies leaving an unborn child as well, who is also born eight months later.

The gift to the grandchildren is valid, despite the birth of a grandchild outside the "lives in being plus 21 years" period because the period is extended by the two gestation periods. In effect, the gestation period could be defined to include storage of an embryo in a facility.

posthumously conceived members are then born. See supra note 167 and accompanying text.

One might foresee, for example, that in the future embryos could be brought to term outside a woman's womb. See Sacha Zimmerman, The Real Threat to Roe v. Wade: Fetal Position, THE NEW REPUBLIC, Aug. 18 & 23, 2003, at 14 (stating that within five years technology might allow for the gestation of fetuses outside a woman's body through ectogenesis or artificial wombs). We therefore define the issue as whether the embryo is "progressing" toward birth or is in a static state (as is an embryo that has been frozen). See, e.g., Guzman, supra note 177, at 221-22 (suggesting that treating frozen embryos as "lives in being" solves RAP problems "because any interest given to the embryo would always vest or fail within its own 'life' "). Such a solution obviously does not apply to instances where the embryo itself is created later.

Leach, supra note 158, at 642. Professor Leach took the example from Thelusson v. Woodford, 11 Ves. Jr. 112 (Ch. 1805).

Leach, supra note 158, at 642.
This solution is problematic, however, for several reasons. First, it addresses only the subset of NRTs in which an embryo is created before preservation of genetic material. To the extent differential treatment of NRTs exists, the differential will create an incentive to choose one NRT over another for RAP reasons—surely a poor basis for medical decisions. Second, many embryos are frozen but never implanted. They are stored indefinitely or ultimately destroyed by the storage facility. Third, the extension of the gestation rule to cover these circumstances is bad law. The cost of extending the perpetuities period by gestational periods of under a year for a limited class of beneficiaries (unborn children who have been conceived) is relatively slight. Allowing an indefinite extension for children born through NRTs, however, would effectively gut the Rule by extending to infinity the potential gestational period for future births.

D. REPEAL OF THE RULE

The problem could be solved by simply repealing the Rule, ending its "reign of terror" once and for all. As Professors Levin and Mulroney summed up the arguments of the advocates of repeal,

[logic] could lead one to argue that a social policy device first sculpted to prevent the aggregation of assets in the hands of several hundred noble families at a time when London, the largest city in the common law world, had less than 10,000 inhabitants, has outlived its justification. While certain ownership behavior patterns were politically and economically undesirable for a feudal sovereign, these patterns do not present a clear danger in our modern society.

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217 Levin & Mulroney, supra note 25, at 356.
As Levin and Mulroney note, however, such an approach neglects the importance of the social interests served by the Rule—the prevention of dead hand control and avoiding temporal fractionation of ownership interests.\footnote{218}

As we discussed earlier, however, the Rule's ability to serve those interests is limited by its complexity and incomplete coverage.\footnote{219} Repeal of the Rule would increase dead hand control, although other steps might be taken to directly, and perhaps more effectively, limit such control. The NRTs provide a good excuse to repeal the Rule entirely, since they require some action to solve the conceptual problems they introduce. If the Rule were repealed, it would be necessary to explicitly address fractionation of title and dead hand control through some other mechanism.

Professors Levin and Mulroney suggest replacing the Rule in its various forms with a carefully designed estate tax that would make transfers intended to achieve long-term control of assets prohibitively expensive.\footnote{220} Such a tax would render The Rule unnecessary as a means of social control over property owners' efforts to tie up wealth for excessively long periods after their deaths. Governmental control of such conduct would thus shift from the judiciary to the tax sector and The Rule would become as irrelevant to modern social policy as the destructibility of contingent remainders and the Rule in Shelly's [sic] Case.\footnote{221}

Replacing the Rule with a tax eliminates the issues raised by the NRTs, while maintaining the Rule's policy objectives. However, it also mixes in new policy objectives concerning transmissibility of wealth across generations which, in addition to being beyond the scope of this Article, complicate the analysis. As we write this, of course, the main news concerning estate taxes is their phaseout.

\footnote{218} See id. (noting that restrictions on alienation hinder needs of current owners).
\footnote{219} See supra notes 71-76 and accompanying text.
\footnote{220} Levin & Mulroney, supra note 25, at 349.
\footnote{221} Id. at 359.
between now and 2010, making the notion of expanding them to replace the Rule unlikely in at least the short term.

E. IMPOSING DEFINITIVE TIME LIMITS

Another possibility is to follow the USRAP and substitute a defined time limit for the measuring-lives approach of the current forms of the Rule, requiring that interests vest, if at all, within a defined time. While this would eliminate some of the NRTs’ problems under the Rule, that is, those related to the impact of the NRTs on the measuring lives, it would not solve all of the problems posed by the NRTs. For example, requiring interests to vest within ninety years as the USRAP does would not eliminate the chance that a class gift (e.g., “to all the grandchildren of A”) would not fully vest within ninety years because of an NRT-related birth. It also greatly increases the cost of the Rule by producing uncertainty about the outcome of the application of the Rule for the length of the defined time limit.

F. EXCLUDING POSTHUMOUS CHILDREN ONLY IF THEY PRODUCE RULE VIOLATIONS

Professor Ira Bloom proposed a class construction rule to solve class gift problems generally as part of a package of piecemeal reforms aimed at eliminating some of the Rule’s problems relating to improbable events: “If an interest would be invalid under the common law Rule by including afterborn persons within a class, after-borns shall be excluded from the class to the extent necessary to avoid a violation under the common law Rule.” Such a rule could easily be modified to address posthumously conceived children by substituting “posthumously conceived” for “afterborn.”

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223 See Haskell, supra note 2, at 548-50 (arguing that period of Rule should be fixed between 100 and 125 years).
224 Bloom, supra note 34, at 70.
225 A different term from “posthumously conceived” might be necessary if the Rule was to consider embryos created before death but held in cold storage until after death. We have not thought of a good shorthand term that includes such children yet, but a lengthy phrase that
Although better than denying that such children can exist, this reform's complete exclusion of such children from the gifts may be undesirable in at least some cases. In the instances where such children actually exist, grantors or testators (who have gone to some trouble and expense to enable such children to be born by preserving their genetic material) would presumably be more likely to want such children to be included in a class gift than not. Moreover, these children, conceived or born long after the testator's death, are precisely the ones that cannot have their gifts rescued by the expedient of substituting names of individuals for the class designation, since they do not exist at the time the will is drafted and thus have no names.

A modified Bloom rule is thus problematic. By ignoring all cases of posthumously conceived children, the modified Bloom rule protects some interests that should be struck—for example, those where the testator has made a gift with the knowledge that he or she leaves behind stored genetic material and has written a will that violates the Rule. By saving such interests, a modified Bloom rule would undercut the policies the Rule serves. Nonetheless, the modified Bloom rule suggests that a more tailored presumption could solve the problem, as does the approach we discuss below.

G. THE RULE OF DISCRETE INVALIDITY

The Rule of Discrete Invalidity ("RDI") was first set out in detail by Professor Robert Fletcher in 1968. Essentially, it consists of a rejection of the 1794 English case of Proctor v. Bishop of Bath & Wells. Under the approach taken by courts after Proctor, courts do not separate out the various contingencies for evaluation under the Rule, although they do allow drafters of instruments to do so. Thus, as Professor Leach explained in his classic article Perpetuities in a Nutshell, when

would cover this would be "posthumously gestated or implanted in a womb."

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226 Robert L. Fletcher, A Rule of Discrete Invalidity: Perpetuities Reform Without Waiting, 20 STAN. L. REV. 459, 462-65 (1968). Fletcher notes that the solution was previously outlined by Professors Ernst Freund and William Walsh. Id. at 459.

a testator makes a gift to A upon either of two expressed contingencies, one being remote and one not, the gift takes effect if the valid contingency occurs. . . . However, if the testator has expressed only one contingency and this may occur too remotely, the gift is invalid, even though two or more contingencies are implicit in the expressed contingency and the one of them that occurs is not too remote. . . . This distinction is all a matter of the form of words and of chance expressions used by the testator. It has been widely criticized but almost invariably followed.\textsuperscript{228}

The RDI approach allows courts to subdivide gifts into the gifts' multiple contingencies, which are each evaluated separately to determine whether there is a Rule violation. Understanding the RDI rule is easier through an example. Here we borrow an example from Professor Susan F. French, another advocate of the RDI and daughter of Professor Fletcher.

\textit{Example 7}: "Gift to the first son of A to become a clergym an, but if none, to B. A and B are alive at the death of the testator, and A has no sons."\textsuperscript{229}

Under the RDI analysis, we can identify, based on the conditions precedent to each individual taking, three possible sequences that would lead to vesting of the interest of either a son of A or a failure of that interest, with a resulting vesting in B.\textsuperscript{230}

(1) A has a son who becomes a clergym an. The gift would vest in the son. There would be no validating life because an afterborn son could become a clergym an more than twenty-one years after the death of A, B, and everyone else alive at the effective date.

\textsuperscript{228} Leach, \textit{supra} note 158, at 654-55.
\textsuperscript{229} French, \textit{supra} note 47, at 338.
\textsuperscript{230} Id.
(2) A has a son (or sons), none of whom becomes a clergyman. The gift would vest in B. There would be no validating life because all afterborn sons might die without having become clergymen more than twenty-one years after the deaths of A, B, and everyone else. (B is not required to survive to take.)

(3) A never has a son. The gift would vest in B. A is the validating life because vesting must take place at A's death.²³¹

Under the RDI approach, each of these sequences is analyzed separately, with the result that sequences one and two are struck, but sequence three is not (so long as we do not consider the NRTs).²³² The gift to B if A dies with no sons is therefore valid. Professor French's version goes on to apply reformation principles to those gifts that fail.

Unfortunately, the RDI approach does not solve the NRT problem. In Example 7, the NRTs make sequence three invalid because A can have a son after his death who then goes on to become a clergyman, so A is no longer available as a measuring life.

Nonetheless, the RDI approach offers drafters of instruments a guide to protecting their instruments from NRT-based attacks. Making all the contingencies explicit, for example, setting forth the sequences of gifts explicitly and including NRT sequences within the lists, will bring the instrument within the courts' ability to assess each explicit contingency individually and thus save interests in some cases. However, the problem remains of how to decide when to "close the books" and determine that no posthumously conceived or born children will appear. Although it will often be impossible to prove that the deceased did not preserve genetic material at some point during his or her lifetime, preventing the NRT sequences from being ruled out, a will that considers NRT sequences can also include language stating that the testator had not stored genetic material and did not intend to do so in the future.

²³¹ Id. at 338-39.
²³² Id. at 339.
Reforming rather than eliminating the Rule requires addressing the several conceptual problems posed by the NRTs for the Rule. First, the NRTs vastly expand the set of interests that fail any version of the Rule that incorporates the common law Rule and does not simply rule out the possibility of posthumously conceived children. The problems of the unborn widow and the fertile octogenarian pale in comparison to the number of interests possibly affected by NRTs. Second, the NRTs vastly expand the set of impermissible class gifts. Third, the NRTs make possible events previously excluded by reformers as sufficiently improbable that they could be dismissed. Fourth, by reducing the set of interests that pass the common law Rule, the NRTs restrict the options for courts seeking to reform interests that fail under the Rule. Finally, the NRTs potentially extend the gestational period of the Rule indefinitely for children conceived but not yet born.

We propose that if the deceased did not explicitly provide in the will for posthumous children, there should be a rebuttable presumption that the will contains an implicit provision stating that "nothing in this will shall be construed to provide an inheritance for any posthumously born individuals." We propose a rebuttable presumption rather than the USRAP's conclusive presumption in recognition of the increasing likelihood that the NRTs will lead to the birth of posthumously conceived children. This presumption can be rebutted by evidence showing that the deceased intended at the time of his or her death to provide for posthumously born children but had not yet made such provisions prior to his or her death. For

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233 This proposal excludes, of course, children in utero who are covered by the gestation rule. See supra notes 213-15 and accompanying text (discussing gestation rule).

234 This provision is similar in approach to the Uniform Parentage Act, which provides that "if a spouse dies before placement of eggs, sperm, or embryos, the deceased spouse is not a parent of the resulting child unless the deceased spouse consented in a record that if assisted reproduction were to occur after death, the deceased spouse would be a parent of the child." UNIFORM PARENTAGE ACT § 707 (amended 2002), 9B U.L.A. 358 (2000). Similarly, the Uniform Status of Children of Assisted Conception Act provides that "an individual who dies before implantation of an embryo, or before a child is conceived other than through sexual intercourse, using the individual's egg or sperm, is not a parent of the resulting child." UNIFORM STATUS OF CHILDREN OF ASSISTED CONCEPTION ACT § 4(b), 9C U.L.A. 371 (1988).
example, suppose Joe and Mary Smith created frozen embryos. Before they could revise their wills, Joe Smith is killed in a car accident. The Smiths had made an appointment with their attorney, informing her that they wished to revise their wills to provide for children who are the products of those embryos, even if they are born posthumously. Mary then chooses to implant the embryos in her womb. Upon proof of Joe's intent, a gift in Joe Smith's will to "my children" would then be read to include the children born from the frozen embryos. Further, we propose that the gestational period be limited to no more than ten months after the embryo is implanted. The period during which the embryo is frozen does not count as "gestation." Thus, the existence of an embryo in storage could not be used to extend indefinitely the period of gestation.

Now let us examine the implications of this reform for the Rule Against Perpetuities. Consider Example 8.\footnote{Example 8 is a version of Example 1 modified to include NRT facts.}

\textit{Example 8:} T leaves Blackacre "to my grandchildren who shall reach the age of 21." T and T's spouse S have created cryopreserved embryos before T's death.

Since T has left no explicit provision dealing with the cryopreserved embryos, the rebuttable presumption comes into play. Since there is no evidence of intent by T to provide for posthumously born children, the possibility that such children will be born is not considered by the court in applying the Rule, and the gift passes the Rule. Just as in \textit{Example 1}, the court finds that any grandchildren of T who reach age twenty-one will do so within twenty-one years of the death of T's children that were born before his death, who can thus serve as validating lives.

Now consider the impact of rebutting the presumption:

\textit{Example 9:} T leaves Blackacre "to my grandchildren who shall reach the age of 21." T and T's spouse S have created cryopreserved embryos before T's death. Also before T's death, T writes to T and S's attorney to ask for
an appointment "to revise our wills in light of our creation of cryopreserved embryos so as to provide for the children who may be born from the embryos S and I have stored, and their descendants, including any born after my death." T dies before the appointment and the wills have not been revised.

In Example 9, the evidence is sufficient to rebut the presumption. The court must therefore consider the impact of the cryopreserved embryos. Now the court must find that a child of T could be born after T's death and that a grandchild could therefore be born more than twenty-one years after any lives in being at the time of T's death. Thus, the gift in Example 9 violates the Rule. The evidence of T's intent to provide for posthumously born children thus causes the gift to T's grandchildren to fail.

This outcome may seem contradictory—in the case where T is planning to explicitly provide for posthumous NRT-related births, the gift fails, while in cases where T has made no attempt to do so, the gift succeeds. The contradiction is only superficial, however. Where an individual is contemplating the possibility of posthumous NRT-related births, that individual has an obligation to comply with the rules governing wills and other transfers. Arranging for the preservation of genetic material is an act that carries with it a multitude of obligations—for example, one must provide for payment for long-term storage and for disposition of the genetic material after the donor's death. Indeed, provisions in contracts with storage facilities now routinely include language dealing with such eventualities. Someone who is aware of the possibility of posthumously born children should be held to the Rule's restrictions on perpetuities. Moreover, any competent attorney faced with a client who expresses a desire to provide for posthumously born children ought to raise perpetuities issues with the client. Requir-

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236 Sheryl A. Kingsberg et al., Embryo Donation Programs and Policies in North America: Survey Results and Implications for Health and Mental Health Professionals, 73 FERTILITY & STERILITY 215, 218 (2000) (finding that 92% of disposition agreements for donors address divorce and 90% address death).
ing such individuals to comply with the Rule thus serves its underlying social purposes.

Holding people who have not contemplated posthumously born children to the Rule in these circumstances is quite different. Someone who has stored genetic material not to produce children but as insurance against workplace hazards (Professor Leach's astronauts, for example) or as an insurance policy against the death of existing children, would not have reason to raise the issue with an estate planner or attorney, and so is less likely to learn of the perpetuities problem. Moreover, striking gifts made by such people due to NRT-related contingencies widens the Rule's scope by increasing the number of interests it strikes. As the various general reforms adopted and proposed suggest, the problem with the common law Rule was that it was overbroad in application.

Perpetuities problems in wills can almost always be “solved” by proper drafting, including the use of “savings” clauses that instruct courts to fix problems that may arise. An alternative to our approach would be to imply such a savings clause where it is not present in all instruments either through the courts or by legislative action.

Our proposal is slightly different—we would allow the Rule to continue to strike those interests that violate the Rule where the creator of the interest has failed to explicitly provide a solution. Striking interests that violate the Rule is important to serving the policy interests of the Rule itself in limiting dead hand control. If all wills and other instruments containing provisions that violate the Rule because of NRTs are saved by an implied savings clause, regardless of whether the Rule violation was intentional or not, individuals desiring dead hand control will have no incentive to avoid violating the Rule. In some of those cases, because of bad lawyering or lack of resources, interests that violate the Rule will stand for lack of a challenge. Moreover, it is generally true that

[t]he burden of exercising care in estate planning necessary to realize testamentary freedom cannot be alleviated but rather only deferred to litigation that occurs after the testator's death when he is incapable of exercising the same degree of control over communica-
tion of his wishes. This simply shifts the premium on factual knowledge, effective expression and good lawyering from the testator and his estate planner to competing beneficiaries and their litigators.237

A generalized program of courts reading in savings clauses would so shift the burden.

The law of wills and estates has an extensive body of rules governing when courts are willing to look outside the will for evidence of testator intent. That law balances the importance of donor intent with the costs of expanding inquiry beyond the four corners of the will.238 Our proposal is consistent with this effort to balance donor intent and the reliability interest served by excluding extrinsic evidence, although it defers less to donor intent than some modern will reformation theories allow. One important rationale for application of a rule limiting will reformation is that such a rule limits the opportunity to exercise bias by finding evidence of “mistake” more readily in cases involving testators whose dispositive plans are unusual or unpalatable. By limiting courts to the unambiguous language of the will, these testators receive assurance that their wishes will not be overturned because they are unpopular. More generally, the rule-oriented approach offers predictability to all testators, assuring them that their wishes, if expressed unambiguously, will be respected.239

In the case of the Rule Against Perpetuities, this balance needs to consider the additional factor of advancing the policies underlying the Rule: one function of the Rule is to prevent some individuals from implementing the plan they intend. Another is to prevent unintentional creation of interests that vest too remotely. Our solution handles these cases differently: striking interests about

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238 See id. at 391-426 (reviewing issues of how to balance testator intent and need for certainty).
239 Id. at 401.
which there is evidence that the donor intended to create an interest barred by the Rule while protecting interests that, due to the existence of the NRTs, violate the Rule unintentionally.\textsuperscript{240}

Finally, suppose someone has stored frozen embryos and made a bequest to those embryos. Could a donor make a valid bequest to the embryos under our proposal? Within the limits of the common law Rule's perpetuities period—limits that are quite flexible with proper drafting—children born from frozen embryos over an extended period of time could inherit. For example, a donor might include a provision in his or her will that provides for a gift of a specified property or sum of money "to such of my children as are born from my stored genetic material within twenty-one years of my death or the death of my spouse, S, whichever comes later."\textsuperscript{241} The donor and the spouse, S, serve as the measuring lives, thus validating the gift. Gifts to posthumously conceived children born later than twenty-one years after the death of the longest surviving spouse would not be valid, of course, but such gifts should be struck because of the social policies underlying the Rule Against Perpetuities. Our proposal would not generally hinder bequests to posthumously born children. Its main function is to prevent the mere possibility of posthumous children from eliminating interests given to currently living individuals.

V. CONCLUSION

But wait—perpetuities problems seem to be rare in general, and ordinary perpetuities problems are obscure and often based on improbable and odd facts. Aren't more complex problems, based on science-fiction-like reproductive technologies just, well, silly? Aren't we just making up perplexing hypotheticals to bedevil the poor readers of this article? No.

\textsuperscript{240} Something similar to our result could be achieved by implying an appropriate savings clause into every will, excluding any NRT-produced descendants from all gifts and conditions that would violate the Rule. We prefer our solution, since the striking of intentionally created interests that violate the Rule provides an increased incentive to comply with the Rule. In addition, we prefer not to imply language through court action if possible, thus avoiding increasing the courts' discretion in will interpretation.

\textsuperscript{241} Another alternative would be "or within 21 years of the death of the last survivor of my now-living descendants."
The problems raised by the NRTs for the Rule are real. They are likely to lurk undetected in wills, complex real estate development contracts involving options or rights of first refusal, and elsewhere until a party discovers a reason to litigate one. Such a case will arise because the Rule provides a powerful economic incentive to contest even hypertechnical violations—the winner takes all of the disputed interest. It also provides a powerful incentive to settle such claims: faced with a claim based on the NRTs and the Rule, a prudent will beneficiary or other interest owner will hesitate long before rolling the dice to see if she loses or keeps her interest. Even a relatively small chance of winning may yield a challenger a high enough expected value if the asset is large enough.\textsuperscript{242} Thus, NRT-based perpetuities challenges are likely to emerge even if they do not lead to court decisions because of the incentives to settle. When they do, the challenges are likely to be in a context that threatens to disrupt a significant number of personal and commercial relationships. And once a court accepts an NRT claim, others will appear.

As the complexity of past reform efforts testifies, fixing even comparatively simple problems caused by the Rule is not an easy task. Thus, the question calls for legislative intervention before a problem arises. Adopting our proposed solution would give courts a method for answering these thorny questions when they inevitably arise. Alternatively, a comprehensive revision of parentage laws, intestacy laws, and estate law to consider the impact of the NRTs could produce other, more effective means of addressing the concerns of the Rule and eliminate the need for a piecemeal reform and, perhaps, for the Rule itself. Given the contentious nature of the debate over reproductive and family issues generally, and over therapeutic cloning in particular, we are not optimistic that any such reform will take place soon enough to obviate the need for our approach and are content to leave such a comprehensive solution to those better versed in the relevant areas of the law. In the meantime, rethinking the Rule Against Perpetuities in light of the scientific advances that threaten to make the Rule obsolete is

\textsuperscript{242} For example, a 10% chance of winning a challenge for a $1,000,000 asset has an expected value of $100,000, well worth a demand letter and some litigation.
necessary if we are to avoid losing the Rule's important, if imperfect, protections against dead hand control and over-fractionation of property interests.