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CONFUSED HERITAGE AND THE ABSURDITY OF GENETIC OWNERSHIP

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INTRODUCTION

At this moment in time, eight human embryos lie frozen in liquid nitrogen in a southern New Jersey laboratory awaiting their fate. Their mother wants the embryos destroyed and has petitioned a New Jersey trial court to grant her request. The father, citing ethical reasons and the possibility that he may want the embryos implanted in another woman, has asked the court to award him custody.

How should the court decide? Should this be considered a matter of property distribution, decided as a custody fight, or something in between? The attorneys for the mother and father "are flying blind. There is no precedent in New Jersey to which they may turn for an answer, nor statutory language to guide them or the courts."[1]

With reproductive technology progressing so much faster than the law, this scenario will certainly be repeated throughout the country.

The problem is that the law, and society's notions of parenthood, both emerged when reproduction was done the old-fashioned way. The mother was the woman who carried a child to term. The father was the man whose sperm impregnated the woman. Things are often not as simple now. Couples use frozen embryos, donor eggs, donor sperm, in vitro fertilization, artificial insemination, and surrogacy arrangements. Human cloning may not be that far down the road. Courts need to develop now the guiding legal principles to decide these cases.

Historically, courts have recognized a pregnant woman's right to decide whether to abort or continue her pregnancy based on her right to

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1. Michael Booth, *Fate of Frozen Embryos Brings N.J. Action to Bioethics Fore*, N.J. L.J., Mar. 9, 1998, at 1.

her own bodily integrity and personal autonomy. In *Roe v. Wade*,[2] the Court balanced the pregnant woman's *privacy* interests in her bodily integrity against the State's right to protect both the mother's health and the well-being of the developing fetus.[3] The Court in *Roe* expressly found that the pregnant woman was not "isolated in her privacy," and her situation was "inherently different" from other privacy contexts because "[s]he carries an embryo and, later, a fetus."[4]

Nearly twenty years later, the Supreme Court in *Planned Parenthood v. Casey*,[5] reaffirmed *Roe* and held that a pregnant woman had a protected liberty interest in deciding whether or not to continue her pregnancy. The Court in *Casey* explained that "the liberty of the woman is at stake in a sense unique to the human condition . . . . The mother who carries a child to full term is subject to anxieties, to physical constraints, to pain that only she must bear."[6]

Thus, both *Roe v. Wade* and *Planned Parenthood v. Casey* were based on the unique circumstance of a pregnant woman who carried in her own uterus a fetus. These privacy and liberty interests are simply not present when a court is asked to decide the fate of an embryo ex utero (out of the uterus). Now that fertilization can occur outside a mother's body and surrogate mothers can carry other couples' children to term, how does this change the way courts should rule?

In this article, we will argue that whenever a court must sort out the legal consequences of a reproductive technology, different considerations should govern depending on whether the embryo is outside the confines of a human body (ex utero), whether a pregnancy is underway (in utero), or whether a live child has been born as a result of the reproductive procedure.

At the end of this article, we will suggest a legal framework for courts to decide these issues. But, first, we must turn to the science and the biological instincts that have caused so many couples to seek "a child of their own" in ways heretofore unknown to our legal notions of "mother," "father," and "child."

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2. 410 U.S. 113 (1973).
3. *Id.* at 154.
4. *Id.* at 159.
5. 505 U.S. 833 (1992).
6. *Id.* at 852.

THE DESIRE TO HAVE ONE'S "OWN" CHILD

The desire to have and raise a child is such a powerful instinctive force that many people who experience it have a hard time explaining where it comes from.[7] However, the source may be more readily apparent to those familiar with Theodisius Dobzhansky's famous quote that "nothing in biology makes sense except in the light of evolution."[8] When illuminated by the "light of evolution," the origin of the desire to be a parent is easy to see. It emerges directly from one of the guiding principles of evolution: genes that program individuals to do a better job at reproducing themselves will be passed down with increased frequency from one generation to the next, and will eventually spread widely throughout a population.

One can imagine how such a desire for one's "own" child might have evolved in our ancestors. It probably began with the ability to generate and process abstract thoughts, and make logical connections between events that occurred far apart from each other in time and place. The fossil evidence suggests that our ancestors gained this intellectual capacity between one and three million years ago, during a period when the cerebral cortex underwent a large expansion in size.[9] A byproduct of this increased intellectual capacity was the ability to make connections between sex, pregnancy, and babies. Once these connections were made, the stage would have been set for the evolution of the desire to have children.

People whose genes programmed them with this reproductive instinct (notably different from the simple instinct to want to engage in sexual intercourse) would be more likely to engage in activities that

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7. There are still gene-critics in the social sciences who refuse to accept the idea that the human desire to have children is instinctual. They claim instead that "the notion that a desire for children is natural and instinctive might also be considered a nonconscious ideology," which is based on a "social construct." Linda S. Williams, *Biology or Society: Parenthood Motivation in a Sample of Canadian Women Seeking In Vitro Fertilization*, *in* ISSUES IN REPRODUCTIVE TECHNOLOGY I: AN ANTHOLOGY 261, 271 (Helen Bequeart Holmes ed., 1992). In other words, the *only* reason people want to have children is because society makes them feel that way without them realizing it. This point of view — alway made without any supporting evidence — can be shown to be scientifically invalid.

8. This aphorism is actually the title of a famous lecture given by Dobzhansky that was published in *The American Biology Teacher*. *See* 35 AM. BIOLOGY TCHR. 125 (1973). It is often quoted and used as rallying cry for the defense of teaching evolution in the public schools.

9. *See* Harold J. Morowitz & James S. Trefil, THE FACTS OF LIFE: SCIENCE AND THE ABORTION CONTROVERSY 71–74 (1992).

promoted successful pregnancy, childbirth, and parenting. As a result of these activities, people with a reproductive instinct would have more children who survived to reproduce their own children relative to people without the special genes, and so on, through generation after generation. Ultimately, the emotional "desire to have one's own children" would spread throughout the entire species.

Of course, most of us know people who are childless by choice. How does biology explain this? The explanation comes from the single attribute that uniquely defines us as human beings. We alone — among all animal species — have evolved the intellectual capacity to comprehend and, at times, counteract the natural predispositions provided to us by our genes. It is possible that, under certain circumstances of environment, culture, or intellect, reproductive desires can be rejected in favor of other desires centered more on the self, other human beings, or other life goals.

For the majority of adults, though, the desire to have "one's own children" is so powerful that it outshines everything else they might possibly want to do during their lives.[10] The inability to fulfill the desire may be accompanied by a degree of pain and grief that is equivalent to that felt upon the death of a loved one. Unfortunately, nine to fifteen percent of all married couples are infertile. In the United States alone, there are more than two million married couples right now who want to conceive a child and are unable to do so.[11]

WHOSE CHILD IS IT, ANYWAY?

From the time our ancestors first understood the connection between sex and reproduction, a mother understood her "own" child to be the one she gave birth to, and a father's "own" child was the one conceived with semen that he deposited into a woman's vagina.[12] It was on the basis of this clear distinction that the desire to have one's "own" children became

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10. According to a 1990 Gallup poll, 84 percent of childless adults under the age of 40 would like to have children, and 60 percent of childless adults aged 40 or older wish they had children. *See The Parent Poll: Americans and Their Children*, ST. LOUIS POST-DISPATCH, June 3, 1990, at 1C.

11. *See* LEE M. SILVER, REMAKING EDEN: CLONING AND BEYOND IN A BRAVE NEW WORLD 71 (1997).

12. "One's own" children: This phrase is commonly used and understood to mean a child conceived with one's own gamete, either sperm or egg. However, the use of the phrase in this exclusive way is demeaning to the strong parental-child relationship that can exist between adopted children and their adoptive social parents. For this reason, I have avoided its use wherever possible. At this point, however, I have chosen to use the phrase as a set-up to challenge its meaning, as will become clear shortly.

programmed into our genes as a natural instinct through the course of evolution.

The distinction made between one's "own" child and "someone else's" child throughout history was much greater than many now realize. Adoption of unrelated children was extremely rare until early in the twentieth century.[13] Children orphaned without relatives may have been cared for by foster parents in earlier times, but such parents invariably distinguished between their "own" children and the children of others.

With the use of reprogenetic technologies, the meaning of one's "own" child becomes blurred. In vitro fertilization ("IVF") makes it possible for one woman to be the birth mother to a child conceived with another woman's egg. Which of these women has the right to consider the child her own?

What most educated citizens of the Western world in the late twentieth century would say is that the child "belongs to" the woman whose egg was used in its conception. Infused, as we are, with a sophisticated understanding of biology, we know that all of the child's inherited characteristics are carried in the egg and sperm; none are contributed by the birth-mother's blood. Furthermore, we know that these characteristics are programmed by the genes present within the fertilized egg. We speak confidently of a genetic mother who can rightfully call a child born with her genes her "own" child, no matter where its development took place. We place an intellectual veil over our primitive instincts in order to accept the birth of our "own" child through the birth canal of another woman. However, some parent-child connections are not always so easy to comprehend, as the following examples demonstrate.

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13. I refer here to adoption in the modern Western sense of the term. According to the *Encyclopedia Britannica*:

> In most ancient civilizations and in certain later cultures as well, the purposes served by adoption differed substantially from those emphasized in modern times. . . . The person adopted invariably was male and often adult. In addition, the welfare of the adopter in this world and the next was the primary concern; little attention was paid to the welfare of the one adopted.

Britannica Online (visited May 31, 1998) <http://www.eb.com:180/cgi-bin/g?DocF=micro/5/89.html>.

IDENTICAL TWINS CONFUSE THE MEANING OF PARENTHOOD AND CHILDHOOD

Florence and Gail are identical twin sisters. Florence got married to Frank, and Gail got married to Gary. Unfortunately, before she even met Frank, Florence developed ovarian cysts which necessitated the surgical removal of both of her ovaries. Florence and Frank now want to have children but Florence is unable to produce eggs. To help her sister out, Gail agrees to donate some of her eggs to Florence. Gail's eggs are fertilized in vitro with Frank's sperm and introduced into Florence's uterus. Nine months later, Florence gives birth to a baby girl she names Fiora.

Who is Fiora's genetic mother? Most people would say it is Gail, since she contributed the egg that developed into Fiora. But, in fact, if Fiora and her birth mother Florence were subjected to DNA fingerprint testing, the results would be quite definitive — they would show, without question, that Florence herself was Fiora's gene-mom.

The confusion is caused by the fact that Florence and Gail are identical twins. As a consequence, they have exactly the same genes. Every egg that Gail produces carries half her genes. But any one-half portion of Gail's genes is equivalent to a one-half portion of Florence's genes. Thus, the eggs produced by Gail could all have been produced by Florence. This result can be traced back to the conception of the twins. The single fertilized egg that developed into both Gail and Florence underwent over a hundred divisions before being reduced to a small number of descendant cells. The genetic material in these descendant cells was then halved to become eggs. By chance, some of these eggs ended up in Gail's ovaries while others ended up in Florence's ovaries (which were surgically removed).

In strictly genetic terms, Gail and Florence must both be considered Fiora's genetic mother.[14] But this conclusion is rather unsettling, because it means that by DNA fingerprint analysis, the children of *all* identical twins would be found to have two genetic mothers or two genetic fathers — their *social* parent and their aunt or uncle. It also

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14. I will use the terms "genetic father" or "biological father" to describe the man who contributes a sperm nucleus toward the creation of a child. Until 20 years ago, it was also possible to speak about a "biological mother" in an unambiguous way. But with the advent of IVF and embryo transfer, the two essential woman-contributed biological ingredients can be separated so that a child can now have two biological mothers. Whenever it is necessary to distinguish between them, one can use "genetic-mother" to describe the woman who contributed the egg, and "gestational mother" or "birth-mother" to describe the woman in whose womb the fetus developed.

means that all first cousins related through identical twin parents are actually genetic half-brothers or half-sisters.

The children of a mother who happens to have an identical twin don't normally think in this way for a very simple reason. Their social mother is also their birth-mom as well as their gene-mom, while their aunt is connected only by genes. But what about Florence and Fiora? Florence is a gene-mom, she is the birth-mom, and she intends to be the social mother of Fiora. Does this combination trump Gail's contribution of an egg that Florence could have produced herself if she had ovaries? The only unique contribution made by Gail is that of storing the egg for some twenty-five years before graciously handing it over for use by her sister.

Let's consider another scenario that is similar but goes beyond semantics to a question of medical approach. This time the identical twin sisters are Amy and Jane. Amy is married to Andrew and Jane is married to Jay. Amy has a uterine infection that forces her to have a hysterectomy, but her ovaries remain intact and functional. Amy and Andrew want to have their "own" children, and Jane has agreed to act as a gestational surrogate mother. Amy plans to have her eggs recovered for fertilization in vitro with her husband Andrew's sperm. The fertilized eggs will then be introduced into Jane's uterus for implantation. Jane will carry the fetus to term and then give the baby over to Amy and Andrew so that they can raise their "own child."

From the previous scenario of Florence and Gail, we learned that identical twin sisters both can be considered genetic mothers of any child conceived from eggs produced by either woman. This means that a child conceived by in vitro fertilization with Amy's egg and Andrew's sperm would have the same genetic heritage as one conceived through the fertilization of Jane's egg by Andrew's sperm, which could be accomplished by artificial insemination.

What does Amy do? Artificial insemination is cheaper and much less intrusive than IVF for both women. The child born in either case will have the same birth mom and the same pair of gene-moms. So what difference does it make?

Amy may try to argue that although she and her sister share the same genes, she wants to use her egg so that her child receives the particular DNA molecules that she produced in her own body. This argument does not work because, for the most part, the particular DNA molecules present in a human egg don't actually end up in the body that it develops into.[15] Even with this knowledge, Amy may still want to

15. In the fertilized egg that eventually develops into a child, a mother deposits just

contribute her *own* egg to this collaborative reproduction arrangement. Though a child conceived from Amy's egg will be indistinguishable by any imaginable test from a child conceived from her sister's egg, Amy may feel that she needs to make some *physical contribution* to her child, however ephemeral that contribution might be and however irrational her feelings might seem to us.

In fact, rationality has nothing to do with it. This feeling is based on the primeval instinct programmed into Amy's genes that makes her want to have her "own" child. This instinct evolved when the distinction between "one's own child" and "someone else's child" was crystal clear. While the evolutionary purpose served by this instinct is the increased transmission of our genes to offspring, the instinct itself operates on the *physical connection between mother and child*. This fact explains why Amy may want that physical connection instinctually, even though it makes no difference to the transmission of her genes.

TWIN BROTHERS, SHARED TESTICLES, AND AN UNUSUAL CURE FOR STERILITY

Let's consider one final twins scenario. This true story began in 1947 when one Mrs. Twomey gave birth to her identical twin sons Tim and Terry. Like all pairs of identical twins, Tim and Terry looked pretty much alike and it was hard to tell them apart from each other. But Tim and Terry were critically different in a way that was hidden from most

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a single copy of DNA for each of the 23 human chromosomes. A second set of 23 DNA molecules is deposited in this same egg by the genetic father. The information present in each of these 46 DNA molecules is then copied over time into 100 million million (100,000,000,000,000) *new* sets of DNA molecules that are placed into each new cell formed during fetal and child development. Each of these new DNA molecules is built from raw materials that are recovered from the food that the mother, and then the child, consumes.

Where do the 23 DNA molecules that actually come from the mother end up? Well, most — if not all — of them disappear long before the child is born. Fewer than one out of eight cells in the early embryo actually ends up in the fetus. The remaining cells — with at least 87% of the original parental DNA — are channeled into the placenta or uterine linings, which are ejected from the mother's body and discarded as medical waste, after birth. And, of the motherly DNA molecules that survive into the fetus itself, many are placed into short-lived cells such as those in the blood, skin, or intestines, which constantly degenerate to be replaced by newly made cells. When cells die or are discarded, the DNA molecules within them disintegrate into the small molecules, or single atoms, from which they were originally built-up. Thus, at most, only a tiny fraction of original DNA molecules from the mother survive in a few scattered cells among the 100,000,000,000,000 present in the child's body. *See generally* SILVER, *supra* note 11, at 288.

of the world — Tim was born without testicles as a result of a rare developmental abnormality that occurred in his mother's womb.[16]

With the help of modern medicine, Tim was able to lead an outwardly normal life. At the age of eighteen, he began to receive weekly injections of the hormone testosterone, which allowed him to go through puberty (at a late age), and as he grew older, continued injections of the hormone provided him with the ability to engage in a normal sex life. At the age of twenty-nine, Tim married Jannie. In the meantime, Tim's brother Terry had married and become the father of three children.

At the time of their marriage, Jannie and Tim were convinced that they would never have children of their "own." For five years, Tim had been searching without success for a medical authority who could treat his infertility problem. Shortly after his marriage, he contacted Dr. Sherman Silber, a urologist and skilled microsurgeon who was noted for his ability to reverse vasectomies by delicately re-connecting the severed tubes. Dr. Silber said that he might be able to cure Tim's sterility by transplanting one of Terry's testicles into Tim's scrotum. No one had ever performed such an operation before, and the obstacles to connecting both sperm and blood vessels were enormous. However, Terry and Tim both agreed to undergo the procedure, and on May 17, 1977, Dr. Silber successfully performed the transplantation.[17] Within a few months, Tim achieved a normal sperm count in his ejaculate, and he no longer needed hormonal injections to maintain his secondary sexual characteristics. On March 25, 1980, Tim and his wife Jannie had a baby boy whom they named Christopher Gene.[18] If genetic tests were ever performed, they

16. The medical term *anorchia* is used to describe the condition of a boy who is born without testicles but with a penis. *See* STEDMAN'S MEDICAL DICTIONARY 95 (Marjory Spraycar et al. eds., 26th ed. 1995). Fetal development of a penis can only occur in the presence of testicular tissue. Thus, immature testes must have been present in the developing fetus, with degeneration occurring for unknown reasons prior to birth. In the particular case of Tim Twomey, it is clear that degeneration had to be caused by non-genetic factors since the same medical conditions did *not* appear in his identical twin brother.

17. *See* Sherman J. Silber, *Transplantation of a Human Testis for Anorchia*, 30 FERTILITY & STERILITY 181, 181–87 (1978).

18. An interesting side note is that even after Tim's sterility problem was cured, the Twomeys were still unable to achieve pregnancy because of a subsequently discovered problem with Jannie's menstrual cycle. This problem was eliminated with appropriate medical treatment, and the Twomeys achieved pregnancy a few months later. *See* Sherman J. Silber & Louis J. Rodriguez-Rigau, *Pregnancy After Testicular Transplant: Importance of Treating the Couple*, 33 FERTILITY AND STERILITY 454, 454–55 (1980).

would show, without a doubt, that Christopher Gene was indeed Tim's son.

How should Tim feel about this child? Should he consider Christopher "his own" son or his brother's? Would he have felt the same way if the testicular transplantation had not been possible and his child was born after his wife was artificially inseminated with his brother's sperm? Or was the production of sperm within his own scrotum necessary to set up the physical connection that allowed him to consider the child "his own"?

The facts certainly suggest that Tim would have viewed a child born by artificial insemination of his wife with Terry's sperm *differently* from the child that he gave life to himself. But why should he feel this way when "his sperm" actually came from Terry's testicle?

Again, how we think a person *should* feel rationally need not bear any resemblance to how a person *does* feel when primeval instincts prevail. Although genes drove early members of our species to desire children of their own, the kinship between parent and child was defined instinctually through the physical connections imparted by semen, gestation, and birth. Only today can we think abstractly about the genes that sit at the root of inheritance. But when intellectualization conflicts with the primeval instinct for a physical connection to one's child, we are apt to become utterly confused.[19] There is nothing profound about this confusion. It is simply one more way in which the modern world fails to play by the rules under which we evolved.

What all three of these twin stories make clear is the futility of trying to come up with modern definitions for "one's own child." In the end, whether a child is one's own or not is determined simply by the way a parent feels, no matter where or how gamete differentiation or fetal development took place.

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19. The philosopher Kenneth Alpern has described other interesting "genetic puzzles" which also confuse the meaning of "one's own child." *See* KENNETH D. ALPERN, THE ETHICS OF REPRODUCTIVE TECHNOLOGY 147–69, 160 (1992). The most thought-provoking of these is one in which a person walking down the street happens to discover a baby in a stroller with a genetic makeup that is identical to her own, just by chance. In a variation of this scenario, one can imagine that the baby actually shares only half of its genetic material with the person walking down the street, so that it would appear — by all imaginable tests — to be that person's child. Alpern asks whether the person should view this child as "her own," even if she has no reproductive link to it. He concludes that "[t]he science of genetics certainly does not provide full answers to the questions that we have been asking." *Id.* at 164. In fact, Alpern is wrong in his conclusion because of a failure to appreciate the distinction between the *ends* (increased transmission of genes) and *means* (the instinctive desire to have children that are physically connected) that operated during the process of evolution.

WHO ARE THE PARENTS OF A CLONE?

At a United States Senate hearing on cloning that was convened within a week after the announcement of the birth of the first animal cloned from an adult cell, George Annas, a lawyer and bioethicist at Boston University, warned the senators that cloning a person "would radically alter the very definition of a human being" by producing the world's first human with a single genetic parent.[20] However, Professor Annas might not have considered all of the possibilities cloning engenders in his statement. The picture that probably formed in Professor Annas' mind was of a woman or man holding a baby who was genetically identical to that adult. It might seem that this adult should be considered the genetic parent of the baby, but what about a situation in which parents decide to expand their family with a clone of a child they already have. Would the older child be the parent of the younger child, or would the two children simply be identical twins (of different ages) with the same genetic mother and father? In both cases, cloning from a somatic cell of a living person will have taken place. The only difference will be the social situation in which the child is raised relative to the individual who "donated" the cell that initiated the cloning process.

Professor Annas seems to be confused by the multiple types of mothers that a child can have. If a woman gives birth to a clone of herself, then she is clearly the baby's birth-mother. And if she raises the child herself, then she is clearly the baby's social mother as well. In genetic terms, however, the woman is not the baby's mother. Rather, she is the baby's earlier born identical twin. This means that the baby's genetic parents are actually the same as her mother's parents. And it also means that all cloned children will have two genetic parents just like all children who are conceived naturally. In fact, cloned children will be indistinguishable from all other children by any biological test or criteria.

Describing the genetic relationship that clearly exists between the cloned person and the person who contributed the cell for cloning is problematic. We could say simply that they are identical twins — which they invariably are — and leave it at that. However, this term fails to express the directionality of the relationship, in which the genetic material flows from a person already alive toward the initiation of the life of another. To convey this special relationship, I use the terms "genetic progenitor"' to describe the person whose cell was used for

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20. Earl Lane, *Senator: Human Clones OK / But Scientists Tell Panel: For Animals Only*, NEWSDAY, Mar. 13, 1997, at A8.

cloning, and "genetic descendant" to describe the person who emerged from that cell. It's important to keep in mind the fact that the social role played by a genetic progenitor can be that of either parent or a sibling depending on the age of the progenitor and the circumstances under which cloning occurred. (As I argue below, it is the social relationship that should ultimately be determinative of the legal relationship between the clones. If the older clone acts as a social mother, than the younger clone should have all rights of inheritance from the older, as any naturally conceived child would. If the two clones are raised socially together as siblings, then the law should treat them as such as well.)

The genetic consequences of cloning can be strange indeed. When a cloned child is raised by her adult progenitor who becomes her social mother, a generation becomes duplicated on the family tree. The child's social grandparents will be her genetic parents. And when the child grows up and is ready to have her own children, she will have to contend with the fact that all her children will also be the genetic children of her mother-progenitor. Finally, there's the unusual situation that is sure to happen some day when a woman decides to clone herself after she has already had children by natural conception. The child that is born will become the genetic mother of her older brothers and sisters.

Although one might be inclined to rush to use genetic strangeness as a reason for banning the practice of reproductive cloning, consideration should be given to the fact that non-traditional genetic relations between children and parents are all around us at the end of the twentieth century, and society has not suffered. Children conceived through sperm or egg donation are genetically linked to only one social parent — just like those born through cloning — but they can still have two parents. In the absence of any genetic link at all, adopted children also still call their social parents mom and dad. On the other side of the equation, no child views their father's identical twin brother as a second father (even though they should based on genes alone). In Western society, children, brothers, sisters, parents, grandparents, and all other family relations are defined by social circumstances, not genes. Thus, it is the persons who act as the social parents — no matter what their genetic relationship to the child — who should be considered the legal parents in terms of rights and responsibilities.

ALTERNATIVE MODES OF REPRODUCTION: FUTURE POSSIBILITIES

Cloning is just one new way in which some people of the future will choose to reproduce. Many happily-bonded couples view the birth of a child who brings together their genetic material as the ultimate consummation of their love for each other. And when barriers lie in the way of achieving this goal, many couples will do anything within their power to overcome them. A certain type of happily-bonded couple, however, has never even considered the possibility of joining their genes together in a child — same-sex couples.[21]

Most people think it is biologically impossible for two unrelated women (or men) to pass on their genetic material together to a single child. However, the future possibilities of reproductive technologies are almost unlimited. By now, you can probably guess that there must be some way for reprogeneticists to work their wonders and overcome the biological "law" that decrees only a single maternal and paternal contribution to each embryo and child. The following story explains how it could be done.

CHERYL AND MADELENE'S BABY

The date is Tuesday, September 15, 2009. The city is Cambridge, Massachusetts. Cheryl and Madelene have arrived early for their appointment at a private IVF clinic in the area, and they're both bubbling over with excitement, as well as hormones.

Cheryl is a thirty-eight-year-old theoretical physicist. Earlier in the year, Harvard University had granted her tenure, which provides job security for the rest of her life. She had been working single-mindedly toward this goal for as long as she can remember; certainly longer than her relationship with Madelene, with whom she has lived for eight years. Now, with tenure in hand, Cheryl was suddenly freed to think about things — other than science — that she wanted to accomplish in her life. The one thing that loomed larger than all the others was the desire to have and raise a child.

Madelene is a thirty-four-year-old elementary school music teacher and a singer in a local rock band. She had resigned herself to the fact

21. Although at the time of this writing, there were no publicized cases of shared *genetic* motherhood, there was at least one attempt at shared *biological* motherhood between members of a same-sex couple. A lesbian couple asked an IVF practitioner to retrieve eggs from one of them , fertilize the eggs with donor sperm, and then introduce them into the uterus of the second woman. The resulting baby would then be raised by two biological mothers — one would be her gene-mom, the other her birth-mom — who would "share in the experience of motherhood." Unfortunately for this couple, the physician took their request to his hospital's ethics review board which ruled against it. *See* Lorraine Fraser, *Will Baby-Making Turn into Social Engineering?*, MAIL ON SUNDAY (LONDON), Aug. 25, 1996, at 8. Although this couple failed in their attempt to reach their reproductive goal, it seems likely that others have pursued the same goal with success, away from the eyes of the press and close-minded male medical personnel.

that she would never have children of her own. Madelene shares everything in her life with Cheryl. Although she would have loved to have had a child, she couldn't imagine raising a child unless she and Cheryl could both call it their own, but that had seemed impossible.

Cheryl was the first to raise the topic of having children in April 2009, and over the next two months, she and Madelene discussed their options. They considered adoption, but realized that, due to their age and lifestyle, their chances of getting an agency to consider them for a healthy child were negligible. They considered artificial insemination, but neither Madelene nor Cheryl liked the idea that only one of them would be the biological mother, while the other would have no biological connection to the child at all.

Then Cheryl had lunch with a professor, and good friend — Mally Meselbert — from Harvard's Biochemistry department. Mally listened to Cheryl's lament about her childlessness. Almost at the beginning of her monologue, Mally had thought up a technical solution that would satisfy both his colleague and her partner. He decided that Cheryl and Madelene had the right to make their own judgments about consequences. So he proceeded to explain how scientists working with mice, sheep, goats, and cows had perfected the technology of embryo fusion, and how occasionally, two human embryos could fuse naturally inside a woman's body, with the resulting birth of a fully viable and healthy child.

Cheryl listened in amazement. The implications were clear enough, and Cheryl asked just a single question: "Do you think we could find a fertility clinic that would be willing to work with us on this?" Mally thought for a moment and suggested a very talented fertility specialist named Dr. Ricky Shapiro who operated her own reprogenetics clinic just outside the Harvard campus.

A summer filled with discussion, choices, and preparation is now over, and Cheryl and Madelene wait their turn at the clinic. Finally, the receptionist motions them in. Dr. Shapiro is waiting for them in the clinic's egg retrieval & transfer room. They toss a coin. It comes up tails, and Cheryl is the one to go first. She changes out of her clothes and into a standard hospital gown. Dr. Shapiro helps her onto the table and prepares her for egg retrieval. The ultrasound view of her left ovary comes onto the monitor and Dr. Shapiro smiles at the sight of lots of fluid-filled sacs, sitting on the surface, each containing a single mature egg. Dr. Shapiro goes to work — first on the left ovary and then the right — and within fifteen minutes, she has recovered twenty-three beautiful eggs. These eggs are quickly escorted into the body temperature incubator in the lab next door to await their fate.

Madelene's turn is next. This time Dr. Shapiro can only recover sixteen eggs, but she is confident that they are sufficient for the task at hand.

The time has come for fertilization, and Dr. Shapiro removes the tube containing the specially prepared sperm from the liquid nitrogen storage tank and plunges it into a small metal basin holding body temperature water. Cheryl and Madelene have been allowed to watch the entire process, and as the sperm thaw, they recall the many hours they spent pouring over the online Cryobank sperm donor catalogue for the sample that was best suited for them.

They finally decided on a senior majoring in physics at MIT, with a straight-A average, who took first prize in a state-wide contest for piano playing as a high school student. Cheryl and Madelene realized nothing was guaranteed, but they were intrigued by the possibility of enhancing their separate talents together in their child.

Cheryl and Madelene had decided on a girl. As a first step toward making this goal easier to achieve, they had asked the sperm bank to provide Dr. Shapiro with a fresh semen sample from their chosen donor. The sample had arrived two weeks earlier and was immediately placed into a machine called a flow cytometer, which separates sperm cells into two groups that are ninety percent enriched for either the X or Y chromosomes.[22] The X-enriched sperm sample was recovered and stored frozen in liquid nitrogen for two weeks. Now the thawing process is concluded and living, swimming sperm come into view in the portion of the sample that is examined under the microscope by Dr. Shapiro's technician, and then by Cheryl and Madelene as well.

The special sperm are drawn up into a pipette and a portion is released first into the dish containing Madelene's eggs, and then into the dish containing Cheryl's eggs. The two dishes are covered and placed back into the darkness of the incubator. The day's activities are now over. Cheryl and Madelene return to their home to wait patiently, miles away, as their embryos proceed slowly through fertilization and early development.

Three days later, they return to the clinic. Each properly fertilized egg has now turned into an eight-cell embryo. At this point, the embryos from both dishes are examined under the microscope and each healthy-looking one is transferred to an individually numbered compartment. Now, one-by-one, each embryo is held steady as a cell is plucked away for genetic diagnosis. Twenty-four samples — representing fifteen

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22. *See* Gene Levinson et al., *DNA-Based X-Enriched Sperm Separation as an Adjunct to Preimplantation Genetic Testing for the Prevention of X-Linked Disease*, 10 HUMAN REPRODUCTION 979, 979–82 (1995).

surviving embryos from Cheryl and nine from Madelene — are sent to the molecular diagnostics lab. Diagnosis was possible on eleven of Cheryl's embryos, and the results are: nine females and two males. Only six of Madelene's embryos could be diagnosed, but all are female.

Without a word being uttered, Cheryl, Madelene, and Dr. Shapiro know that the possibility exists to create six chimeric girl-girl embryos. Silently, Dr. Shapiro goes to work. She looks at the test results to note which of the compartments on Cheryl's dish contain "girl embryos." She scans the dish, picks up one, and moves it to a new dish with fresh fluid. She then moves one of Madelene's embryos to the same dish. The two embryos are now exposed to a special chemical which dissolves their zona coats, and they are finally ready for the big event. With a gentle nudge, Dr. Shapiro pushes Cheryl's embryo into Madelene's. On making contact, the two embryos stick together instantly. What were two living things — a moment ago — are now just one.

The merged embryo is given a new artificial zona coat and set aside on the dish to await the formation of its sisters. Over the next fifteen minutes, Dr. Shapiro repeats the same delicate process five more times. When she is finished, there are six new embryos that belong equally to Cheryl and Madelene.

A few hours of further incubation are allowed to pass in order to make sure that each merger has occurred successfully. Then, the time has come for the final procedure. In advance, Cheryl and Madelene had decided together that if only two embryos were available, they would be introduced into Cheryl's uterus. But, if there were more, it would be possible for both Cheryl and Madelene to receive embryos in the hope that at least one would "take."

After going over the available statistics on pregnancy rates achieved with the use of IVF by fertile couples, Cheryl and Madelene decide that they will each have two embryos introduced into their wombs. They realize that they could have as many as four children as a consequence, but Dr. Shapiro assures them that this is extremely unlikely and that the number could be reduced by selective abortion, if they so desired.

For a week after their return from the clinic, Cheryl and Madelene can do nothing but wait with building anxiety. Will either become pregnant? Will their hoped-for child be born healthy and normal? Will their family be accepted by the community in which they live? And then the first signs appear. On the same morning, Cheryl and Madelene wake up — before dawn — with a feeling of queasiness. It is the signal they've been waiting for. The pregnancy test that each woman performs confirms the obvious.

But their ecstasy is now held in check by new and different fears. How many embryos are growing within them? Will a miscarriage take place? With a mixture of excitement and anxiety, they live through another three weeks before ultrasound can give them the answer to their first question. Together they return to Dr. Shapiro's clinic. This time Madelene is the first one onto the table. The scan picks up just one little sac with a tiny beating heart. Cheryl has her turn, and again, there is but a single embryo, with a tiny beating heart.

With the results visible on the ultrasound monitor, there is palpable relief across the room. Cheryl and Madelene quickly agree that bringing non-identical twins into the world is probably even better than a singleton, since the two sisters will be able to grow up with each other.

A month later, Cheryl and Madelene undergo a final test to obtain confirmation that the fetus in each is really all-girl. They return to the clinic for what they hope will be the last time before their girls are born. Chorionic villus sampling ("CVS") is performed on each woman to recover cells produced by each fetus. A few hours later, the results come back. Each fetus is truly a mixture of cells from both mothers, and each is all-girl.

The next seven months pass by uneventfully. Cheryl is the first to go into labor. On June 1, 2010, she gives birth to a baby girl, weighing nine pounds, two ounces. Cheryl and Madelene name her Eve. Even though Eve is quite special inside, she is just one more precious baby on the maternity ward. Five days later, it is Madelene's turn. Her baby is smaller, just six pounds, eleven ounces. Cheryl and Madelene name her Rebecca.

THE ABSURDITY OF GENETIC OWNERSHIP

In democratic societies, people have the right to reproduce, and the right to *not* reproduce. This last "right" means that men and women cannot be forced to "have a child" against their will. In genetic terms, this right devolves from a sense that a person "owns" his or her own genes and cannot be forced to contribute them to a child.

Based on this logic, some argue that it would be unethical for a woman to clone herself without first getting permission from her own parents, because her clone would be — in genetic terms — her parents' child. But this argument is logically flawed. As discussed earlier, every time a member of an identical twin pair has a child, she is also passing on the genes of her sister or brother, yet no one would suggest that the prospective parent needs to obtain permission to reproduce from her sibling. Indeed, every time any person has a child, she or he is passing on the genes of their parents and grandparents, etc.

The various scenarios that I have presented here serve to point out serious contradictions in the way we think about genetic ownership and negative reproductive rights. The psychological power of the genes lies far out of proportion to their actual contribution to relationships established between individuals. We should keep in mind that while a child is 99.95 percent the same as its genetic mother at the level of the DNA molecule, it is also 99.90 percent the same as any randomly chosen person on the planet earth. Ultimately, social circumstances are far more important than genes in determining who calls whom mother, father, sister, brother, daughter or son.

LEGAL ANALYSIS

How does a court sort through this mind-boggling mixture of parents and children? The basic legal principles should be the same regardless of the biotechnological means used to bring a child into this world.

However, we are now operating in a legal vacuum where many parties have not signed written agreements that set forth their intentions if circumstances change or if things go wrong with the embryos or children born through new reproductive procedures. In addition, science continues to outpace most legislatures' ability or willingness to promulgate laws in this area.

No matter what a court may think of artificial insemination, gene splicing, cloning, or any other reproductive technique, if a live child has been born as a result of reproductive procedure, courts will be faced with the problem of determining lawful parentage. As the California Court of Appeals stated in *Buzzanca v. Buzzanca*:[23] "A child cannot be ignored . . . . These cases will not go away."

We suggest that a court evaluate these "custody" cases differently depending on whether a child has been born from the new reproductive procedures, whether a sperm, egg, or embryo is not within a human body, or whether a pregnancy is underway.

At the outset, it is important to distinguish between a custody fight over a child and a court determination of a parent's legal responsibility. When a child is born, a court should still apply the same "best interest of the child" standard that courts have traditionally used to determine which parent should have custody. However, with the new reproductive technologies, it is not always clear who has parental rights. Do both genetic mothers and birth mothers have parental rights? Is the "father" the husband or the sperm donor? If human cloning becomes possible, is it the progenitor of the clone or her parents who are the child's mother? A court's first task must be to determine the identity of the

23. 72 Cal. Rptr. 2d 280, 293 (Ct. App. 1998).

parents. Once a parental identity is established, a court can then determine how the parents should share the rights and responsibilities of parenthood.

We propose that, in determining legal parenthood, a court should look to the intent of the parties when they consented to the reproductive procedures that resulted in the birth of a child.

This was the approach the California Court of Appeals took in *Buzzanca*. In that case, the court had to determine legal parenthood for a child born with five parents of different types. An infertile couple used an anonymous egg donor, an anonymous sperm donor, and a surrogate mother to carry "their" child to term. While the surrogate mother was pregnant, the couple divorced, and the former wife sued her former husband for child support. The trial court reached the extraordinary conclusion that the baby was a legal orphan with no lawful parents since neither the wife nor the husband contributed their genes and had no biological tie to the child. Therefore, the husband had no financial responsibility for the child.[24]

The California Court of Appeals reversed and held the husband responsible for child support. The Court established a rule that looked to the intentions of both the wife and the husband. The Court explained that when the husband and wife consented to the medical procedure that resulted in the birth of a child, they had the *intention* of creating a child who they would raise and support.[25]

It made no difference to the court that the husband had no genetic tie to the child. The Court analogized the husband's role in the child's birth to that of a man who casually sleeps with a woman knowing she may become pregnant. If such men can be forced to pay child support (as they are in every state in the country), then John Buzzanca should be liable for the support of the child, Jaycee. As the court explained, "John caused Jaycee's conception every bit as much as if things had been done the old-fashioned way."[26] By consenting to artificial insemination with donor gametes and a surrogacy arrangement, the husband incurred the legal status and responsibility of fatherhood. Thus, perhaps intent matters more than genes when children are brought into the world through the use of new reprogenetic technologies.

In the context of a live birth and questionable parenthood — the situation in *Buzzanca v. Buzzanca* — a parental intent rule makes good sense. As the California Court of Appeals explained in *Buzzanca*, the intent of the parent "correlates significantly with the child's best

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24. *See id.* at 282–83.
25. *See id.* at 291.
26. *See id.* at 288.

interests."[27] The Court noted that its decision was also in accordance with the compelling state interest to establish paternity for all children to promote family stability and to spare the taxpayer expense of supporting parentless children.

However, a court must treat frozen embryo cases differently because there is no child at the heart of the custody or child support dispute. Technically speaking, one cannot be a parent unless there is a child. *Black's Law Dictionary* defines "parent" to mean "the lawful father or mother of a *person*."[28] Similarly, the Fourteenth Amendment states that "nor shall any State deprive *any person* of life, liberty, or property, without due process of law."[29] Since the embryo is not considered a person, it cannot have parents (in the same way that a living tissue outside a human body cannot have parents).

Although a frozen embryo has no "parents," it does have two genetic contributors (unlike a heart). When one party wants to discard the embryos and the other wants to implant them, a court needs a method to determine which party has a right to control the embryos' disposition. Clearly, a parental intent rule cannot apply. At the time a couple retrieved their eggs and sperm to create the frozen embryos, their *intent* was to initiate a medical procedure that would result in the live birth of a child. If a parental intent rule applied, the embryos would always be implanted. The partner who wanted the embryos born would always win, and the partner who did not would always lose.

The problem is that a person has both a constitutional right to procreate,[30] as well as a constitutional right (albeit limited) not to procreate.[31] How should a court balance these diametrically opposed and equally valid constitutional rights?

We suggest that the standard recently proposed by the New York State Task Force on Life and the Law strikes the wrong balance.[32] The New York Task Force recommended the adoption of regulations that require both partners to jointly agree to any use of ex utero embryos and that no embryo should be implanted, destroyed, or used for research over either partner's objection. In other words, if one party wishes to implant

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27. *See id.* at 289–90.

28. BLACK'S LAW DICTIONARY 1114 (6th ed. 1990) (emphasis added).

29. U.S. CONST. amend. XIV, § 1 (emphasis added).

30. *See Stanley v. Illinois*, 405 U.S. 645, 651 (1972); *Skinner v. Oklahoma ex rel. Williamson*, 316 U.S. 535, 541 (1942).

31. *See Planned Parenthood v. Casey*, 505 U.S. 833, 869 (1992); *Roe v. Wade*, 410 U.S. 113, 153 (1973).

32. NEW YORK STATE TASK FORCE ON LIFE AND THE LAW, ASSISTED REPRODUCTIVE TECHNOLOGIES: ANALYSIS AND RECOMMENDATIONS FOR PUBLIC POLICY (1998) (on file with authors).

an embryo, and the other party objects, the objecting party will always win the dispute.

While we agree that a party's constitutional right not to procreate should trump in most cases, the New York Task Force's proposal fails to acknowledge that there may be exceptional circumstances where the party who desires implantation should prevail.

The Tennessee Supreme Court took a more nuanced approach and balanced the parties' interests in *Davis v. Davis*.[33] In *Davis*, the court had to decide the fate of frozen embryos that Mary Sue and Junior Davis produced by in vitro fertilization before their divorce. Mary Sue originally asked for control of the embryos so she could have them implanted in her "in a post-divorce effort to become pregnant."[34] Neither Mary Sue nor Junior executed a written agreement to establish how the embryos should be treated, nor did Tennessee have any statute on point.[35]

The Tennessee Supreme Court wrestled with the issue, acknowledging that the frozen embryos could not be considered either "property" or "persons" under Tennessee Law.[36] The Court noted that Mary Sue's contribution of her egg and Junior's contribution of his sperm were entirely equivalent contributions.[37] The Court also held that the parties' constitutional right of procreational autonomy is composed of two rights of equal significance — the right to procreate and the right to avoid procreation.[38]

The Court held that "[o]rdinarily the party wishing to avoid procreation should prevail, assuming that the other party has a reasonable possibility of achieving parenthood by means other than use of the preembryos in question."[39] It is only if "no other reasonable alternatives exist," that the use of the embryos to achieve pregnancy "should be considered."[40] Based on this reasoning, the Court decided in favor of Junior Davis and his wish to discard the embryos.[41] The factor that tipped the scales was the remarriage of Mary Sue, who no longer wanted to implant the embryos in her own uterus. Instead, she wanted to donate the embryos to a childless couple. The Court acknowledged that "the case would be closer if Mary Sue Davis were seeking to use the

33. 842 S.W.2d 588 (Tenn. 1992).
34. *Davis*, 842 S.W.2d at 589.
35. *See id.* at 590.
36. *See id.* at 594.
37. *See id.* at 601.
38. *See id.*
39. *Id.* at 604.
40. *Id.*
41. *See id.* at 604.

preembryos herself, but only if she could not achieve parenthood by any other reasonable means."[42]

The right to procreate and the right not to procreate cannot be held equal in every circumstance. Rather, in the case of frozen embryos or any other ex utero reproductive scenario, a court should consider which party has a constitutional right that, once lost, can never be regained. This will always be true for the party who wants to exercise his or her constitutional right *not* to procreate. As the intermediate appeals court noted in *Kass v. Kass*, "[o]nce lost, the right not to procreate can never be regained. It is the irrevocability of parenthood that is most crushing to the unconsenting gamete provider."[43] As one commentator noted, "[o]nce a child is born, there is no way to end biological ties, and very few ways to end emotional ones."[44]

In contrast to the irrevocable loss of the nonconsenting party, a party who desires parenthood could usually retrieve her eggs (or his sperm) again to create a fertilized embryo with a third party and to have a child of her (or his) own. Therefore, a decision to discard a particular set of frozen embryos would not irrevocably deny that party a chance to exercise his or her constitutional right to procreate in the future. This would also avoid the need for a court decision that forces a person like Junior Davis to become a parent by court order and against his will.

A court should not consider the prospective parent's cost or inconvenience if he or she is required to re-create embryos through in vitro fertilization or another reproductive procedure. This cost and inconvenience, though substantial, should not trump the other party's constitutional right not to procreate.

However, there will be some situations where a party seeking parenthood has a medical condition that precludes the production of new eggs or sperm. We suggest that the party seeking embryo implantation should establish as a threshold matter that he or she cannot create a new embryo with a new partner or gamete donor. Once such a showing is made, the balance weighs more heavily in favor of the person seeking parenthood because if that person's frozen embryos were discarded, he or she would also lose a constitutional right — the right to procreate — that could not be regained. How then should a court rule?

When both parties have irrevocable constitutional rights at stake, a court should then evaluate if either party has any particular circumstance

42. *Id.*

43. *See* Kass v. Kass, 663 N.Y.S.2d 581, 592 (App. Div. 1997).

44. *But see* Jennifer L. Carow, Davis v. Davis, *An Inconsistent Exception to an Otherwise Sound Rule Advancing Procreational Freedom and Reproductive Technology*, 43 DE PAUL L.REV. 523, 566 (1990).

that bolsters the strength of his or her case. As the Tennessee Supreme Court recognized in *Davis v. Davis*:

> Resolving disputes over conflicting interests of constitutional import is a task familiar to the courts. One way of resolving these disputes is to consider the positions of the parties, the significance of their interests, and the relative burdens that will be imposed by differing resolutions.[45]

In the *Davis v. Davis* case, the Tennessee Supreme Court found it relevant that Junior Davis' parents divorced when he was a young child, that he was raised in a home for boys, and that he only had sporadic visits from his father. In light of his boyhood experiences, the Court found that Junior Davis was vehemently opposed to fathering a child that would not live with both parents.[46] The Court also found it relevant that Mary Sue Davis had not demonstrated that she could not undergo a new round of IVF or indicated to the Court that adoption was an unsatisfactory option since the couple had pursued adoption earlier in their relationship.[47] The Court also found that Junior Davis' desire to avoid parenthood was a stronger interest than Mary Sue's interest in donating their frozen embryos to another childless couple.[48] A balancing of these factors led the Court to rule in Junior Davis' favor.

We believe that, in those cases where the party seeking parenthood has demonstrated that he or she has no other opportunity to have a biological child, a court should inquire why the other party opposes parenthood. If the non-consenting party simply wants to avoid having custody or financial responsibility, a court could convert the party's status from being the *parent* of a frozen embryo to being an "egg donor" or "sperm donor" without the custody or financial obligations of parenthood.

This is similar to the approach adopted in a number of state statutes that divest sperm donors of all parental rights and responsibilities if a licensed physician uses the donated sperm to assist a married couple.[49] Other states divest the sperm donor of all parental rights and obligations regardless of the mother's marital status. This was also the

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45. 842 S.W.2d at 603.

46. *See id.* at 603–04.

47. *See id.* at 604.

48. *See id.*

49. *See, e.g.*, N.J. STAT. ANN. § 9:17-44(b) (West 1993); N.Y. DOM. REL. LAW § 73(1) (McKinney 1996).

recommended status for sperm donors set forth in the model law, the Uniform Status of Children of Assisted Conception Act ("USCACA"), adopted by the National Conference of Commissioners of Uniform State Laws in 1988.[50]

We suggest that this approach be expanded to allow parties to agree that the party opposing parenthood can be free of all parental obligations so that person could consent to his or her partner's desire to have frozen embryos implanted so they could be brought to term. Although some courts have held that the right of child support belongs to the child, and parents cannot contract away rights vested in their children,[51] neither sperm, nor eggs, nor embryos have the rights of "children." Alternatively, the non-consenting parent of a frozen embryo could terminate his or her parental rights, as a parent does when a child is placed for adoption. This would clear the way for the party seeking parenthood to arrange for the embryos to be implanted without any objection from the party who wishes to avoid parental obligations. This option, however, would not result in a satisfactory solution if the non-consenting parent had philosophical or psychological objections to parenthood. As one commentator acknowledged, "[e]ven if no rearing duties or even contact result[s], the unconsenting partner will know that biologic offspring exist, with the powerful attendant reverberations of guilt, attachment, or responsibility which that knowledge can ignite."[52] Therefore, a parent could have very legitimate reasons why they do not want a frozen embryo implanted and allowed to come to term. While a conversion to gamete donor status or a termination of parental rights may be a solution for some non-consenting parties, it will obviously be an unsatisfactory resolution for others.

The rules change once an embryo is implanted in a surrogate mother. What should a court do if the contracting parents (one or both) want the surrogate mother to abort their child? What if the surrogate mother herself wants to abort the fetus in her womb, and the gene mom or gene dad object?

In either scenario, the surrogate mother has personal privacy and liberty interests in her own bodily integrity, and she should have the same privacy and liberty rights as any other pregnant woman. Therefore, the surrogate mother should not be forced to abort her pregnancy against her will in any circumstance. Even if the contracting

50. UNIFORM STATUS OF CHILDREN OF ASSISTED CONCEPTION ACT § 4(a) (1988).

51. *See* Clardy v. ATS, Inc. Employee Welfare Benefit Plan, 921 F. Supp. 394 (N.D. Miss. 1996); Pascale v. Pascale, 660 A.2d 485 (N.J. 1995).

52. John A. Robertson, *In the Beginning: The Legal Status of Early Embryos*, 76 VA. L. REV. 437, 479 (1990).

parents request an abortion, the surrogate mother still has a right to bring the pregnancy to term, and the *Buzzanca* parental intent rule should apply since a live child is born as a result of the parent's consent to a medical procedure and surrogacy arrangement. Once the surrogate mother becomes pregnant, it is too late for the parents to change their mind, and they should retain responsibility for the care and support of their child.

Nor should the surrogate mother be forced to carry to term the contracting parent's fetus against her will, provided the fetus has not yet reached viability. The Supreme Court in *Planned Parenthood v. Casey*,[53] held that a woman had a right to terminate her pregnancy up until the fetus' viability, because at that point the state's interest in protecting potential life overrides the rights of the pregnant woman.[54] The Court in *Casey* weighed the competing interests of the state and a pregnant woman — we feel that a court should apply a commensurate balancing test to weigh a surrogate mother's interest against the important and legitimate interests of the genetic parents who wish to protect their fetus once it reaches the point of viability.[55]

In conclusion, with the new reproductive technologies already in use and with others on the near horizon — like cloning and embryo fusion allowing same-sex shared parenthood — many people will reach previously unobtainable reproductive goals. Unfortunately, as with all types of human agreements and arrangements, future cases of conflict will certainly arise among the parties involved in these new reproductive practices. New reproductive technologies blur our current notions of "mother," "father," and "child." As a consequence, definitions of familial relationships based on genes alone no longer suffice to resolve many of the problems that are sure to arise. But when courts must

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53. 505 U.S. 833 (1992).

54. *See Casey*, 505 U.S. at 870.

55. We note that both with the frozen embryo cases and the surrogate mother cases, the "interests" of the embryo do not factor in the balance at all. In *Roe v. Wade*, the Supreme Court concluded that "[t]he unborn have never been recognized in the law as persons in the whole sense," and withheld from the fetus the legal protections traditionally accorded to persons born alive. Roe v. Wade, 410 U.S. 113, 162 (1973). The Court only balanced the woman's right to privacy in her bodily integrity against the state's interest in protecting the potentiality of life.

Subsequent Supreme Court decisions have reaffirmed this framework and found a compelling state interest once a fetus is viable, but have not recognized the fetus to have any rights itself. *See e.g.*, Webster v. Reprod. Health Servs., 492 U.S. 490, 516–20 (1989); Thornburgh v. American College of Obstetricians & Gynecologists, 476 U.S. 747, 769–72 (1986); Planned Parenthood Ass'n v. Ashcroft, 462 U.S. 476, 485–86 (1983).

decide parenthood in these cases, we need a legal framework to resolve the important issues at stake.

We suggest that, in the absence of a prior written agreement between the parties, a court should apply a different standard to determine parental rights and obligations based on whether a child has already been born, whether the embryo is created and exists outside a human body, or whether a pregnancy is underway.

In the case of a living child, a court should base parental responsibility on a consideration of the parties' intent at the time they consented to the reproductive procedure that gave rise to the child's birth.

In the case of an embryo ex utero, a court should weigh the parties' interests and give weight to whichever party has stronger, irrevocable interests at stake. Generally, the party that does not wish to procreate should prevail since procreation is irrevocable, while the party seeking parenthood could typically produce new embryos with a third party.

Finally, when a pregnancy with a surrogate mother is underway, the surrogate mother should have an absolute right to carry the fetus to term as well as an absolute right to abort a fetus until the point at which it reaches viability.