



Introduction

In 1997, Drs. Ian Wilmut and Keith Campbell shocked the world by announcing the birth of Dolly.¹ Dolly was just an ordinary lamb, but the way in which the two scientists had conceived her was extraordinary.

Drs. Wilmut and Campbell removed the nucleus from a sheep egg, leaving the egg without chromosomes and thus without any nuclear DNA. Then the scientists used electricity to fuse the egg together with a cell taken from the udder of an adult sheep. The effect was to substitute the nuclear DNA of the adult sheep for that which had been taken out of the egg. After the fused product subdivided into an embryo, the scientists implanted that embryo into a surrogate mother sheep. Several months later, Dolly was born.² In effect, she was the later-born identical twin of the adult sheep that donated the nuclear DNA for the procedure.

Dolly's birth was scientific heresy. For years, biologists believed it to be impossible to clone mammals.³ Later, when it was discovered that mammals can be cloned from cells taken from embryos,⁴ biologists adjusted their beliefs slightly, asserting it to be impossible to clone mammals from adult cells that had taken on specialized functions such as skin, muscle, organs, and so on. Skeptics refused to believe that Dolly could have been cloned from an adult cell. They asserted that Drs. Wilmut and Campbell must have unwittingly cloned her from a stray stem or fetal cell circulating in the body of the pregnant sheep that had donated the nuclear DNA for the procedure.⁵

But, Dolly was not a fluke. Since that fateful announcement in 1997, scientists have cloned cows,⁶ pigs,⁷ goats,⁸ cats,⁹ rabbits,¹⁰ mice,¹¹ rats,¹² horses,¹³ deer,¹⁴ and other mammals from adult cells.¹⁵ Even the mule, a sterile cross of horse and donkey, has reproduced through cloning.¹⁶

Meanwhile, mainstream scientists have become interested in human cloning for research purposes (research cloning). They believe that cloned human embryos could help them learn about genetic diseases, develop pharmaceutical treatments, produce tissues for transplant, and assist in gene therapy.¹⁷

In 2004, South Korean scientists reported that they had cloned dozens of human embryos. The embryos grew to the blastocyst stage, meaning that each one contained hundreds of cells.¹⁸ From the South Koreans' point of view, their research was important because they derived a line of embryonic stem cells from one of the blastocysts.¹⁹

From a reproductive point of view, however, the South Korean research was important because it proved that scientists have the capability of cloning human embryos to the same stage of advanced development that immediately precedes implantation in the lining of the uterus.²⁰ Such research, published in readily available scientific journals, increases the odds that a scientist working outside the mainstream will develop the knowledge and expertise required to clone a human baby (human reproductive cloning).²¹

Indeed, attempts to clone human babies may be under way. In 2003, Dr. Panayiotis Zavos published a report in an online scientific journal claiming that he had created a cloned human embryo of eight to ten cells. Dr. Zavos created the embryo for reproductive purposes, that is,

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so that his infertile male patient could have a child. Dr. Zavos froze that embryo pending molecular analysis.²² In January 2004, he shocked the world by announcing that he had transferred another fresh cloned embryo into the womb of his patient's wife.²³ However, this effort did not produce a pregnancy.²⁴

As Dr. Zavos's activities suggest, if human reproductive cloning can be perfected, there will be a market for it. Infertile men and women who lack functional sperm or eggs may turn to cloning to conceive children to whom they are genetically related.²⁵ Fertile men and women who are healthy themselves but are carriers of one or more genetic diseases may also be interested in the technology. Today, when such individuals reproduce sexually, they run the risk of creating new genomes in which the diseases are active. Soon, cloning may allow them to pass down to their children their own genomes in which the diseases have been proven to be inactive.²⁶ Lastly, gay and lesbian couples²⁷ may find that cloning can give them children of their own without introducing the unwanted genes of a third-party sperm or egg donor.²⁸

In an effort to squelch this market, lawmakers have made human reproductive cloning a crime in many states, and more laws are pending.²⁹ However, if human reproductive cloning can be done safely and effectively, it cannot be stopped – even if it is illegal. The biological drive to reproduce is a powerful one. That is why infertile men and women are willing to endure painful and expensive medical treatments that might give them children.³⁰ Carriers of genetic diseases, gays, and lesbians also have the same fundamental drive. Faced with the painful alternative of childlessness, many of these individuals will choose instead to flout the anticloning laws. Some may travel to countries that permit cloning and come home pregnant or with babies in their arms. Others may ask doctors to create cloned embryos for them, ostensibly for therapeutic purposes, and then transfer the embryos to their wombs. Those with scientific backgrounds may even be able to clone in the privacy of their own laboratories without enlisting the assistance of outsiders.³¹

Thus, we face a realistic possibility that humans conceived with the aid of cloning technology will be born in our maternity wards, attend our public schools, become our friends, marry into our families, and work alongside us. But if cloning is a crime, these individuals will

endure a society that has attempted through its democratic institutions to prevent their very existence.

Although many have emphasized the dangers of human reproductive cloning, few have discussed the dangers of laws against cloning. One exception is Professor Laurence Tribe. In 1998, he published an essay that questioned the wisdom of a ban on cloning:

When the technology at issue is *a method for making human babies* – whether that method differs from a society’s conventional and traditionally approved mode because of some socially constructed “fact” such as the marital status or kinship relation or racial identity of a participant, or differs in a more intrinsic way as in the case of in vitro fertilization, or surrogate gestation, or cloning so as to achieve asexual reproduction with but a single parent – applying the counter-technology of criminalization has at least one additional, and qualitatively distinct, social cost. That cost, to the degree any ban on using a given mode of baby making is bound to be evaded, is the very considerable one of creating a class of potential outcasts – persons whose very *existence* the society has chosen, through its legal system, to label as a misfortune and, in essence, to condemn.

Even the simple example of what the “politically correct” call nonmarital children and what others call illegitimates (or more bluntly, bastards) powerfully illustrates the high price many individuals and their families are forced to pay for a society’s decision to reinforce, through outlawing nonmarital reproduction and discriminating against nonmarital offspring, particular norms about how children ought to be brought into the world. How much higher would that price be when the basis on which the law decides to condemn a given baby-making method (like cloning) is . . . the far more personalized and stigmatizing judgment that *the baby itself* – the child that will result from the condemned method – is morally incomplete or existentially flawed by virtue of its unnaturally manmade and deliberately determined (as opposed to “open”) origin and character? . . . [T]he human clone – in a world where cloning is forbidden as unnatural – is likely in the end to become the object of a form of contempt: the contempt that the (supposedly) spontaneous, natural, and unplanned would tend to feel toward the (supposedly) manufactured and allegedly artificial.³²

Thus, Professor Tribe argued, laws against human reproductive cloning could create a “particularly pernicious form of caste system, in which an entire category of persons, while perhaps not labeled untouchable, is marginalized as not fully human.”³³

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I share Professor Tribe's concerns and expand upon them in this book.

Part 1 describes five common objections to human reproductive cloning and critiques them, exposing weaknesses in their underlying reasoning. Also explained is how the objections reflect, reinforce, and inspire unjustified stereotypes about human clones.³⁴

Part 2 describes various laws against human reproductive cloning and traces their roots to the five objections. Reasoning by analogy to anti-miscegenation laws, which once sought to prevent the birth of mixed-race children, I explain that anticloning laws are designed to prevent the existence of human clones. A description of the costs that the anticloning laws will impose on human clones, their families, and society at large is then offered. Because the laws provide few compensating benefits, I conclude that they are bad public policy.

Part 3 shifts from public policy analysis to constitutional challenge and explains why the courts should recognize human clones as a suspect class and subject laws against human reproductive cloning to strict scrutiny. I conclude that such laws are not narrowly tailored to achieve a compelling governmental interest; therefore, they violate the equal protection guarantee and are unconstitutional.

PART ONE

FIVE COMMON OBJECTIONS TO
HUMAN REPRODUCTIVE
CLONING REFLECT,
REINFORCE, AND INSPIRE
STEREOTYPES ABOUT HUMAN
CLONES

In the years since Dolly was born, society has fiercely debated the advantages and disadvantages of human reproductive cloning. Certain objections to cloning, and human clones, tend to crop up again and again. In Part 1 of this book, I critique these objections and explain how they reflect, reinforce, and inspire unfair stereotypes about human clones.

Chapter 1 presents the objection that cloning offends God and nature. Chapter 2 details the argument that cloning reduces humans to the level of manmade objects. Chapter 3 examines the objection that human clones lack individuality. Chapter 4 discusses arguments that human clones threaten the survival of humanity. Chapter 5 addresses what I call the safety objection. This includes not only the argument that the technology of cloning is unsafe for participants but also the argument that human clones inevitably must have serious birth defects.

In the analysis that follows, I emphasize four reports that have recommended a ban on human reproductive cloning. These reports are useful because they state the five objections clearly and concisely. Each of these reports, moreover, was designed to influence, and has influenced, public opinion and lawmakers. Thus, the reports set the stage for Part 2 of this book in which I document the influence that the five objections have had on public opinion and lawmakers. In chronological order, the reports are as follows:

National Bioethics Advisory Commission, *Cloning Human Beings, Report and Recommendations of the National Bioethics Advisory Commission* (1997) (NBAC report). President Bill Clinton established the National Bioethics Advisory Commission (NBAC) to provide advice to the National Science and Technology Council and other governmental entities on bioethical issues arising from research on human biology and behavior.¹ After Dolly's birth was announced in 1997, President Clinton asked NBAC to issue a report on human reproductive cloning within 90 days.² The NBAC report assayed the scientific, religious, ethical, legal, and policy implications of cloning and recommended that Congress enact a 3- to 5-year ban on human reproductive cloning.³

California Advisory Committee on Human Cloning, *Cloning Californians? Report of the California Advisory Committee on Human Cloning* (2002) (California report). In 1997, the California State Legislature enacted a 5-year ban on human reproductive cloning.⁴ At the same time, it passed a resolution urging the California Department of Health Services to appoint an advisory committee to evaluate the medical, social, legal, and ethical implications of human reproductive cloning and advise the legislature and governor.⁵ In 2002, the California Advisory Committee on Human Cloning issued its report recommending that the legislature replace the temporary ban on human reproductive cloning with a permanent one.⁶

The National Academies,⁷ *Scientific and Medical Aspects of Human Reproductive Cloning* (2002) (NAS report). Unlike the other reports, which span the full range of public policy issues associated with human reproductive cloning, the NAS report covers only the scientific and medical aspects of cloning. The NAS report recommends that lawmakers

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enact a ban on human reproductive cloning that could be reevaluated after 5 years.⁸

The President's Council on Bioethics, *Human Cloning and Human Dignity: An Ethical Inquiry* (2002) (Council report). President George W. Bush established the President's Council on Bioethics to advise the president on bioethical issues related to advances in biomedical science and technology.⁹ The council reviewed the science and ethics of cloning and issued its report recommending that human reproductive cloning be outlawed.¹⁰

CHAPTER ONE

Does Human Reproductive Cloning Offend God and Nature?

The first charge against human reproductive cloning is that it is an expression of hubris. This idea can be expressed in one of two ways: first, that cloning is an offense against God; or second, that cloning is an offense against nature. I will examine each of these variations in turn.

1. God

The idea that cloning offends God is one of the most commonly asserted arguments in the cloning debate. The California Advisory Committee on Human Cloning summarized the argument as follows:

Reproduction, according to this argument, is solely God's domain. When we take it upon ourselves to create humans through reproductive cloning,

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we are infringing on the divine domain, “playing God,” as it were. On this view, finite and fallible beings should not make decisions properly limited to the infinite and infallible. Many religious accounts give humans the responsibility for being caretakers of the rest of creation. The cloning of human beings oversteps the limits of this responsibility and runs counter to the responsibility itself.¹

The media reflect and propagate this common objection. In a fascinating study of American news stories on cloning, Patrick Hopkins documented how the media portray human reproductive cloning as an immoral and dangerous intrusion into the Creator's domain.² Frequent references to the novels *Brave New World*³ and *Frankenstein*⁴ hammer home the message that arrogant scientists are crossing the line.⁵

Ironically, scientists have helped the media frame the cloning debate in these terms. A recent study of print news media in Australia found that scientists often distinguish research cloning, which they represent as useful and legitimate science, from reproductive cloning, which they depict as dangerous and illegitimate science.⁶ This is a strategy designed to protect research cloning against public hysteria and legislative action. By casting the debate in terms of “good” versus “bad” science, mainstream scientists have reinforced the notion that some knowledge should be off-limits for mankind.

It is impossible to know whether human reproductive cloning does, in fact, offend God. For one thing, there is no scientific proof that God exists. Furthermore, even if God does exist, there is no objective way to show what God thinks about cloning.

Even while proclaiming the evils of hubris, fallible humans have dared to speculate about what God *might* think. Even these speculations are in conflict, however. For example, when Dolly was born, the National Bioethics Advisory Commission took testimony from representatives of many different religions. Roman Catholic witnesses condemned cloning outright, but Jewish witnesses argued that cloning humans could be justified in some circumstances, including infertility.⁷ Moreover, people who believe in God, but do not claim membership in any organized religion, are the fastest growing religious group in the United States.⁸ Many of these individuals are likely to have their own personal views about whether cloning offends God.