

## *Cloning, Ethics, and Religion*

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On Sunday morning, 23 February 1997, the world awoke to a technological advance that shook the foundations of biology and philosophy. On that day, we were introduced to Dolly, a 6-month-old lamb that had been cloned directly from a single cell taken from the breast tissue of an adult donor. Perhaps more astonished by this accomplishment than any of their neighbors were the scientists who actually worked in the field of mammalian genetics and embryology. Outside the lab where the cloning had actually taken place, most of us thought it could never happen. Oh, we would say that perhaps at some point in the distant future, cloning might become feasible through the use of sophisticated biotechnologies far beyond those available to us now. But what many of us really believed, deep in our hearts, was that this was one biological feat we could never master. New life—in the special sense of a conscious being—must have its origins in an embryo formed through the merger of gametes from a mother and father. It was impossible, we thought, for a cell from an adult mammal to become reprogrammed, to start all over again, to generate another entire animal or person in the image of the one born earlier.

How wrong we were.

Of course, it wasn't the cloning of a sheep that stirred the imaginations of hundreds of millions of people. It was the idea that humans could now be cloned as well, and many people were terrified by the prospect. Ninety percent of Americans polled within the first week after the story broke felt that human cloning should be banned.<sup>1</sup> And while not unanimous, the opinions of many media pundits, ethicists, and policymakers seemed to follow that of the public at large. The idea that humans might be cloned was called "morally despicable," "repugnant," "totally inappropriate," as well as "ethically wrong, socially misguided and biologically mistaken."<sup>2</sup>

Scientists who work directly in the field of animal genetics and embryology were dismayed by all the attention that now bore down on their research. Most unhappy of all were those associated with the biotechnology industry, which has the most to gain in the short-term from animal applications of the cloning technology.<sup>3</sup> Their fears were not unfounded. In the aftermath of Dolly, polls found that two out of three Americans considered the cloning of *animals* to be morally unacceptable, while 56% said they would not eat meat from cloned animals.<sup>4</sup>

It should not be surprising, then, that scientists tried to play down the feasibility of human cloning. First they said that it might not be possible *at all*

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to transfer the technology to human cells.<sup>5</sup> And even if human cloning is possible in theory, they said, "it would take years of trial and error before it could be applied successfully," so that "cloning in humans is unlikely any time soon."<sup>6</sup> And even if it becomes possible to apply the technology successfully, they said, "there is no clinical reason why you would do this."<sup>7</sup> And even if a person wanted to clone him- or herself or someone else, he or she wouldn't be able to find trained medical professionals who would be willing to do it.

Really? That's not what science, history, or human nature suggest to me. The cloning of Dolly broke the technological barrier. There is no reason to expect that the technology couldn't be transferred to human cells. On the contrary, there is every reason to expect that it *can* be transferred. If nuclear transplantation works in every mammalian species in which it has been seriously tried, then nuclear transplantation *will* work with human cells as well. It requires only equipment and facilities that are already standard, or easy to obtain by biomedical laboratories and freestanding in vitro fertilization clinics across the world. Although the protocol itself demands the services of highly trained and skilled personnel, there are thousands of people with such skills in dozens of countries.

The initial horror elicited by the announcement of Dolly's birth was due in large part to a misunderstanding by the lay public and the media of what biological cloning is and is not. The science critic Jeremy Rifkin exclaimed: "It's a horrendous crime to make a Xerox (copy) of someone,"<sup>8</sup> and the Irvine, California, rabbi Bernard King was seriously frightened when he asked, "Can the cloning create a soul? Can scientists create the soul that would make a being ethical, moral, caring, loving, all the things we attribute humanity to?"<sup>9</sup> The Catholic priest Father Saunders suggested that "cloning would only produce humanoids or androids—soulless replicas of human beings that could be used as slaves."<sup>10</sup> And *New York Times* writer Brent Staples warned us that "synthetic humans would be easy prey for humanity's worst instincts."<sup>11</sup>

Anyone reading this volume already knows that real human clones will simply be later-born identical twins—nothing more and nothing less. Cloned children will be full-fledged human beings, indistinguishable in biological terms from all other members of the species. But even with this understanding, many ethicists, scholars, and scientists are still vehemently opposed to the use of cloning as means of human reproduction under any circumstances whatsoever. Why do they feel this way? Why does this new reproductive technology upset them so?

First, they say, it's a question of "safety." The cloning procedure has not been proven safe and, as a result, its application toward the generation of newborn children could produce deformities and other types of birth defects. Second, they say that even if physical defects can be avoided, there is the psychological well-being of the cloned child to consider. And third, above and beyond each individual child, they are worried about the horrible effect that cloning will have on society as a whole.

What I will argue here is that people who voice any one or more of these concerns are—either consciously or subconsciously—hiding the real reason they oppose cloning. They have latched on to arguments about safety, psychology, and society because they are simply unable to come up with an ethical argument that is not based on the religious notion that by cloning human beings man will be playing God, and it is wrong to play God.

Let us take a look at the safety argument first. Throughout the 20th century, medical scientists have sought to develop new protocols and drugs for treating disease and alleviating human suffering. The safety of all these new medical protocols was initially unknown. But through experimental testing on animals first, and then volunteer human subjects, safety could be ascertained and governmental agencies—such as the Food and Drug Administration in the United States—could make a decision as to whether the new protocol or drug should be approved for use in standard medical practice.

It would be ludicrous to suggest that legislatures should pass laws banning the application of each newly imagined medical protocol before its safety has been determined. Professional ethics committees, institutional review boards, and the individual ethics of each medical practitioner are relied upon to make sure that hundreds of new experimental protocols are tested and used in an appropriate manner each year. And yet the question of unknown safety alone was the single rationale used by the National Bioethics Advisory Board (NBAC) to propose a ban on human cloning in the United States.

Opposition to cloning on the basis of safety alone is almost surely a losing proposition. Although the media have concocted fantasies of dozens of malformed monster lambs paving the way for the birth of Dolly, fantasy is all it was. Of the 277 fused cells created by Wilmut and his colleagues, only 29 developed into embryos. These 29 embryos were placed into 13 ewes, of which 1 became pregnant and gave birth to Dolly.<sup>12</sup> If safety is measured by the percentage of lambs born in good health, then the record, so far, is 100% for nuclear transplantation from an adult cell (albeit with a sample size of 1).

In fact, there is no scientific basis for the belief that cloned children will be any more prone to genetic problems than naturally conceived children. The commonest type of birth defect results from the presence of an abnormal number of chromosomes in the fertilized egg. This birth defect arises during gamete production and, as such, its frequency should be greatly reduced in embryos formed by cloning. The second most common class of birth defects results from the inheritance of two mutant copies of a gene from two parents who are silent carriers. With cloning, any silent mutation in a donor will be silent in the newly formed embryo and child as well. Finally, much less frequently, birth defects can be caused by new mutations; these will occur with the same frequency in embryos derived through conception or cloning. (Although some scientists have suggested that chromosome shortening in the donor cell will cause cloned children to have a shorter lifespan, there is every reason to expect that chromosome repair in the embryo will eliminate this problem.) Surprisingly, what our current scientific understanding suggests is that birth defects in cloned children could occur less frequently than birth defects in naturally conceived ones.

Once safety has been eliminated as an objection to cloning, the next concern voiced is the psychological well-being of the child. Daniel Callahan, the former director of the Hastings Center, argues that “engineering someone’s entire genetic makeup would compromise his or her right to a unique identity.”<sup>13</sup> But no such ‘right’ has been granted by nature—identical twins are born every day as natural clones of each other. Dr. Callahan would have to concede this fact, but he might still argue that just because twins occur naturally does not mean we should create them on purpose.

Dr. Callahan might argue that a cloned child is harmed by knowledge of her future condition. He might say that it’s unfair to go through childhood know-

ing what you will look like as an adult, or being forced to consider future medical ailments that might befall you. But even in the absence of cloning, many children have some sense of the future possibilities encoded in the genes they got from their parents. Furthermore, genetic screening already provides people with the ability to learn about hundreds of disease predispositions. And as genetic knowledge and technology become more and more sophisticated, it will become possible for any human being to learn even more about his or her genetic future than a cloned child could learn from his or her progenitor's past.

It might also be argued that a cloned child will be harmed by having to live up to unrealistic expectations placed on her by her parents. But there is no reason to believe that her parents will be any more unreasonable than many other parents who expect their children to accomplish in their lives what they were unable to accomplish in their own. No one would argue that parents with such tendencies should be prohibited from having children.

But let's grant that among the many cloned children brought into this world, some *will* feel badly about the fact that their genetic constitution is not unique. Is this alone a strong enough reason to ban the practice of cloning? Before answering this question, ask yourself another: Is a child having knowledge of an older twin worse off than a child born into poverty? If we ban the former, shouldn't we ban the latter? Why is it that so many politicians seem to care so much about cloning but so little about the welfare of children in general?

Finally, there are those who argue against cloning based on the perception that it will harm society at large in some way. The *New York Times* columnist William Safire expresses the opinion of many others when he says that "cloning's identity would restrict evolution."<sup>14</sup> This is bad, he argues, because "the continued interplay of genes . . . is central to humankind's progress." But Mr. Safire is wrong on both practical and theoretical grounds. On practical grounds, even if human cloning became efficient, legal, and popular among those in the moneyed classes (which is itself highly unlikely), it would still only account for a fraction of a percent of all the children born onto this earth. Furthermore, each of the children born by cloning to different families would be different from each other, so where does the identity come from?

On theoretical grounds, Safire is wrong because humankind's progress has nothing to do with unfettered evolution, which is always unpredictable and not necessarily upward bound. H. G. Wells recognized this principle in his 1895 novel *The Time Machine*, which portrays the evolution of humankind into weak and dimwitted but cuddly little creatures. And Kurt Vonnegut follows this same theme in *Galápagos*, where he suggests that our "big brains" will be the cause of our downfall, and future humans with smaller brains and powerful flippers will be the only remnants of a once great species, a million years hence.

As is so often the case with new reproductive technologies, the real reason that people condemn cloning has nothing to do with technical feasibility, child psychology, societal well-being, or the preservation of the human species. The real reason derives from religious beliefs. It is the sense that cloning leaves God out of the process of human creation, and that man is venturing into places he does not belong. Of course, the 'playing God' objection only makes sense in the context of one definition of God, as a supernatural being who plays a role in the birth of each new member of our species. And even if one holds this particular view of God, it does not necessarily follow that cloning is equivalent to playing God. Some who consider themselves to be

religious have argued that if God didn't want man to clone, "he" wouldn't have made it possible.

Should public policy in a pluralist society be based on a narrow religious point of view? Most people would say no, which is why those who hold this point of view are grasping for secular reasons to support their call for an unconditional ban on the cloning of human beings. When the dust clears from the cloning debate, however, the secular reasons will almost certainly have disappeared. And then, only religious objections will remain.

## Notes

1. Data extracted from a *Time*/CNN poll taken over the 26th and 27th of February 1997 and reported in *Time* on 10 March 1997; and an ABC Nightline poll taken over the same period, with results reported in the *Chicago Tribune* on 2 March 1997.
2. Quotes from the bioethicist Arthur Caplan in *Denver Post* 1997;Feb 24; the bioethicist Thomas Murray in *New York Times* 1997;Mar 6; Congressman Vernon Elders in *New York Times* 1997;Mar 6; and evolutionary biologist Francisco Ayala in *Orange County Register* 1997;Feb 25.
3. James A. Geraghty, president of Genzyme Transgenics Corporation (a Massachusetts biotech company), testified before a Senate committee that "everyone in the biotechnology industry shares the unequivocal conviction that there is no place for the cloning of human beings in our society." *Washington Post* 1997; Mar 13.
4. Data obtained from a Yankelovich poll of 1,005 adults reported in *St. Louis Post-Dispatch* 1997; Mar 9 and a *Time*/CNN poll reported in *New York Times* 1997;Mar 5.
5. Leonard Bell, president and chief executive of Alexion Pharmaceuticals, is quoted as saying, "There is a healthy skepticism whether you can accomplish this efficiently in another species." *New York Times* 1997;Mar 3.
6. Interpretation of the judgments of scientists, reported by Specter M, Kolata G. *New York Times* 1997;Mar 3, and by Herbert W, Sheler JL, Watson T. *U.S. News & World Report* 1997;Mar 10.
7. Quote from Ian Wilmut, the scientist who brought forth Dolly, in Friend T. *USA Today* 1997;Feb 24.
8. Quoted in Kluger J. *Time* 1997;Mar 10.
9. Quoted in McGraw C, Kelleher S. *Orange County Register* 1997;Feb 25.
10. Quoted in the on line version of the *Arlington Catholic Herald* (<http://www.catholicaherald.com/bissues.htm>) 1997;May 16.
11. Staples B. [Editorial]. *New York Times* 1997;Feb 28.
12. Wilmut I, Schnieke AE, McWhir J, Kind AJ, Campbell KHS. Viable offspring derived from fetal and adult mammalian cells. *Nature* 1997;385:810-13.
13. Callahan D. [op-ed]. *New York Times* 1997;Feb 26.
14. Safire W. [op-ed] *New York Times* 1997;Feb 27.