Chapter Four

ETHICAL CONSIDERATIONS

The prospect of creating children through somatic cell nuclear transfer has elicited widespread concern, much of it in the form of fears about harms to the children who may be born as a result. There are concerns about possible physical harms from the manipulations of ova, nuclei, and embryos which are parts of the technology, and also about possible psychological harms, such as a diminished sense of individuality and personal autonomy. There are ethical concerns as well about a degradation of the quality of parenting and family life if parents are tempted to seek excessive control over their children's characteristics, to value children according to how well they meet overly detailed parental expectations, and to undermine the acceptance and openness that typify loving families. Virtually all people agree that the current risks of physical harm to children associated with somatic cell nuclear transplantation cloning might justify a prohibition at this time on such experimentation. In addition to concerns about specific harms to children, people have frequently expressed fears that a widespread practice of such cloning would undermine important social values, such as opening the door to a form of eugenics or by tempting some to manipulate others as if they were objects instead of persons, and exceeding the moral boundaries inherent in the human condition. Arrayed against these concerns are other important social values, such as protecting personal choice, maintaining privacy and the freedom of scientific inquiry, and encouraging the possible development of new biomedical breakthroughs. As somatic cell nuclear transfer cloning could represent a means of human reproduction for some people, limitations on that choice must be made only when the societal benefits of prohibition clearly outweigh the value of maintaining the private nature of such highly personal decisions. Especially in light of some arguably compelling cases for attempting to create a child through somatic cell nuclear transfer, the ethics of policy making must strike a balance between the values we, as a society, wish to reflect and the freedom of individual choice and any liberties we propose to limit.

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One of the key challenges for the Commission has been to understand many of the moral and religious objections to creating human beings using somatic cell nuclear transfer as well as to investigate and articulate the widespread intuitive disapproval of cloning human beings in this manner.[1] This challenge included an initial attempt to examine the plausibility and persuasiveness of these objections and of the counter arguments or especially compelling and specific cases for deploying this technology. As with the concerns offered in opposition to cloning, those offered in its defense also must be examined for their plausibility and persuasiveness. Religious perspectives

[1]In support of its analysis, NBAC commissioned a paper written by Dan Brock, Brown University, titled "Cloning Human Beings: An Assessment of the Ethical Issues Pro and Con." Some of the material in this chapter is derived from that paper.

were presented in the previous chapter. This chapter focuses on ethical principles not tied to any particular religious tradition, although these broad principles may be incorporated in the teachings of many religions.

The task is made quite difficult by the fact that neither moral philosophers nor religious thinkers can agree on the "best" moral theory; indeed, they often cannot even agree on the practical implications of any single theory. For example, some people base their arguments on an assessment of the particular harms and benefits that would flow to individuals and to society if somatic cell nuclear transfer techniques were to become commonplace. Others express their views by arguing about overarching rights—the child's right to individuality and dignity versus the nucleus donor's right to procreate or the scientist's right to do research. And while moral and even human rights are not necessarily understood as absolute, a choice to violate such rights requires more than a simple balancing of benefits over harms.

While some of the risks and benefits of somatic cell nuclear cloning of human beings are well enough understood to support the conclusion that it should not be permitted at this time, the difficult task of striking the balance among competing rights and interests needs more time for discussion and development. This chapter reviews some of these arguments which may serve as the starting point for a profound and sustained reflection on the significance of creating children through somatic cell nuclear transfer.

The following discussion of issues raised by such cloning begins with an important caveat. Any research or clinical experiment on creating a child in this manner would involve the creation of an embryo. That is, the fusion of a human somatic cell and an egg whose nucleus has been removed would produce a human embryo, with the apparent potential to be implanted *in utero* and developed to term. Ethical concerns surrounding the issues of embryo research, absent the implantation and carrying to term of an embryo, have recently received extensive analysis and deliberation in our country (National Institutes of Health, 1994). Indeed, as described in Chapter Five, federal funding for human embryo research is severely restricted, although there are few restrictions on human embryo research carried out in the private sector using non-federal funds.

The unique prospect, vividly raised by Dolly, is the creation of a new individual genetically identical to an existing (or previously existing) person—a "delayed" genetic twin. This prospect has been the source of the overwhelming public concern about such cloning. While the creation of embryos for research purposes alone always raises serious ethical questions, the use of somatic cell nuclear transfer to create embryos raises no new issues in this respect. The unique and distinctive ethical issues raised by the use of somatic cell nuclear transfer to create children relate to, for example, serious safety concerns, individuality, family integrity, and treating children as objects. Consequently, the Commission focused its attention on the use of such techniques for the purpose of creating an embryo which would then be implanted in a woman's uterus and brought to term. It also expanded its analysis of this particular issue to encompass activities in both the public and private sector.

Potential for Physical Harms

There is one basis of opposition to somatic cell nuclear transfer cloning on which almost everyone can agree. For reasons outlined in Chapter Two, there is virtually universal concern regarding the current safety of attempting to use this technique in human beings. Even if there were a compelling case in favor of creating a child in this manner, it would have to yield to one fundamental principle of both medical ethics and political philosophy—the injunction, as it is stated in the Hippocratic canon, to "first do no harm." In addition, the avoidance of physical and psychological harm was established as a standard for research in the Nuremberg Code, 1946-49. At this time, the significant risks to the fetus and physical well being of a child created by somatic cell nuclear transplantation cloning outweigh arguably beneficial uses of the technique.

It is important to recognize that the technique that produced Dolly the sheep was successful in only 1 of 277 attempts. If attempted in humans, it would pose the risk of hormonal manipulation in the egg donor; multiple miscarriages in the birth mother; and possibly severe developmental abnormalities in any resulting child. Clearly the burden of proof to justify such an experimental and potentially dangerous technique falls on those who would carry out the experiment. Standard practice in biomedical science and clinical care would never allow the use of a medical drug or device on a human being on the basis of such a preliminary study and without much additional animal research. Moreover, when risks are taken with an innovative therapy, the justification lies in the prospect of treating an illness in a patient, whereas, here no patient is at risk until the innovation is employed. Thus, no conscientious physician or Institutional Review Board should approve attempts to use somatic cell nuclear transfer to create a child at this time. For these reasons, prohibitions are warranted on all attempts to produce children through nuclear transfer from a somatic cell at this time.

Even on this point, however, NBAC has noted some difference of opinion. Some argue, for example, that prospective parents are already allowed to conceive, or to carry a conception to term, when there is a significant risk—or even certainty—that the child will suffer from a serious genetic disease. Even when others think such conduct is morally wrong, the parents' right to reproductive freedom takes precedence. Since many of the risks believed to be associated with somatic cell nuclear transfer may be no greater than those associated with genetic disorders, some contend that such cloning should be subject to no more restriction than other forms of reproduction (Brock, 1997).

And, as in any new and experimental clinical procedure, harms cannot be accurately determined until trials are conducted in humans. Law professor John Robertson noted before NBAC on March 13, 1997 that:

> "[The] first transfer [into a uterus] of a human [embryo] clone [will occur] before we know whether it will succeed. . .[Some have argued therefore] that the first transfers are somehow unethical. . .experimentation on the resulting child, because one does not know what is going to happen, and one is. . .possibly leading to a

> child who could be disabled and have developmental difficulties. . .[But the] child who would result would not have existed but for the procedure at issue, and [if] the intent there is actually to benefit that child by bringing it into being. . .[this] should be classified as experimentation for [the child's] benefit and thus it would fall within recognized exceptions. . .We have a very different set of rules for experimentation intended to benefit [the experimental subject]"(Robertson, 1997).

But the argument that somatic cell nuclear transfer cloning experiments are "beneficial" to the resulting child rest on the notion that it is a "benefit" to be brought into the world as compared to being left unconceived and unborn. This metaphysical argument, in which one is forced to compare existence with non-existence, is problematic. Not only does it require us to compare something unknowable—non-existence—with something else, it also can lead to absurd conclusions if taken to its logical extreme. For example, it would support the argument that there is no degree of pain and suffering that cannot be inflicted on a child, provided that the alternative is never to have been conceived. Even the originator of this line of analysis rejects this conclusion[2].

In addition, it is true that the actual risks of physical harm to the child born through somatic cell nuclear transfer cannot be known with certainty unless and until research is conducted on human beings. It is likewise true that if we insisted on absolute guarantees of no risk before we permitted any new medical intervention to be attempted in humans, this would severely hamper if not halt completely the introduction of new therapeutic interventions, including new methods of responding to infertility. The assertion that we should regard attempts at human cloning as "experimentation for [the child's] benefit" is not persuasive.

Cloning and Individuality

In addition to physical harms, many worry about psychological harms associated with such cloning. One of the forms of psychological harm most frequently mentioned is the possible loss of a sense of uniqueness.

Many argue that somatic cell nuclear transfer cloning creates serious issues of identity and individuality and forces us to reconsider how we define ourselves. In his testimony before NBAC on March 13, 1997, Gilbert Meilaender commented on the importance of genetic uniqueness not only for individuals but in the eyes of their parents:

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[2]There is one argument that has been used by several commentators to undermine the apparent significance of potential harms to a child created through somatic cell nuclear transfer (Chadwick 1982; Robertson 1994, 1997; Macklin 1994). The point derives from a general problem, called the non-identity problem, posed by the philosopher Derek Parfit and not originally directed to human cloning (Parfit 1984). This view argues that all the problems of having been born via such cloning are not net harms to the resulting child because they are not worse than no life at all. Parfit does not accept the above argument as sound. Instead, he believes that if one could have a different child without these burdens (for example, by using a different method of reproduction) there is as strong a moral reason to do so (Brock 1995).

> "Our children begin with a kind of genetic independence of us, their parents. They replicate neither their father nor their mother. That is a reminder of the independence that we must eventually grant to them and for which it is our duty to prepare them. To lose even in principle this sense of the child as gift will not be good for children"(Meilaender, 1997).

The concept of creating a genetic twin, although separated in time, is one aspect of somatic cell nuclear transfer cloning that most find both troubling and fascinating. The phenomenon of identical twins has intrigued human cultures across the globe, and throughout history (Schwartz, 1996). It is easy to understand why identical twins hold such fascination. Common experience demonstrates how distinctly different twins are, both in personality and in personhood. At the same time, observers cannot help but imbue identical bodies with some expectation that identical persons occupy those bodies, since body and personality remain intertwined in human intuition. With the prospect of somatic cell nuclear transfer cloning comes a scientifically inaccurate but nonetheless instinctive fear of multitudes of identical bodies, each housing personalities that are somehow less than distinct, less unique, and less autonomous than usual.

Is there a moral or human right to a unique identity, and if so would it be violated by this manner of human cloning? For such somatic cell nuclear transfer cloning to violate a right to a unique identity, the relevant sense of identity would have to be genetic identity, that is a right to a unique unrepeated genome. Even with the same genes, two individuals—for example homozygous twins—are distinct and not identical, so what is intended must be the various properties and characteristics that make each individual qualitatively unique and different than others. Does having the same genome as another person undermine that unique qualitative identity?

Along these lines of inquiry some question whether reproduction using somatic cell nuclear transfer would violate what philosopher Hans Jonas called a right to ignorance, or what philosopher Joel Feinberg called a right to an open future, or what Martha Nussbaum called the quality of "separateness" (Jonas 1974; Feinberg 1980; Nussbaum, 1990). Jonas argued that human cloning, in which there is a substantial time gap between the beginning of the lives of the earlier and later twin, is fundamentally different from the simultaneous beginning of the lives of homozygous twins that occur in nature. Although contemporaneous twins begin their lives with the same genetic inheritance, they also begin their lives or biographies at the same time, in ignorance of what the twin who shares the same genome will by his or her choices make of his or her life. To whatever extent one's genome determines one's future, each life begins ignorant of what that determination will be, and so remains as free to choose a future as are individuals who do not have a twin. In this line of reasoning, ignorance of the effect of one's genome on one's future is necessary for the spontaneous, free, and authentic construction of a life and self.

A later twin created by cloning, Jonas argues, knows, or at least believes he or she knows, too much about him or herself. For there is already in the world another person, one's earlier twin, who from the same genetic starting point has made the life choices that are still in the later twin's

future. It will seem that one's life has already been lived and played out by another, that one's fate is already determined, and so the later twin will lose the spontaneity of authentically creating and becoming his or her own self. One will lose the sense of human possibility in freely creating one's own future. It is tyrannical, Jonas claims, for the earlier twin to try to determine another's fate in this way.

And even if it is a mistake to believe such crude genetic determinism according to which one's genes determine one's fate, what is important for one's experience of freedom and ability to create a life for oneself is whether one thinks one's future is open and undetermined, and so still to be largely determined by one's own choices. One might try to interpret Jonas' objection so as not to assume either genetic determinism, or a belief in it. A later twin might grant that he or she is not destined to follow in his or her earlier twin's footsteps, but that nevertheless the earlier twin's life would always haunt the later twin, standing as an undue influence on the latter's life, and shaping it in ways to which others' lives are not vulnerable.

In a different context, and without applying it to human cloning, Feinberg has argued for a child's right to an open future. This requires that others raising a child not close off the future possibilities that the child would otherwise have by constructing his or her own life. One way this right to an open future would be violated is to deny even a basic education to a child, and another way might be to create the child as a later twin so that he or she will believe its future has already been set by the choices made and the life lived by the earlier twin.

On the other hand, all of these concerns are not only quite speculative, but are directly related to certain specific cultural values. Someone created through the use of somatic cell nuclear transfer techniques may or may not believe that their future is relatively constrained. Indeed, they may believe the opposite. In addition, quite normal parenting usually involves many constraints on a child's behavior that children may resent. Moreover, Feinberg's argument does not apply, if the belief is false and it can be shown to be false.

Thus, a central difficulty in evaluating the implications for somatic cell nuclear transfer cloning of a right either to ignorance or to an open future, is whether the right is violated merely because the later twin may be likely to believe that its future is already determined, even if that belief is clearly false and supported only by the crudest genetic determinism. Moreover, what such a twin is likely to believe will depend on the facts that emerge and not what scientists and ethicists claim.

Cloning and the Family

Among those concerns that are not focused on arguments about harm to the child are a set of worries about use of such cloning as a means of control. There are concerns, for example, about possibly generating large numbers of people whose life choices are limited by their own constrained self-image or by the constraining expectations of others. From this image of

less-than-autonomous children comes the fear, however misplaced, of technology creating armies of cloned soldiers, each diminished in his or her physical individuality and thereby diminished in their psychological autonomy. Similarly, this expectation of diminished autonomy underlies the eugenic arguments that have led many to speculate about the possibility of cloning "desirable" or "evil" people, ranging from actors to dictators of various stripes to distinguished religious leaders. Complicating matters even further, this misplaced belief in the ability of genes to fully determine behavior and personality amplifies the image, so that in the end one imagines being able to make either armies of complacent workers, crazed soldiers, brilliant musicians, or beatific saints.

Although such fears are based, as noted in Chapter Two, on gross misunderstandings of human biology and psychology, they are nonetheless fears that have been voiced. In addition, these same concerns also manifest themselves in fears that underlie the characterization of somatic cell nuclear transfer cloning as a form of "making" children rather than "begetting" children. With cloning, the total genetic blueprint of the cloned individual is selected and determined by the human artisans. This, according to Kass:

> ". . .would be taking a major step into making man himself simply another one of the man made things. Human nature becomes merely the last part of nature to succumb to the technological project which turns all of nature into raw material at human disposal. . .As with any product of our making, no matter how excellent, the artificer stands above it, not as an equal but as a superior, transcending it by his will and creative prowess" (Kass, 1997).

For many, this kind of relationship is inconsistent with an ideal of parenting, in which parents embrace not only the similarities between themselves and their children but also the differences, and in which they accept not only the developments they sought to bring about through care and teaching but also the serendipitous developments they never planned for or anticipated (Rothenberg, 1997).

Of course, parents already exercise great control over their offspring, through means as varied as contraception to control the timing and spacing of births, to genetic screening and use of donor gametes to avoid genetic disorders, to organized medical and educational interventions to guide physical and intellectual development. These interventions exist along a spectrum of control over development. Somatic cell nuclear transfer cloning, some fear, offers the possibility of virtually complete control over one important aspect of a child's development, his or her genome, and it is the completeness of this control, even if only over this partial aspect of human development, that is alarming to many people and invokes images of manufacturing children according to specification. The lack of acceptance this implies for children who fail to develop according to expectations, and the dominance it introduces into the parent-child relationship, is viewed by many as fundamentally at odds with the acceptance, unconditional love, and openness characteristic of good parenting. Meilaender addressed both the mystery of reproduction and fears about it veering toward a means of production in his testimony before NBAC:

> "But whatever we say of [other reproductive technologies], surely human cloning would be a new and decisive turn on this road. Far more emphatically a kind of production. Far less a surrender to the mystery of the genetic lottery which is the mystery of the child who replicates neither Father nor Mother but incarnates their union. Far more an understanding of the child as a product of human will" (Meilaender, 1997).

Questions are raised, as well, about the effect such interventions will have on a particular child. Will the child himself or herself feel less independent from the nucleus donor than a child ordinarily would from a parent? Will the knowledge of how one's genetic profile developed in another person at another time leave the child feeling that his character is as predetermined as his eye or hair color? Even if the child feels completely independent of the nucleus donor, will others regard the child as a copy or a successor to that donor? If so, will such expectations on the part of others warp the child's emerging self understanding?

Finally, some critics of such cloning are concerned that the legal or social status of the child arising from nuclear transfer of somatic cells may be uncertain. For some, the disparity between the child's genetic and social identity threatens the stability of the family. Is the child who results from somatic cell nuclear transfer the sibling or the child of its parents? The child or the grandchild of its grandparents? From this perspective the child's psychological and social well-being may be in doubt or even endangered. Ambiguity over parental roles may undermine the child's sense of identity. It may be harder for a child to achieve independence from a parent who is also his or her twin.

At the same time, others are not persuaded by such objections. Children born through assisted reproductive technologies may also have complicated relationships to genetic, gestational, and rearing parents. Skeptics of this point of view note that there is no evidence that confusion over family roles has harmed children born through assisted reproductive technologies, although the subject has not been carefully studied.

Potential Harms to Important Social Values

Those with grave reservations about somatic cell nuclear transfer cloning ask us to imagine a world in which cloning human beings via somatic cell nuclear transfer were permitted and widely practiced. What kind of people, parents, and children would we become in such a world? Opponents fear that such cloning to create children may disrupt the interconnected web of social values, practices, and institutions that support the healthy growth of children. The use of such cloning techniques might encourage the undesirable attitude that children are to be valued according to how closely they meet parental expectations, rather than loved for their own sake. In this way of looking at families and parenting, certain values are at the heart of those relationships, values such as love, nurturing, loyalty, and steadfastness. In contrast, a world in which such cloning were widely practiced would give, the critics claim, implicit approval to vanity, narcissism, and avarice. To these critics, changes that undermine those deeply prized values should be

avoided if possible. At a minimum, such undesirable changes should not be fostered by public policies.

On the other hand, others are not persuaded by these objections. First, many social observers point out that if strongly held moral values are in decline, there are likely many complex reasons for this, which would not be addressed by a ban on cloning in this fashion. Furthermore, skeptics argue that people can, and do, adapt in socially redeeming ways, to new technologies. In their view, a child born through somatic cell nuclear transfer could be loved and accepted like any other child, and not disrupt important family and kinship relations.

The strength of public reaction, however, reflects a deep concern that somehow many important social values could be harmed in a society where such cloning were widely used. In his testimony before the Commission on March 13, 1997, bioethicist Leon Kass summarized many of the widely held concerns regarding the possibility of cloning human beings via somatic cell nuclear transfer when he noted:

> "Almost no one sees any compelling reason for human cloning. Almost everyone anticipates its possible misuses and abuses. Many feel oppressed by the sense that there is nothing we can do to prevent it from happening and this makes the prospect seem all the more revolting. Revulsion is surely not an argument....But ... in crucial cases repugnance is often the emotional bearer of deep wisdom beyond reason's power fully to articulate it" (Kass, 1997).

But some people, however, argue against relying on moral intuition to set public policy. While it is certainly true that repugnance may be the bearer of wisdom, it may also be the bearer of simple and thoughtless prejudice. In her testimony before NBAC on March 14, 1997, bioethicist Ruth Macklin challenged the inclination to take as axiomatic the proposition that to be born as a result of using these techniques is to be harmed or at least to be wronged:

> "Intuition has never been a reliable epistemological method, especially since people notoriously disagree in their moral intuitions. . . If objectors to cloning can identify no greater harm than a supposed affront to the dignity of the human species, that is a flimsy basis on which to erect barriers to scientific research and its applications" (Macklin, 1997).

Nevertheless, opponents assert that this new type of cloning tempts human beings to transgress moral boundaries and to grasp for powers that are properly outside human control. Ancient Greek literature and many Biblical interpretations emphasize that human beings occupy a moral position between other forms of life and the divine. In particular, humans should not consider themselves as omnipotent over nature. From this perspective, respecting limits is to respect the appropriate place of humankind in the universe and to ensure that technology is not allowed to push aside critical social and moral commitments. This view need not be tied to a single religious doctrine, a particular view of God, or even a belief in God. However, these

objections are often expressed in religious terms. For example, critics talk of how the ability to create children through somatic cell nuclear transfer may tempt us to seek immortality, to usurp the role of God, or to violate divine commands.

On the other hand, some observers do not see this type of cloning as dramatically new or extreme, especially when compared to other assisted reproductive technologies. Robertson notes:

> "In an important sense cloning is not the most radical thing on the horizon. Much more significant, I think, would be the ability to actually alter or manipulate the genome of offspring. Cloning takes a genome as it is. . .and might replicate it . . . [T]hat is much less ominous than having an ability to take a given genome and either add or take out a gene which could then lead to a child being born with characteristics other than it would have had with the genome it started with" (Robertson, 1997).

Finally, critics have also raised questions about an inappropriate use of scarce resources. The generation of children through somatic cell nuclear transfer would divert scarce resources, including the skills of researchers and clinicians, from more pressing social and medical needs. These considerations about allocation of resources are particularly pertinent if public funds would be involved. In the words of theologian Nancy Duff:

> "When considering research into human cloning we must look at the responsible use of limited resources. . .[I]t is mandatory to ask whether other research projects will serve a greater number of people than research on human cloning and take the answer to that seriously" (Duff, testimony, 1997).

Treating People As Objects

Some opponents of somatic cell nuclear cloning fear that the resulting children will be treated as objects rather than as persons. This concern often underlies discussions of whether such cloning amounts to "making" rather than "begetting" children, or whether the child who is created in this manner will be viewed as less than a fully independent moral agent. In sum, will being cloned from the somatic cell of an existing person result in the child being regarded as less of a person whose humanity and dignity would not be fully respected.

One reason this discussion can be hard to capture and to articulate is that certain terms, such as "person," are used differently by different people[3]. What is common to these various

[3] Moral philosophers think about personhood when they construct and deploy their views of human choice and moral agency. For Kantians, personhood is about free will and reason. From the point of view of Kantian moral personality, all of us are identical as persons. Philosophers of mind think about personhood when they try to figure out what constitutes personal identity. For many of these philosophers, personal identity means having a continuous life story that incorporates a past and a future for oneself. From the point

views, however, is a shared understanding that being a "person" is different from being the manipulated "object" of other people's desires and expectations. Writes legal scholar Margaret Radin,

> "The person is a subject, a moral agent, autonomous and self-governing. An object is a non-person, not treated as a self-governing moral agent . . .[By] 'objectification of persons,' we mean, roughly, "what Kant would not want us to do.[4]

That is, to objectify a person is to act towards the person without regard for his or her own desires or well-being, as a thing to be valued according to externally imposed standards, and to control the person rather than to engage her or him in a mutually respectful relationship. Objectification, quite simply, is treating the child as an object—a creature less deserving of respect for his or her moral agency. Commodification is sometimes distinguished from objectification and concerns treating persons as commodities, including treating them as a thing that can be exchanged, bought or sold in the marketplace. To those who view the intentional choice by another of one's genetic makeup as a form of manipulation by others, somatic cell nuclear transfer cloning represents a form of objectification or commodification of the child.

Some may deny that objectification is any more a danger in somatic cell nuclear transfer cloning than in current practices such as genetic screening or, in the future perhaps, gene therapy. These procedures aim either to avoid having a child with a particular condition, or to compensate for a genetic abnormality. But to the extent that the technology is used to benefit the child by, for example, allowing early preventive measures with phenylketonuria, no objectification of the child takes place.

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of view of personal identity, all of us are different, unique, as persons. Psychoanalysts think about personhood when they relate the constants of human life and development to broad personality structures. From the psychoanalytic point of view, each of us manifests the same dynamic personality structures, yet no two of us do so in exactly the same way; we are all the same and also all different. Welfare rights activists and human rights activists may think about personhood: what is the minimum of necessary resources for a fully human life? Some medical ethicists think about personhood while trying to decide at what point does life cease to be a human life worth living? Political theorists at times think about personhood in the context of trying to understand what are the basics of individuality that the state should recognize or underwrite? Parents think about personhood: what part do I play in making possible the fullest kind of human-ness for my children?" (Radin, 1995).

[4] "Kantian ethical thought," writes Radin, "distinguishes morally between persons and objects. Rational beings possessing free will (persons) are autonomous; the moral law requires that persons be treated as ends, not means. Objects in the natural world that are not rational beings possessing free will are not persons, and may appropriately be used as means by persons. Kant's view requires that persons, moral agents, not be treated as objects, manipulated at the will of persons. Kant presented his basic principles of ethics in *Immanuel Kant, Groundwork of The Metaphysics of Morals* (1785), translated by H. J. Paton in *The Moral Law* (1948)." [Margaret Radin, "Reflections on Objectification," 65 *Southern California Law Review* 341 (November 1991), at footnote 4]

When such cloning is undertaken not for any purported benefit of the child himself or herself, but rather to satisfy the vanity of the nucleus donor, or even to serve the need of someone else, such as a dying child in need of a bone marrow donor, then some would argue that it goes yet another step toward diminishing the personhood of the child created in this fashion. The final insult, opponents argue, would come if the child created through somatic cell nuclear transfer is regarded as somehow less than fully equal to the other human beings, due to his or her diminished physical uniqueness and the diminished mystery surrounding some aspects of his or her future, physical development.

Eugenic Concerns

The desire to improve on nature is as old as humankind. It has been played out in agriculture through the breeding of special strains of domesticated animals and plants. With the development of the field of genetics over the past 100 years came the hope that the selection of advantageous inherited characteristics—called eugenics, from the Greek eugenes meaning wellborn or noble in heredity—could be as beneficial to humankind as selective breeding in agriculture.

The transfer of directed breeding practices from plants and animals to human beings is inherently problematic, however. To begin, eugenic proposals require that several dubious and offensive assumptions be made. First, that most, if not all people would mold their reproductive behavior to the eugenic plan; in a country that values reproductive freedom, this outcome would be unlikely absent compulsion. Second, that means exist for deciding which human traits and characteristics would be favored, an enterprise that rests on notions of selective human superiority that have long been linked with racist ideology.

Equally important, the whole enterprise of "improving" humankind by eugenic programs oversimplifies the role of genes in determining human traits and characteristics. Little is known about correlation between genes and the sorts of complex, behavioral characteristics that are associated with successful and rewarding human lives; moreover, what little is known indicates that most such characteristics result from complicated interactions among a number of genes and the environment. While cows can be bred to produce more milk and sheep to have softer fleece, the idea of breeding humans to be superior would belong in the realm of science fiction even if one could conceive how to establish the metric of superiority, something that turns not only on the values and prejudices of those who construct the metric but also on the sort of a world they predict these specially bred persons would face.

Nonetheless, at the beginning of this century eugenic ideas were championed by scientific and political leaders and were very popular with the American public. It was not until they were practiced in such a grotesque fashion in Nazi Germany that their danger became apparent. Despite this sordid history and the very real limitations in what genetic selection could be expected to yield, the lure of “improvement” remains very real in the minds of some people. In some ways,

creating people through somatic cell nuclear transfer offers eugenicists a much more powerful tool than any before. In selective breeding programs, such as the "germinal choice" method urged by the geneticist H.J. Muller a generation ago (Kevles, 1995), the outcome depended on the usual "genetic lottery" that occurs each time a sperm fertilizes an egg, fusing their individual genetic heritages into a new individual. Cloning, by contrast, would allow the selection of a desired genetic prototype which would be replicated in each of the "offspring," at least on the level of the genetic material in the cell nucleus.

It might be enough to object to the institution of a program of human eugenic cloning—even a voluntary program—that it would rest on false scientific premises and hence be wasteful and misguided. But that argument might not be sufficient to deter those people who want to push the genetic traits of a population in a particular direction. While acknowledging that a particular set of genes can be expressed in variety of ways and therefore that cloning (or any other form of eugenic selection) does not guarantee a particular phenotypic manifestation of the genes, they might still argue that certain genes provide a better starting point for the next generation than other genes.

The answer to any who would propose to exploit the science of cloning in this way is that the moral problems with a program of human eugenics go far beyond practical objections of infeasibility. Some objections are those that have already been discussed in connection with the possible desire of individuals to use somatic cell nuclear transfer that the creation of a child under such circumstances could result in the child being objectified, could seriously undermine the value that ought to attach to each individual as an end in themselves, and could foster inappropriate efforts to control the course of the child's life according to expectations based on the life of the person who was cloned.

In addition to such objections are those that arise specifically because what is at issue in eugenics is more than just an individual act, it is a collective program. Individual acts may be undertaken for singular and often unknown or even unknowable reasons, whereas a eugenics program would propagate dogma about the sorts of people who are desirable and those who are dispensable. That is a path that humanity has tread before, to its everlasting shame. And it is a path to whose return the science of cloning should never be allowed to give even the slightest support.

Arguments for Maintaining Personal Autonomy and Freedom of Inquiry

Arrayed against these concerns about the societal effects of cloning human beings via somatic cell nuclear transfer are arguments for maintaining individual choice over whether to use the technology. These arguments are made on five separate grounds: first, that there is a general presumption in favor of individual liberty; second, that certain actions, such as human reproduction, are particularly personal and should remain free of constraint; third, as a society we ought not limit the freedom of scientific inquiry; fourth, that there are some reasons to create a child through somatic cell nuclear transfer so compelling they should transcend objections to the

practice even if it should otherwise be prohibited; and finally, that many of the objections to the use of this technique are largely speculative and unproven.

Presumptions in Favor of Personal Autonomy

The presumption in favor of individual liberty stems from a consensus within the United States that one of the most important values we share is a commitment to personal autonomy. In part, this commitment is maintained because of the widespread fear that one's own personal choices might be constrained if subject to collective decision making. To the extent that making a personal choice is a form of personal satisfaction, then the means to maximize our collective satisfaction is to make as many personal choices available as possible (Posner, 1992). In addition, personal autonomy is considered valuable in and of itself, since it is viewed by many as the deepest expression of one's individuality and personality, i.e., the deepest expression of one's self. Thus, commentators have argued that a commitment to individual liberty requires that individuals be left free to create children using somatic cell nuclear transfer if they so choose and if their doing so does not cause significant harms to others (Robertson 1997; Macklin 1997).

But such liberty is too broad in scope to be an uncontroversial moral right (Mill 1859; Rhodes 1995). As many others have pointed out, granting such untethered primacy to autonomy can ignore the possibility of competing values that are held as dear in some or all circumstances. Thus, principles of equality, virtue, nonmaleficence, and benevolence may compete for primacy with the principle of autonomy. In her March 13, 1997 testimony before NBAC, theologian Lisa Cahill asserted that

> ". . .a excessive focus on [autonomy] can prevent us from seeing why other values as well are socially important and protectable and why certain freely chosen practices can still be wrong even if they do not result in immediate or quantifiable harm or direct infringement on the options of other free agents. . .A narrow focus on autonomy to freely choose personally preferred goals undermines our ability to talk together about what would go to make up a good society and what we can do concretely to move towards one."

Indeed, some analysts, such as legal scholar Mary Ann Glendon (1991) and sociologist Amitai Etzioni (1990) have argued that the rhetoric of rights and personal autonomy has obscured the correlative values of responsibility, duty, and restraint. And, indeed, while personal autonomy is upheld rhetorically as an ideal, it is often also constrained on behalf of the common good, even in the absence of harm to others, both in personal and public life. This still leaves open, however, the question of when, in particular, other values ought to trump the value of personal liberty.

In their book *Democracy and Disagreement (1996)* political theorists Amy Gutmann and Dennis Thompson set forth some guidelines for when moral arguments ought to be allowed to constrain personal liberty. Among them are: (1) a convincing argument that a particular action is wrong, independent of whatever specific harms it might cause, because it violates, for example,

natural law, social convention, or fundamental social values; (2) that the wrong is serious enough to warrant public attention and is otherwise eligible for public regulation; and (3) that regulation or prohibition will not cause more harm than the action that opponents seek to prohibit.

Freedom of Reproductive Choice

While the discussion of social values, above, might satisfy the first two conditions set down by Gutmann and Thompson, the third condition requires more attention in this case. To determine whether prohibition of somatic cell nuclear transfer cloning would cause more harm than it prevents, one must examine the particular kind of choices that would be constrained. Certain actions, it is argued, deserve special protection from collective decision making, and human reproduction is often cited as an example. Reproduction is an intensely personal phenomenon, most often commencing in the intimacy of coitus, and always resulting in the creation of a parental relationship that redefines one's place in the world. Without reproduction, one remains a child and perhaps a sibling. With reproduction—or with its social equivalent, adoption—one becomes a parent, taking on responsibilities for another that necessarily require abandoning some of the personal freedoms enjoyed before. When and how to take on such responsibilities and to change one's life course is necessarily one of the most personal and significant decisions imaginable.

It could be argued that somatic cell nuclear transfer cloning is not covered by the right to reproductive freedom, because whereas assisted reproductive technologies covered by that right are remedies for inabilities to reproduce sexually, somatic cell nuclear transfer cloning is an entirely new means of reproduction; indeed, its critics see it as radically new and as more a means of the mere "manufacturing of humans" than of reproduction. Its asexual nature, for example, leads some to view it as distinctly different from reproduction, which they view as inherently collaborative and sexual. This led one commentator to note that:

> "It would be possible for female lineages to proceed without any male contribution at all and it would be possible for one woman to create her own child using her own ovum and DNA. . .So the child who is truly the child of a single parent would be a genuine revolution in human history and her or his advent should be viewed with immense caution" (Cahill, 1997).

On the other hand, while somatic cell nuclear transfer cloning is a different means of reproduction than sexual reproduction, it is nonetheless a means that can serve individuals' interest in reproducing. If it is not covered by the moral right to reproductive freedom, some argue, that must be not because it is a new means of reproducing, but instead because it has other objectionable moral features, such as eroding human dignity or uniqueness.

Assuming for the sake of discussion that somatic cell nuclear transfer cloning is a form of reproduction, the question remains whether reproductive freedom ought to protect its use. Reproductive freedom includes not only the familiar right to choose not to reproduce, for example by means of contraception, but also the right to reproduce. It is commonly understood to include

the use of various artificial reproductive technologies, such as *in vitro* fertilization, and sperm or egg donation. But the case for permitting the use of a particular means of reproduction is strongest when that means is necessary for particular individuals to be able to procreate at all.

It is possible that somatic cell nuclear transfer cloning could be the only technique for individuals to create a genetically related child, but in other cases different means of procreating would also be possible. When individuals have alternative means of procreating, cloning might be chosen because it replicates a particular individual's genome. The reproductive interest in question then is not simply reproduction itself, but a more specific interest in choosing what kind of children to have.

However, the more a reproductive choice is not simply the determination of one's own life but the determination of the nature of another, as in the case of cloning via somatic cell nuclear transfer, the more the interests of that other person—that is the resulting child—should carry moral weight in decisions that determine its nature (Annas, 1994). In addition to the parents and child, reproduction is also a communal phenomenon. It thrusts a new person into the world, and the whole community has obligations for this new member's well being.

Thus, the decision to reproduce is rife with consequence both to the new person brought into being and to those who will live and interact with that new person. Naturally, this invites communal commentary on the wisdom of when and how this person is brought into being. And while constitutional law has viewed certain aspects of reproductive choice as fundamental rights, discourse is not so constrained. Thus, one is free to argue, as a matter of ethics, that reproductive choices ought to be made in light of communal values, even while accepting that there are administrative and political reasons for avoiding efforts to embody these moral judgements in the form of laws, whose enforcement would intrude the state into the private realm of family life and conjugal relations to an unacceptable degree.

Freedom of Scientific Inquiry

Another argument made against prohibiting efforts to attempt to create a child through somatic cell nuclear transfer focuses on the need to encourage research and scientific advances. There is no doubt that the freedom of the ethical and responsible pursuit of knowledge has been an enduring American value, supported by scientists and non-scientists alike. Historically, scientific inquiry has been protected and even encouraged because of the great social benefit the public recognizes in maintaining the "sanctity of knowledge and the value of intellectual

freedom."[5] [6] But the importance we attach to free scientific inquiry does not mean the pusuit of science without moral constraints. International statements about the ethics of research with human subjects, such as the Nuremberg Code and the Declaration of Helsinki, make it abundantly clear that science, however valuable, must, as scientists and non-scientists agree, observe important moral boundaries. Scientific research, for example, must not endanger community safety or the rights or interests of its human subjects. Likewise, it must not inflict unnecessary suffering on animals.

Thus, both the federal government and the states already regulate the researcher's methods in order to protect the rights of research subjects and community safety. Research may be restricted, for example, to protect the subject's autonomy by requiring informed consent, and by reviewing the choice of who should serve as research subjects against principles of justice. Thus, for example, if the government can show that restrictions on cloning and cloning technology are sufficiently important to the general well-being of individuals or society, such restrictions are likely to be upheld as legitimate, constitutional governmental actions, even if scientists were held to have a First Amendment right of scientific inquiry (Robertson, 1977).

Therefore, even if scientific inquiry were found to be a constitutionally protected activity, the government could regulate to protect against compelling harms, such as the current physical risks posed by the prospective use of somatic cell nuclear transfer techniques to create children. The freedom to pursue knowledge is distinguishable from the right to choose the method for achieving that knowledge, since the method itself may permissibly be regulated. Although the government may not prohibit research in an attempt to prevent the development of new knowledge, it may and should restrict or prohibit the means used by researchers if they involve sufficient harm to others (Robertson, 1977). Ultimately, researchers themselves are responsible for maintaining ethical and scientific standards and must strive to integrate the two in their work.

Consideration of Exceptional Cases

Even as a matter of ethics, rather than of law, it is quite possible to argue against a wholesale condemnation of somatic cell nuclear transfer cloning of human beings. Some circumstances have been identified in which the choice to create a child in this manner would be understandable, or even, as some have argued, desirable. Consider the following examples:

- A couple wishes to have children, but both adults are carriers of a lethal recessive gene. Rather than risk the one in four chance of conceiving a child who will suffer a short and

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[5] Branzburg v. Hayes, 408 U.S. 665, 705 (1972). Similarly, the Supreme Court stated in Meyer v. Nebraska that the right to liberty guaranteed by the Fourteenth Amendment encompassed freedom to "acquire useful knowledge . . . and generally to enjoy those privileges long recognized at common law as essential to the orderly pursuit of happiness by free men."

[6] Henley v. Wise, 303 F.Supp. 62 (N.D. Ind. 1969).

painful existence, the couple considers the alternatives: to forgo rearing children; to adopt; to use prenatal diagnosis and selective abortion; to use donor gametes free of the recessive trait; or to use the cells of one of the adults and attempt to clone a child. To avoid donor gametes and selective abortion, while maintaining a genetic tie to their child, they opt for cloning.

- A family is in a terrible accident. The father is killed, and the only child, an infant, is dying. The mother decides to use some cells from the dying infant in an attempt to use somatic cell nuclear transfer to create a new child. It is the only way she can raise a child who is the biological offspring of her late husband.

- The parents of a terminally ill child are told that only a bone marrow transplant can save the child's life. With no other donor available, the parents attempt to clone a human being from the cells of the dying child. If successful, the new child will be a perfect match for bone marrow transplant, and can be used as a donor without significant risk or discomfort. The net result: two healthy children, loved by their parents, who happen to be identical twins of different ages.

In each of these examples, the impulse to attempt such cloning can be understood. In the first example, the possible complications caused by having a child who is genetically identical to one of the parents is weighed against the value of avoiding selective abortion or of keeping the marital relationship free of the ghost of an anonymous sperm or egg donor. In the second, the psychological complexities of bearing a "replacement" child are weighed against the grief of losing not only a husband but also the possibility of a child who will grow up as a physical reminder of that love. While some may argue that neither case is compelling, because infertility and grief are part of human existence, the intensely personal nature of that infertility or grief argues for an equally personal decision about how to respond. The third case makes what is probably the strongest possible case for cloning a human being, as it demonstrates how this technology could be used for lifesaving purposes. Indeed, the tragedy of allowing the sick child to die because of a moral or political objection to such cloning overall merely points up the difficulty of making policy in this area.

Some would argue that what is more important in these scenarios is how the resulting child will be viewed. Macklin argues that:

> "The ethics of these situations must be judged by the way in which the parents nurture and rear the resulting child and whether they bestow the same love and affection on a child brought into existence by a technique of assisted reproduction as they would on a child born in the usual way" (Macklin, 1997).

It may be that a policy which prohibited the creation of children though somatic cell nuclear transfer cloning would ban a handful of scenarios for which some people feel sympathy.

Nonetheless, it may be necessary to forbid the practice overall in order to protect other crucial societal values.

Moral Reasoning and Public Policies

> "It is certainly possible that there may be no substantial benefits to society that would result if human cloning were to become a reality. Yet this would constitute a good argument for prohibition only if considerable harms are a likely consequence. We need a realistic portrait, not a recitation of worst case science fiction scenarios before we may conclude that the harms of allowing cloning to proceed in a research context and even beyond are so great that even with regulations and oversight consummate evil will result" (Ruth Macklin, 1997).

> "We should proceed with research into human cloning only if compelling arguments can be made for its potential benefits" (Nancy Duff, 1997).

Some citizens may be persuaded that the harms and wrongs described in this chapter are ethically compelling and might be decisive reasons never to permit cloning via somatic cell nuclear transfer. Others may be less certain about the significance of the objections, and unwilling to conclude that somatic cell nuclear transfer cloning would be ethically impermissible, if and when the risks could be shown to be minimal. This range of views is reflected in the testimony, letters, and commissioned papers reviewed by NBAC, and is also characteristic of the commissioners themselves.

NBAC was asked to consider whether public policy should permit, regulate, or prohibit the creation of children through somatic cell nuclear transfer. The formation of public policy in an area as sensitive as procreation requires careful thought and measured deliberation. In the United States, governmental policies that prohibit or regulate human actions require justification because of a general presumption against governmental interference in individual activities. This presumption can be rebutted under various circumstances for a variety of reasons. Many critics of cloning via somatic cell nuclear transfer are concerned, however, that this initial presumption of no interference with individual actions will lead to unwise policies.

Some considerations carry more weight in the public policy arena than they do in the formation of individual judgments. In setting public policy, for example, pragmatic and procedural considerations often, quite appropriately, carry greater weight than in deciding private choices. One reason for this is that the burden of enforcing public policies must be considered. For example, it is extremely intrusive to monitor reproductive decisions by individuals and couples. It may be impractical to have a policy that allows some cases of somatic cell nuclear transfer to create a child, while prohibiting others, even though we make such judgments privately about individual actions. Furthermore, trying to distinguish acceptable from unacceptable reasons will be difficult. People might be led to misrepresent their true reasons in order to fit whatever is deemed "acceptable."

Moreover, the reasoning used to evaluate the desirability of proposed public policies regarding the creation of children through somatic cell nuclear transfer differs somewhat from the reasoning employed in making private decisions. When individuals make judgments they may rely on many sources of wisdom and knowledge, including their religious faith and moral intuitions. People will use their understanding of morality to decide what they should and should not do, as well as to judge the actions of others.

Those engaged in moral discourse about public policy, however, must move beyond such personal considerations, however deeply felt, and develop coherent arguments that will persuade many others to accept a particular point of view. As a result, it is useful to formulate moral convictions in ways that most people can understand and reflect upon. In a pluralistic society, there is no easy way to determine when and which governmental interventions are warranted. No algorithm clearly indicates whether the arguments for governmental intervention in a particular situation are stronger than the arguments against such interventions. Instead, we must engage in moral discourse, debate, and argument in a process of public deliberation. Although closure must be reached, and decisions made, even if there is no consensus, our society has only just begun to reflect seriously on the possibility of creating children through somatic cell nuclear transfer. It may be premature to come to closure on some issues because so little time has been devoted to the issue.

Thus, the ethics of making policy, as opposed to the ethics of cloning itself, requires us to return to the guidelines set forth by scholars such as Gutmann and Thompson: are the moral concerns sufficiently strong to justify prohibition or regulation? If so, is the price we pay in the form of constraints on personal liberty or the abridgement of legally protected rights acceptable? Can individual cases be treated as exceptions? Or will making exceptions create more problems, in the form of intrusive inquiries into people's motives, for example, such that making the exceptions causes more harm than good? It is difficult to answer these questions with certainty.

Conclusions

In summary, the Commission reached several conclusions in considering the appropriateness of public policies regarding the creation of children through somatic cell nuclear transfer. First and foremost, creating children in this manner is unethical at this time because available scientific evidence indicates that such techniques are not safe at this time. Even if concerns about safety are resolved, however, significant concerns remain about the negative impact of the use of such a technology on both individuals and society. Public opinion on this issue may remain divided. Some people believe that cloning through somatic cell nuclear transfer will always be unethical because it undermines important social values and will always risk causing psychological or other harms to the resulting child. In addition, although the Commission acknowledged that there are cases for which the use of such cloning might be considered desirable by some people, overall these cases were insufficiently compelling to justify proceeding with the use of such techniques. Finally, the Commission was not persuaded by objections to a prohibition

against such cloning which were based, in part, on the expectation that its use is unlikely to be widespread and, in part, on the belief that many of the assumed harms are purely speculative.

Finally, many scenarios of creating children through somatic cell nuclear transfer are based on the serious misconception that selecting a child's genetic makeup is equivalent to selecting the child's traits or accomplishments. A benefit of more widespread discussion of such cloning would be a clearer recognition that a person's traits and achievements depend heavily on education, training, and the social environment, as well as on genes. Should this type of cloning proceed, however, any children born as a result of this technique should be treated as having the same rights and moral status as any other human being.

Clearly, there is a need for further public deliberation on the serious moral concerns raised by the prospect of cloning human beings. As the Commission proceeded in its review, the members learned from listening to the public and to each other. Many important issues remain unresolved, such as the nature and scope of our moral interest in the freedom to make procreative choices, and whether that freedom should encompass creating a child through somatic cell nuclear transfer cloning. The Commission believes that it is essential to try to understand the diverse reactions to such cloning and the ethical arguments for and against various policies regarding its use. This report is only the beginning of a public process to assess the impact of this new technology.

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