The successful cloning of an adult sheep, announced in Scotland this past February, is one of the most dramatic recent examples of a scientific discovery becoming a public issue. During the last few months, various commentators—scientists and theologians, physicians and legal experts, talk-radio hosts and editorial writers—have been busily responding to the news, some calming fears, other raising alarms about the prospect of cloning a human being. At the request of the President, the National Bioethics Advisory Commission (NBAC) held hearings and prepared a report on the religious, ethical, and legal issues surrounding human cloning. While declining to call for a permanent ban on the practice, the Commission recommended a moratorium on efforts to clone human beings, and emphasized the importance of further public deliberation on the subject.

An interesting tension is at work in the NBAC report. Commission members were well aware of "the widespread public discomfort, even revulsion, about cloning human beings." Perhaps recalling the images of Dolly the ewe that were featured on the covers of national news magazines, they noted that "the impact of these most recent developments on our national psyche has been quite remarkable." Accordingly, they felt that one of their tasks was to articulate, as fully and sympathetically as possible, the range of concerns that the prospect of human cloning had elicited.

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Yet it seems clear that some of these concerns, at least, are based on false beliefs about genetic influence and the nature of the individuals that would be produced through cloning. Consider, for instance, the fear that a clone would not be an “individual” but merely a “carbon copy” of someone else—an automaton of the sort familiar from science fiction. As many scientists have pointed out, a clone would not in fact be an identical copy, but more like a delayed identical twin. And just as identical twins are two separate people—biologically, psychologically, morally and legally, though not genetically—so, too, a clone would be a separate person from her non-contemporaneous twin. To think otherwise is to embrace a belief in genetic determinism—the view that genes determine everything about us, and that environmental factors or the random events in human development are insignificant.

The overwhelming scientific consensus is that genetic determinism is false. In coming to understand the ways in which genes operate, biologists have also become aware of the myriad ways in which the environment affects their “expression.” The genetic contribution to the simplest physical traits, such as height and hair color, is significantly mediated by environmental factors (and possibly by stochastic events as well). And the genetic contribution to the traits we value most deeply, from intelligence to compassion, is limited and indirect.

It is difficult to gauge the extent to which “repugnance” toward cloning generally rests on a belief in genetic determinism. Hoping to account for the fact that people “instinctively recoil” from the prospect of cloning, James Q. Wilson wrote, “There is a natural sentiment that is offended by the mental picture of identical babies being produced in some biological factory.” Which raises the question: once people learn that this picture is mere science fiction, does the offense that cloning presents to “natural sentiment” attenuate, or even disappear? Jean Bethke Elshtain cited the nightmare scenarios of “the man and woman on the street,” who imagine a future populated by “a veritable army of Hitlers, ruthless and remorseless bigots who kept reproducing themselves until they had finished what the historic Hitler failed to do: annihilate us.” What happens, though, to the “pity and terror” evoked by the topic of cloning when such scenarios are deprived (as they deserve to be) of all credibility?

Richard Lewontin has argued that the critics’ fears—or at least, those fears that merit consideration in formulating public policy—dissolve once genetic determinism is refuted. He criticizes the NBAC report for excessive deference to opponents of human cloning, and calls for greater public education on the scientific issues. (The Commission in fact makes the same recommendation, but Lewontin seems unimpressed.) Yet even if a public education campaign succeeded in eliminating the most egregious misconceptions about genetic influence, that wouldn’t settle the matter. People might continue to express concerns about the interests and rights of human clones, about the social and moral consequences of the cloning process, and about the possible motivations for creating children in this way.

**Interests and Rights**

One set of ethical concerns about human clones involves the risks and uncertainties associated with the current state of cloning technology. This technology has not yet been tested with human subjects, and scientists cannot rule out the possibility of mutation or other biological damage. Accordingly, the NBAC report concluded that “at this time, it is morally unacceptable for anyone in the public or private sector, whether in a research or clinical setting, to attempt to create a child using somatic cell nuclear transfer cloning.” Such efforts, it said, would pose “unacceptable risks to the fetus and/or potential child.”

The ethical issues of greatest importance in the cloning debate, however, do not involve possible failures of cloning technology, but rather the consequences of its success. Assuming that scientists were able to clone human beings without incurring the risks mentioned above, what concerns might there be about the welfare of clones?

Some opponents of cloning believe that such individuals would be wronged in morally significant ways. Many of these wrongs involve the denial of what Joel Feinberg has called “the right to an open future.” For example, a child might be constantly compared to the adult from whom he was cloned, and thereby burdened with oppressive expectations. Even worse, the parents might actually limit the child’s opportunities for growth and development: a child cloned from a basketball player, for instance, might be denied any educational opportunities that were not in
line with a career in basketball. Finally, regardless of his parents’ conduct or attitudes, a child might be burdened by the thought that he is a copy and not an “original.” The child’s sense of self-worth or individuality or dignity, so some have argued, would thus be difficult to sustain.

How should we respond to these concerns? On the one hand, the existence of a right to an open future has a strong intuitive appeal. We are troubled by parents who radically constrict their children’s possibilities for growth and development. Obviously, we would condemn a cloning parent for crushing a child with oppressive expectations, just as we might condemn fundamentalist parents for utterly isolating their children from the modern world, or the parents of twins for inflicting matching wardrobes and rhyming names. But this is not enough to sustain an objection to cloning itself. Unless the claim is that cloned parents cannot help but be oppressive, we would have cause to say they had wronged their children only because of their subsequent, and avoidable, sins of bad parenting—not because they had chosen to create the child in the first place. (The possible reasons for making this choice will be discussed below.)

We must also remember that children are often born in the midst of all sorts of hopes and expectations; the idea that there is a special burden associated with the thought “There is someone who is genetically just like me” is necessarily speculative. Moreover, given the falsity of genetic determinism, any conclusions a child might draw from observing the person from whom he was cloned would be uncertain at best. His knowledge of his future would differ only in degree from what many children already know once they begin to learn parts of their family’s (medical) history. Some of us knew that we would be bald, or to what diseases we might be susceptible. To be sure, the cloned individual might know more about what he or she could become. But because our knowledge of the effect of environment on development is so incomplete, the clone would certainly be in for some surprises.

Finally, even if we were convinced that clones are likely to suffer particular burdens, that would not be enough to show that it is wrong to create them. The child of a poor family can be expected to suffer specific hardships and burdens, but we don’t thereby conclude that such children shouldn’t be born. Despite the hardships, poor children can experience parental love and many of the joys of being alive; the deprivations of poverty, however painful, are not decisive. More generally, no one’s life is entirely free of some difficulties or burdens. In order for these considerations to have decisive weight, we have to be able to say that life doesn’t offer any compensating benefits. Concerns
Scholars in diverse fields now agree on the importance of investigating the impact of consumption practices on the global environment, quality of life, and international justice. In this comprehensive collection of essays, respected scholars from many disciplines—philosophy, economics, sociology, political science, demography, theology, history, and social psychology—examine the causes, nature, and consequences of present-day consumption patterns in the United States and throughout the world. Individual essays evaluate the impact of consumption practices on our own lives, our institutions, other people, and the environment. They also give explicit attention to the principles relevant to a consumption ethic, as well as to the policies and practices that such an ethic permits or requires.

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—James W. Nickel, University of Colorado

"Conscientious consumption is good for the consumer, fair to other people, and environmentally sustainable. It is benign in its impact on people and on the environment, and equitable. David Crocker and the eminent authors he has gathered in this provocative book examine the ethics of consumption in a novel and passionately dispassionate way. It is the best book on an important but neglected topic."

—Paul Streeten, Chairman of the Editorial Board, World Development

This goal and these other technologies are acceptable, cloning should be acceptable as well. On the other hand, many opponents of cloning see it as part of the second technology: even though cloning is a transplantation of an entire nucleus and not of specific genes, it is nevertheless an attempt to produce a child with certain traits. The deep misgivings we may have about the genetic manipulation of offspring should apply to cloning as well.

The debate cannot be resolved, however, simply by determining which technology to assimilate cloning to. For example, some opponents of human cloning see it as continuous with assisted reproductive technologies; but since they find those technologies objectionable as well, the assimilation does not indicate approval. Rather than argue for grouping cloning with one technology or another, I wish to suggest that we can best understand the significance of the cloning process by comparing it with these other technologies, and thus broadening the debate.

To see what can be learned from such a comparative approach, let us consider a central argument that has been made against cloning—that it undermines the
structure of the family by making identities and lineages unclear. On the one hand, the relationship between an adult and the child cloned from her could be described as that between a parent and offspring. Indeed, some commentators have called cloning “asexual reproduction,” which clearly suggests that cloning is a way of generating descendants. The clone, on this view, has only one biological parent. On the other hand, from the point of view of genetics, the clone is a sibling, so that cloning is more accurately described as “delayed twinning” rather than as asexual reproduction. The clone, on this view, has two biological parents, not one—they are the same parents as those of the person from whom that individual was cloned.

Cloning thus results in ambiguities. Is the clone an offspring or a sibling? Does the clone have one biological parent or two? The moral significance of these ambiguities lies in the fact that in many societies, including our own, lineage identifies responsibilities. Typically, the parent, not the sibling, is responsible for the child. But if no one is unambiguously the parent, so the worry might go, who is responsible for the clone? Insofar as social identity is based on biological ties, won’t this identity be blurred or confounded?

Some assisted reproductive technologies have raised similar questions about lineage and identity. An anonymous sperm donor is thought to have no parental obligations towards his biological child. A surrogate mother may be required to relinquish all parental claims to the child she bears. In these cases, the social and legal determination of “who is the parent” may appear to proceed in defiance of profound biological facts, and to subvert attachments that we as a society are ordinarily committed to upholding. Thus, while the aim of assisted reproductive technologies is to allow people to produce or raise a child to whom they are biologically connected, such technologies may also involve the creation of social ties that are permitted to override biological ones.

In the case of cloning, however, ambiguous lineages would seem to be less problematic, precisely because no one is being asked to relinquish a claim on a child to whom he or she might otherwise acknowledge a biological connection. What, then, are the critics afraid of? It does not seem plausible that someone would have herself cloned and then hand the child over to her parents, saying, “You take care of her! She’s your daughter!” Nor is it likely that, if the cloned individual did raise the child, she would suddenly refuse to pay for college on the grounds that this was not a sister’s responsibility. Of course, policymakers should address any confusion in the social or legal assignment of responsibility resulting from cloning. But there are reasons to think that this would be less difficult than in the case of other reproductive technologies.

Similarly, when we compare cloning with genetic engineering, cloning may prove to be the less troubling of the two technologies. This is true even though the dark futures to which they are often alleged to lead are broadly alike. For example, a recent Washington Post article examined fears that the development of genetic enhancement technologies might “create a market in preferred physical traits.” The reporter asked, “Might it lead to a society of DNA haves and have-nots, and the creation of a new underclass of people unable to keep up with the genetically fortified Joneses?” Similarly, a member of the National Bioethics Advisory Commission expressed concern that cloning might become “almost a preferred practice,” taking its place on the continuum of providing the best for your child. As a consequence, parents who chose to “play the lottery of old-fashioned reproduction would be considered irresponsible.”

Such fears, however, seem more warranted with respect to genetic engineering than to cloning. By offering some people—in all probability, members of the upper classes—the opportunity to acquire desired traits through genetic manipulation, genetic engineering could bring about a biological reinforcement (or accentuation) of existing social divisions. It is hard enough already for disadvantaged children to compete with their more affluent counterparts, given the material resources and intellectual opportunities that are often available only to children of privilege. This unfairness would almost certainly be compounded if genetic manipulation came into the picture. In contrast, cloning does not bring about “improvements” in the genome: it is, rather, a way of duplicating the genome—with all its imperfections. It wouldn’t enable certain groups of people to keep getting better and better along some valued dimension.

To some critics, admittedly, this difference will not seem terribly important. Theologian Gilbert Meilaender, Jr., objects to cloning on the grounds that children created through this technology would be “designed as a product” rather than “welcomed as a
gift." The fact that the design process would be more selective and nuanced in the case of genetic engineering would, from this perspective, have no moral significance. To the extent that this objection reflects a concern about the commodification of human life, we can address it in part when we consider people’s reasons for engaging in cloning.

Reasons for Cloning

This final area of contention in the cloning debate is as much psychological as it is scientific or philosophical. If human cloning technology were safe and widely available, what use would people make of it? What reasons would they have to engage in cloning?

In its report to the President, the Commission imagined a few situations in which people might avail themselves of cloning. In one scenario, a husband and wife who wish to have children are both carriers of a lethal recessive gene:

Rather than risk the one in four chance of conceiving a child who will suffer a short and painful existence, the couple considers the alternatives: to forego 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.

In another scenario, 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 [sic] to be identical twins of different ages."

The Commission was particularly impressed by the second example. That scenario, said the NBAC report, "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 report suggests that it would be a "tragedy" to allow "the sick child to die because of a moral or political objection to such cloning." Nevertheless, we should note that many people would be morally uneasy about the use of a minor as a donor, regardless of whether the child were a result of cloning. Even if this unease is justifiably overridden by other concerns, the "transplant scenario" may not present a more compelling case for cloning than that of the infertile couple desperately seeking a biological child.

Most critics, in fact, decline to engage the specifics of such tragic (and presumably rare) situations. Instead, they bolster their case by imagining very different scenarios. Potential users of the technology, they suggest, are narcissists or control freaks—people who will regard their children not as free, original selves but as products intended to meet more or less rigid specifications. Even if such people are not genetic determinists, their recourse to cloning will indicate a desire to exert all possible influence over what "kind" of child they produce.

The critics’ alarm at this prospect has in part to do, as we have seen, with concerns about the psychological burdens such a desire would impose on the clone. But it also reflects a broader concern about the values expressed, and promoted, by a society’s reproductive policies. Critics argue that a society that enables people to clone themselves thereby endorses the most narcissistic reason for having children—to perpetuate oneself through a genetic encore. The demonstrable falsity of genetic determinism may detract little, if at all, from the strength of this motive. Whether or not clones will have a grievance against their parents for producing them with this motivation, the societal indulgence of that motivation is improper and harmful.

It can be argued, however, that the critics have simply misunderstood the social meaning of a policy that would permit people to clone themselves even in the absence of the heartrending exigencies described in the NBAC report. This country has developed a strong commitment to reproductive autonomy. (This commitment emerged in response to the dismal history of eugenics—the very history that is sometimes invoked to support restrictions on cloning.) With the exception
of practices that risk coercion and exploitation—
notably baby-selling and commercial surrogacy—we
do not interfere with people’s freedom to create and
acquire children by almost any means, for almost any
reason. This policy does not reflect a dogmatic liber-
tarianism. Rather, it recognizes the extraordinary
personal importance and private character of repro-
ductive decisions, even those with significant social
repercussions.

Our willingness to sustain such a policy also reflects
a recognition of the moral complexities of parenting.
For example, we know that the motives people have

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**The motives people have**
**for bringing a child into the world**
**do not necessarily determine**
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for bringing a child into the world do not necessarily
determine the manner in which they raise him. Even
when parents start out as narcissists, the experience of
childrearing will sometimes transform their initial
impulses, making them caring, respectful, and even
self-sacrificing. Seeing their child grow and develop,
they learn that she is not merely an extension of them-
selves. Of course, some parents never make this dis-
covery; others, having done so, never forgive their
children for it. The pace and extent of moral develop-
ment among parents (no less than among children) is
infinitely variable. Still, we are justified in saying that
those who engage in cloning will not, by virtue of this
fact, be immune to the transformative effects of paren-
thood—even if it is the case (and it won’t always be)
that they begin with more problematic motives than
those of parents who engage in the “genetic lottery.”

Moreover, the nature of parental motivation is itself
more complex than the critics often allow. Though we
can agree that narcissism is a vice not to be encour-
aged, we lack a clear notion of where pride in one’s
children ends and narcissism begins. When, for exam-
ple, is it unseemly to bask in the reflected glory of a
child’s achievements? Imagine a champion gymnast
who takes delight in her daughter’s athletic prowess.
Now imagine that the child was actually cloned from
one of the gymnast’s somatic cells. Would we have to
revise our moral assessment of her pleasure in her
daughter’s success? Or suppose a man wanted to be
cloned and to give his child opportunities he himself
had never enjoyed. And suppose that, rightly or
wrongly, the man took the child’s success as a measure
of his own untapped potential—an indication of the
flourishing life he might have had. Is this sentiment
blamable? And is it at all different from what many
natural parents feel?

**Conclusion**

Until recently, there were few ethical, social, or legal
discussions about human cloning via nuclear trans-
plantation, since the scientific consensus was that such
a procedure was not biologically possible. With the
appearance of Dolly, the situation has changed. But
although it now seems more likely that human cloning
will become feasible, we may doubt that the practice
will come into widespread use.

I suspect it will not, but my reasons will not offer
much comfort to the critics of cloning. While the tech-
ology for nuclear transplantation advances, other
technologies—notably the technology of genetic engi-
neering—will be progressing as well. Human genetic
engineering will be applicable to a wide variety of
traits; it will be more powerful than cloning, and hence
more attractive to more people. It will also, as I have
suggested, raise more troubling questions than the
prospect of cloning has thus far.

—Robert Wachbroit

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