EMBRYO TECHNOLOGY

Cloning our way to "the next level"

Stuart A. Newman

Some scenes from the end of a millennium:

> *The arrival of a lamb, immaculately conceived, the very naming of which mocks her status as the world's first manufactured mammal.*
>
> *The departure of 39 identically dressed and coiffed androgynous computer programmers, all renamed, and some with their bodily "vehicles" surgically desexed.*

Certain uncomfortable parallels between these ostensibly unconnected events emerge when one attends to the debate on the prospect of human cloning unleashed by Dolly's advent. Some commentators, e.g., Ruth Hubbard in *The Nation*,[1] and Daniel Callahan,[2] in the *New York Times*, expressed revulsion (shared by a majority of the public, by all reports) at the cultish scenario of stamping out babies according to some prespecified genetic recipes, a prospect, according to Callahan, that "robs the child of selfhood."

However, these sentiments did not seem to represent the New Age cutting edge. *Nature*'s editorialist, for instance, embraced the subordination of one individual's fate to another's will (incidentally, a prominent Heaven's Gate theme), in stating that "human cloning could technically be highly desirable—for example, in order to generate skin grafts for burn victims, or other 'spare-part' provision," and predicted that "highly regulated human cloning will, after all, be found to be a tolerable way to proceed."[3]

While the Heaven's Gate cybernauts subjected themselves alone to the standardization of their human "containers," in the expectation that this would help them proceed to the "next level," advocates of human cloning look forward to more broadly based advantages, such as might accrue to those who come to have rights over clones or their organs, as well as to any individuals who would represent favorable outcomes of such experiments.

Because it would be a policy that imposes total genetic predestination on others (give or take some mitochondrial sequences), the implementation of human cloning would have greater effects on society as a whole than the self-destruction of a limited number of devotees. In each case, however, optimism about the consequences of striking out on new pathways of producing or processing people seems uncritical, and is difficult to justify.

Indeed, like the late denizens of Rancho Santa Fe, some advocates of human cloning appear to have watched too many episodes of *Star Trek*. The views of Nathan Myhrvold, Microsoft's chief technology officer, for example, would not normally weigh heavily in this debate, except for the fact that his employer has the resources of a mid-sized country, and is currently investing heavily in biotechnology. As Myhrvold notes in the online magazine *Slate*[4], "Cloning is the only predictable way to reproduce. . .Sexual reproduction is a crapshoot by comparison." Because identical twins "*are different people in the most fundamental sense*" [his emphasis], clones, which are physically no different from twins (Myhrvold was trained as a physicist) can enter society with no stigma attached. (Although without regular parents, some alternative arrangements would have to be made to introduce them around and pay their college tuition, points he neglects to consider.)

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For Myhrvold, the real problem is the critics of human cloning: "Fear of clones is just another form of racism." But this confuses dismay over the effect of cloning on a society that would manufacture people (to use the phrase of a recent correspondent to the *Manchester Guardian*)[5] "in a situation grotesquely out of keeping with that in which organic beings have emerged on this planet," with distaste for the clones themselves. Myhrvold's logic could also be used to argue that opponents of slavery, who feared the existence of slaves, were racist.

It is fairly clear that direct replication of already existing individuals would be only a cottage industry were human cloning to take hold. Eugenics represents the real future of embryo technology if only obsolete, economically noncompetitive, ways of thinking about humans can be overcome.

Time magazine's Jeffrey Kluger asks "Is cloning all that different from genetically engineering an embryo to eliminate a genetic disease?. . .If we accept this kind of tinkering, can't we accept cloning?"[6] Thus, *Time* sought to reassure its readers about this potential new way of producing people by conflating it with the presumably noncontroversial technique of human germline gene modification.

This might surprise members of the relevant US and European governmental advisory panels on human genetic research, which have yet to even consider germline protocols. But perhaps *Time* had it largely right, if out of sequence. Just as chemists and biologists strive to use standard reagents to ensure consistency in their experiments, most likely human germline manipulation will be a nonstarter unless a set of basic human prototypes becomes available, in the form of clones with known properties which can be genetically customized to order.

Opponents of a ban on human cloning like Ruth Deech, chair of the British Human Fertilization and Embryo Authority, who seeks to "leave the door open to the potential benefits of this technique,"[7] must give hard thought to the social significance of how people are brought into the world. The automatic (through reproduction) or elective (through adoption) statutory enfranchisement of an individual into a preexisting social nexus (e.g., the "family" that looms so large in the current culture wars) represents the only way human society has consistently been able to assign responsibility of individuals for one another.

It would essentially be impossible to enforce such enfranchisement for human organisms who originated without parents, as it would be for human organisms synthesized from chemical reagents in a test tube, were this to become possible. And it is doubtful that those espousing the right to clone as a tenet of libertarianism would expect the government to pick up the ball and look after abandoned clones. Perhaps Heaven's Gate would take them in. Failing that, if something goes wrong in the manufacturing process, *caveat emptor* and *caveat replica*.

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3. [Editorial] 1997. Human cloning requires a moratorium, not a ban. *Nature* **386**: 1.
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5. Trussell, D. 1997. Human life devalued by artificial creation. *Manchester Guardian Weekly*, March 16, p. 2.
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7. Dickson, D. 1997. UK embryo law "may need changes." *Nature* **386**: 98.