Egg Transplants: Not the End of the World

By Joshua Lederberg

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"THE NATURE of the bond between parents and their children, not to mention everyone's values about the individual's uniqueness, could be changed beyond recognition." According to Harvard professor James D. Watson, in testimony before the House Committee on Science and Astronautics, this is the probable outcome of experiments in human embryology. He believes that scientists have neglected to discuss the technical possibilities of new directions in human reproductive biology, and he suggests that strict laws be considered against experimental studies with human embryos. Indeed, these must be controlled by international agreement, for no country has a monopoly on scientific talent and interest.

Watson also remarks that some "believe the matter is of marginal importance now, and that is a red herring designed to take our minds off our callous attitudes toward war, poverty, and racial prejudice." What appears at first sight to be a mischievous suggestion may then be a grand spoof, worthy of the author of "The Double Helix."

My own stance is accurately quoted by Watson: "Lederberg, among the first to talk about cloning as a practical matter, now seems bored with further talk . . . we should channel our influence to the prevention of the widescale, irreversible damage to our genetic material that is now occurring through increasing exposure to man-created mutagenic compounds. To him, serious talk about cloning is essentially crying wolf when a tiger is already inside the walls."

By cloning, Watson refers to experiments, now done many times with frogs, in which the egg nucleus is replaced by another one taken from a mature cell. From a strictly genetic standpoint, the result is equivalent to making a cutting from a rosebush. Bypassing the sexual process means that the progeny is like an identical twin—a result that many people confuse with making an identical copy of a personality.

Is this worth making such a fuss about? What a plausible comedy one could write about the diplomatic maneuvering, the investments in bargaining chips, the conflicting intelligence reports, in the background of the international conference Watson projects. And we can again see China and France as probable holdouts against an

egg-nucleus test-ban treaty, believing that their national interests might be better served by retaining independent options.

But there is a heartache behind that comedy. The world-system would not know how to reach such an agreement even if it were in fact necessary for global survival. Every scientist must face the ambivalent potential of knowledge as it may be applied in a world that does not know how to govern itself. However, scientists may be overly self-conscious, for the same potentials for abuse apply to statesmanship, industry, even the arts—every human activity that maintains the fabric of a nation.

Risk of Confusion

IT WOULD BE AWKWARD to have to make a case for cloning in man—we simply do not have the necessary background of animal experimentation to know what risks would be involved, nor to know what human need would ever be served by it. Some might be imagined—for example, to circumvent many types of sterility that now prevent a couple from having a child "of their own"; but better solutions to such problems might also be developed. Nor would I condone clinical cloning if I could place any confidence in Watson's concern that "all hell will break loose" just when children are born by such a route.

Even then, I would want to put formal limitations on research with eggs and embryos. Just how would this be policed? Should it apply to studies of animals, or of human cell cultures, which might eventually lead to knowledge about human eggs? Should we purge the scientific literature, and the textbooks, of references to such knowledge? Do we censor publications from other countries? Should we discourage even thinking about such pornography? If hell were really that imminent, none of these steps would be out of bounds. But we know we will not take them. Instead we may face a more insidious confusion about which lines of research are moral, which not; and this may further erode the already fragile public support for basic research in general.

Watson's actual concerns about embryological research seem to be: (1) that babies conceived not in sin will have an aberrant psychic relationship to their parents, (2) that women may be exploited as surrogate mothers, carrying someone else's eggs, and (3) that a totalitarian regime might use all of these methods for genetic regimentation.

These are not questions that can be answered by the techniques of molecular biology. However, I believe that Watson has overrated the importance of DNA, in contrast to other contingent and family bonds, in his prediction of disaster. In both contending cultures most children are a product of insemination. Do we believe that planned children have a looser bond to their parents than the accidentals? Studies of children conceived by artificial insemination, and above all, common knowledge of adopted children, give the lie to the premise that the filial bond is woven by impregnation.

As to surrogate motherhood, Watson is concerned with more than coercion, or the hire of a wet-nurse's uterine services. He fears that "the boring meaninglessness of the lives of many women would be sufficient cause for their willingness." Is he decrying embryology or sexist oppression? In proper libertarian style, women may defend their right to be diverted however it suits them. But perhaps they will also support legislation that would punish any initiation of pregnancy without a woman's willing consent to the pregnancy. Most of the prosecutions would have nothing to do with transplanted eggs.

Do we really need any new law to cope with the fantasied chances for abuse? Surely no court would enforce a prenatal contract that required giving up a child after it was born. The law should perhaps clear up the confusion that remains in some states about the legal parenthood of children born from artificial insemination. And in the process, it could also reaffirm what common sense tells us—that a child is born to the mother who carried him, no matter how or whether conceived. But is there any reason to deny a barren woman the possibility of experiencing pregnancy?

Dangers of State Control

STATIST INTRUSIONS do worry me. Cloning is the only technique by which the fantasies of the racial purists could be realized, and if Hitler had had a scientific view of race, he might have promulgated the method. But nothing would be gained toward forfending such an abuse by stopping biological research in democratic countries today. Nor would there have been greater advantage in preserving the false doctrines of Nazi race-biology or Stalinist Lysenkoism at the expense of our modern knowledge of DNA. Future tyrants would have tortured their captives less "scientifically," but not less viciously.

Few people, nevertheless, fail to be repelled by the idea of a population of xerocopies of a particular genetic type, as might result from the renucleation of a harem of eggs. The force of the metaphor has little to do with the realities of such a prospect. Is it after all much more likely, or more malevolent than shaping a herd by conventional methods? Our reactions are [illegible] with a universal protest against [illegible] dividualization, against the shrinkage of our individual creativity space in an ever more crowded world.

In fact, studies of separated twins show that most personality traits owe about as much to variations in environment as to variations in heredity, even within the confines of lower-middle-class white culture. It follows that human variety among cultures, across national and ethnic boundaries, is mainly of environmental origin today, and would not be profoundly altered

even if the gene pool of the species were narrowed to many fewer types.

This argument is not to advocate a genetic xerocopy process. It does suggest that the cloning metaphor confuses the real sources of loss of individuality. The metaphor is [illegible] a parody of the expectations that [illegible] parents today have of their children.

There is a paradoxical danger that legal controls against innovations in reproductive method or against parental control increase the danger of state interference — just as the actual policing of pornography is a serious threat to valid free speech.

On the other hand, the renucleation of human eggs cannot be regarded as a subject of frivolous or irresponsible whimsey. For one thing it must be preceded by a large body of investigative work on other animals — and the successful cloning of a mouse, though overdue by some of my own prophecies, has yet to be reported. During the interval that such laboratory findings appear and are critically reviewed, we can also ponder whether there are any legitimate human applications of such a technique and the context in which they should be judged. Differing views may be taken of the abstract morality of cloning in principle. A botched effort in a field as notorious as this will be unanimously judged as harshly, and will be as damaging to any future efforts, as was the fire that killed three Apollo astronauts.

Watson's specific [illegible]ts oscillate among several order[illegible]rony. They are nevertheless a c[illegible]u-tion about relating ex[illegible]on human life to actual[illegible] I also agree with him t[illegible]m-portant a subject to [illegible] in the hands of the scien[illegible]ical communities. I am n[illegible] optimistic about the mora[illegible] that is achievable by laws — these are by definition written by politicians. There are many matters that must be left to individual conscience, and the moral sanctions of an informed community. At some point, a responsible physician must give counsel as well as provide treatment to a patient in his charge.

There are indeed tigers within our walls that deserve more immediate attention from our lawmakers. We can prevent moral dilemmas about how to remove genetic defects by paying more attention to preventive environmental hygiene. A scandalously small number of the additives we pour into our milieu—in drugs, foods, water and air pollutants — have [illegible]d for their genetic impac[illegible]ve a long way to go in pe[illegible] reliably inte[illegible]ing such te[illegible]

[illegible]o think that teach[illegible]d engine[illegible]ut of work when [illegible]ll provide so lavishly and so clumsily for the most important of gene products — the eager minds of the nation's children!