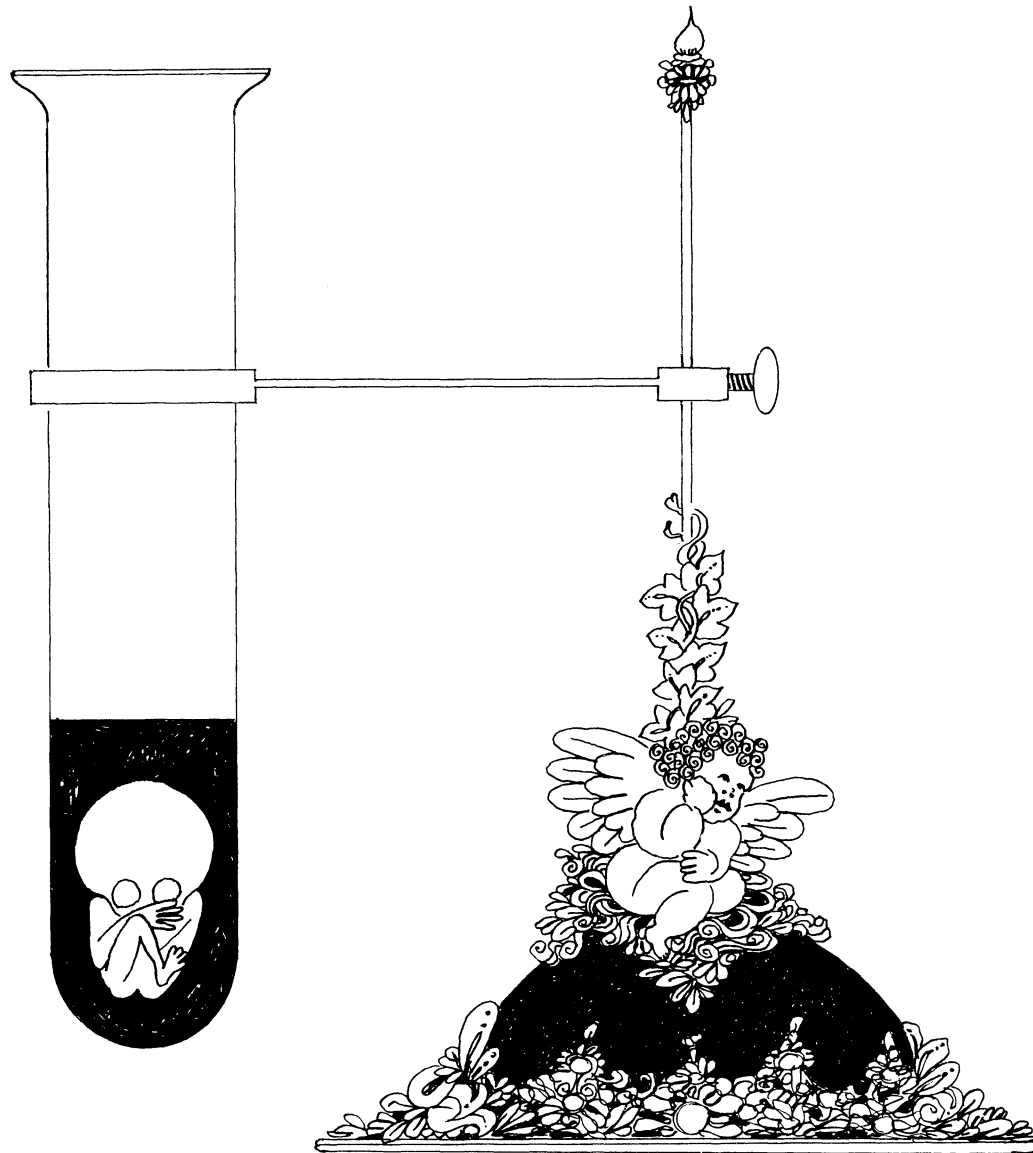


Just Cloning Around

Merle Wallis Bolick



Jeux génétiques – ‘Just Cloning Around’

Merle Bolick spéculé sur les dangers et les implications politiques des découvertes récentes dans le domaine du génie génétique et de la fécondation en laboratoire.

The most famous recent advances in genetic engineering have been laboratory fertilization (Remember Louise Brown?) and cloning. But these are just two of many new technologies that will probably reshape our species totally within the next ten to fifteen years. As Ted Howard and Jeremy Rifkin have said, through the biological revolution, we now have the opportunity to ‘make conscious and deliberate decisions to irreversibly alter the biological structure of millions of other men and women and their descendants for all time,’ not by accident or ‘precipitous passion of the moment,’ as in the nuclear revolution, but ‘by calculation and planning.’¹ As with nuclear power, too, ignorance is no shield.

The relatively simple process called *in vitro* fertilization (fertilization ‘in glass’), test-tube fertilization of a human egg with human sperm, has given rise to many fears. In England Drs.

Patrick Steptoe and Robert Edwards have been merely the first to provide healthy offspring for couples who would otherwise have been unable to reproduce because of a blockage in the women’s fallopian tubes. In these cases the women’s own eggs were fertilized in the laboratory with their husbands’ sperm and then implanted back in their own wombs where they were carried to term and delivered normally. The question posed by these cases is: ‘Is childbearing a right or a privilege in a world that is already over-populated and where many unwanted children go unadopted?’

It is not so much the technique itself but the possible applications of it that provoke so much controversy. Rich and svelte women might use this method to have their children borne by women unable to afford ‘pride in their figures’. This would merely be an extension of the formerly fashionable practice of wet-nursing, whereby the bodies of poor women were utilized by those who could afford not to expend the time, effort and possible ‘loss of figure’ to nurture their own infants.

Almost one per cent of children born in the United States are the product of artificial insemination. The technique of *in vitro* fertilization followed by embryo transplant could make arti-

ficial insemination a much more efficient process than it is now. Women would no longer have to be inseminated so often in order to conceive. In addition, a woman who has had an ovariectomy or hysterectomy might borrow an egg from, say, her sister or mother, have it fertilized with her husband's sperm, in the laboratory, and implanted in yet a third woman who would agree to carry the child for a price. Such a procedure is already foreshadowed by the present practice of couples who choose artificial insemination of the wife by an unknown donor in cases where the husband is sterile. Egg donation could become as popular as sperm donation in the future.

The problem of surrogate mothers is one that will clear itself up in a very short time. While scientists are reporting success in keeping test-tube babies alive for progressively longer periods, the technology for incubating premature infants is becoming more and more sophisticated. Soon the two technologies will meet in the middle and the first true test-tube baby will be born without ever having been inside the womb. In the meantime, it is curious to note the tone of many male writers on the subject of surrogate mothers—those who would, for a price, bear a child that is not their own. Like all women, they are seen as saints or prostitutes, performing supererogatory acts of self-sacrifice to aid the suffering, or, alternatively, selling their bodies in a cynical way to the highest bidder. Women who are low on the economic scale may well sell the one skill that cannot so far be co-opted by men, in order to stay alive and support their families.² With time, however, women will be needed only to supply the eggs that are required as the raw material of baby-making. From then on, the laboratory will take over.

How will the pro-life or anti-abortion lobbyists feel about test-tube babies and embryo implantation? Experimentation has already produced perhaps countless 'unsuccessful' fertilizations that have been poured down the drain. A leading Italian exponent of test-tube fertilization was forced, it seems, by pressure from the Vatican to discontinue his research (whereupon he went to the U.S.S.R. and taught his techniques there). If anti-choice activists wish to force adolescents, rape-victims, and carriers of known Down's Syndrome babies to carry their children to term, what will they say about this washing-away of sacred life down the drain? Or, if this life created in the laboratory is not sacred, not human, then are Louise Brown and Alistair Montgomery, both conceived *in vitro*, less deserving of basic human rights and dignity than other children?

Those who oppose free choice on abortion (often the same people who oppose free choice on conception-control) seem to want women to carry their unwanted children to term, whatever the risks, no matter what ideals these reluctant mothers may have concerning the 'religious' notion that a fertilized egg is God-given life. With embryo-transplant techniques perfected, anti-abortion women may finally have a chance to act on their own beliefs without forcing others to act against theirs. If you are anti-choice, rather than see a helpless fetus die, why not have it implanted into your own womb? That is if you feel strongly enough about it. Adopting parents often wish to adopt as early as possible. Why not in the second pre-natal month? But if a fertilized egg has the right to life, where will the population explosion end? And how will older children — say one year old — get adopted?

Yet *in vitro* fertilization and advanced incubation techniques are breakthroughs that were easily foreseen given the 'progress' made by science. Less directly obvious, and perhaps more sinister, are new processes which will adopt these new techniques but which bear no relation to sexual reproduction as we experience it. The most famous of these is cloning, a basic technique for bypassing the need for two partners in the conception of a child.

Human sex cells (sperm and ova) are equipped with only half

the number of chromosomes found in all the other cells of the body. When they unite, they form a single-celled unit called a zygote equipped with the full complement of chromosomes carrying the genes from both parents. All the genetic material for the baby is found at this point in one cell which proceeds to divide and specialize the function of its cells according to its genetic blueprint, thus forming a unique human being. Every cell in the new individual contains the same genetic material that was first found in the original cell from which it descended. In cloning, the nucleus of a body cell (containing the full quota of chromosomes) is placed within an egg-cell whose nucleus has been removed. The egg-cell, finding that its nucleus now has the full count, is tricked or shocked into dividing, and a new individual is created, a 'carbon copy' of its 'parent'. So far, rabbits, carrots and frogs have been cloned, and one writer, David Rorvik, claims that a man has also been created in this way.³

When I first heard about cloning, it did not worry me. In a way it seemed a colossal joke: who would want carbon copies of human beings? Besides, we in the women's movement already know that genes do not account for all a person is and does. Environment plays a large part in the development of human potential. Therefore, I said to a friend, I am not threatened by the possibility of human cloning. It will probably turn out that a cloned Einstein, watched closely all his life for signs of genius, would lead a life of profligate rebellion. The technology itself is morally neutral; in the application it will probably prove fruitless, so why worry?

Yes, my feminist friend replied, and there's nothing wrong with a bomb either, until you drop it. But it's still a bomb.

This worried me. And now, after the Three Mile Island disaster, her argument is even more convincing. What's the point in inventing a bomb and then messing around trying to find 'safe' uses for it afterwards?

What are the proposed applications of cloning? The biology-is-destiny people foresee the duplication of superior people, a master race—the tallest, blondest and malest of us all being first on the list—naturally. Foreseeing the objection that tallness, fairness and masculinity are not the most useful or productive features of the human race, they forestall the objections of humanists with the promise that humanitarians, the Mother Therasas of the world, will be cloned as well. (Doesn't it ease your conscience to think that moral worth can be cloned, not worked at?) The cloning of social revolutionaries is not proposed. However, King Tut is often mentioned as a fascinating possibility.

The sinister side of all this is the *Boys From Brazil* scenario—many little cloned Hitlers waiting to take over the world. (Again, there is the belief that all dictators are unique human types—not that there is a Hitler lurking in all of us, waiting to be aroused.) It is also pointed out that even if we ban cloning, the 'other side' may be cloning elite armies to wipe us out. Aldous Huxley foresaw that a type of cloning might also take place at the other end of the social and intellectual scale. So many repetitive and boring industrial and service jobs would be better performed by retardates, that it might be worthwhile, or even kinder, to produce a race of idiots to perform them. That might solve the problem of Post Office strikes!

If these possibilities seem far-fetched to us, we have only to consider that, in the past, by a technological version of Parkinson's Law, whenever we have developed technological capabilities—from space blankets to neutron bombs—our wants and needs have expanded to produce applications for them. In the case of cloning, many medical uses have been proposed. Suppose we all had a clonal twin made at birth and frozen. Skin grafts and organ transplants from our twin would not suffer rejection. (For-

get how the twin might feel about this.) It might be possible to clone just the required organ, leaving the other body parts vestigial.

In April the Federal Government allotted \$90,000 to the National Research Council to set up a cloning chamber. It is unlikely, however, that we will see human cloning in Ottawa in the next few years. Instead, NRC's Dr. S.A. Narang is attempting to produce synthetic insulin through a process known as 'molecular cloning'. Molecular biologists splice one or more genes into the DNA of bacteria, which then multiply normally, producing the gene over and over again. By introducing insulin genes into bacteria, they hope to develop bacteria that will serve as an insulin factory. Antibiotics may one day be produced this way too. This type of research is hoped to produce a key to the mysteries of cancer, as we discover the mechanisms by which cells change and divide.

Recombinant DNA adds further complexity to the world of molecular biology. In the process known as recombinant DNA, a piece of a DNA molecule from one species is spliced together with DNA from a second species, and then inserted into a host cell such as a bacterium or virus, to reproduce the all-new cell indefinitely. To this point it has not been possible to make the transplanted genetic material take command of the functions of the cell, but the plans for the future seem endless. G.E. has produced a micro-organism that will eat up oil spills. But no one yet knows how to get the genie back into the bottle, or what will happen if it gets loose for good.

Human beings have a wretched ecological record. What will happen if we let loose an organism found nowhere else in nature? Horses and rhododendrons have already been put together in the laboratory as nature never could. What if a newly created strain of bacteria were let loose on the world? So far none of these 'chimeras' has managed to reproduce outside of the laboratory, as it was once feared they might. But what will happen if we deliberately create a new species, let it loose for good reasons, and then find that it has 'unforeseen side-effects'?

Could we ever be justified in crossing human beings with lower primates in order to produce better astronauts? Would we want to engineer human beings who could eat hay or garbage, to solve the food shortage problem — or the garbage problem?

There is a lot of cant surrounding the limits and definition of humanness. Is a one-celled embryo a human being, no matter what its origins? Is a cloned liver, attached to the most vestigial of bodies, human? Is a creature with human brains and sensibilities in the body of an ape a human being? There may be answers to these questions, but we are not likely to get them from the scientific community. Instead, the exponents of recombinant research use terms like 'para humans' for the hybrid creatures so far envisioned. But surely we cannot duck our responsibilities through semantics.

David Rorvik is fond of saying that to exercise the will is to be human. Therefore to will and bring about the new super-species is to be truly human. Surely to will *not* to would be equally human. But (according to his line of thinking) because it *can* be done, the 'Promethean' task *should* be undertaken. His fellow hawk, Joseph Fletcher, believes that laboratory reproduction is more *human*, since it is more 'willed' and controlled than the regular, haphazard variety. We cannot leave all the decisions about the future of our race to people who make their living producing novelties for the scientific world to wonder at. And who are so committed to the rhetoric of the 'triumph of the will'. Nor can we resort to prohibition. Much genetic research is funded by chemical companies and multi-national firms which would sooner move to more convenient locations than abandon profitable research because of laws passed by national governments.

If the Fletchers and Rorviks get their way, we can kiss 'spontaneous mutation' and Darwinian evolution good-bye, since all abnormalities will be screened out of the human race—all, that is, except those induced deliberately for the 'betterment' of a certain section of the population. Frank Appleton of *Canadian Magazine* has said that cloning is a 'woman's world'⁴ since sperm is now the one unnecessary factor in reproduction, and since some women are engaged in genetic research. But no serious writer has ever suggested that the first subject for cloning would be other than a white male of either megalomaniac or philanthropic tendencies.⁵ Whatever else the scientific establishment may be able to concoct, it is rather slow to envision new ways of structuring society— that is the making of truly new worlds.

The brave new world of the microbiologists will simply be a plastic copy of the one we know now. Now we keep ourselves and our children in line, (if we can afford it,) with drugs, prisons, cosmetic surgery, psychiatry, depilatories, bleaches and straighteners. Tomorrow we will do it less haphazardly by altering our genes a little here and there, or having them altered for us. Given the choice of altering our society to suit us, or 'readjusting' ourselves to fit in, we almost always choose the latter — at least until some Prometheus steals fire from heaven to bring us a new bomb or spaceship, or some new plaything like a drug or added whiteners.

What is really depressing about the 'new horizons' in genetics is that we seem unable to work towards anything but a preconceived notion of the ideal human being. The rhetoric of the 'master race' has a distressingly old-fashioned ring to it. Does progress really lie in reducing the human gene pool to a finite number of preselected possibilities? What if the traits we preselect turn out to be incapable of adapting to a climate change or environmental accident over which we have no control? A friend told me about a farmer who had to thin out a line of trees twenty years ago. He cut down all the maples to make more room for the elms. Now, all the elms have died of Dutch Elm Disease and the property is bare of trees altogether.

More politically important is the question: will it be easier in the long run to re-engineer ourselves and our fellow creatures in the eco-sphere, rather than change the social and economic structures that allow so much environmental, social and psychic damage to be done, and so little human potential to be realized? Genetic engineering at its best is geared not towards change but towards the maintenance of the *status quo*. At its worst, it hastens us towards extinction.

Notes

- 1 *Who Should Play God?* (New York: Dell, 1977), p. 9. This book is a very good introduction for the layperson to the technology, vocabulary and issues involved in genetic engineering.
- 2 This is the scenario envisioned by Caryl Richards in 'Genetic Engineers: Now That They've Gone Too Far, Can They Stop?' in *Ms.*, June 1976, pp. 49-51, 112-16.
- 3 *In His Image: The Cloning of a Man* (New York: Pocket Books, 1978). Rorvik claims that a rich white Californian has had himself cloned, using as surrogate mother a non-white seventeen-year-old virgin employed in his business enterprises in an unnamed tropical country (the Philippines?). There are serious reasons to doubt Rorvik's veracity, but the spectacle of his self-delusion, rationalizations and gradual loss of control in this tale of international pimping is terrifying and possibly prophetic, even as fantasy literature.
- 4 'Cloning: It's a Woman's World', *Canadian Magazine*, March 17, 1979, pp. 12-14.
- 5 Even challenging science-fiction writer Pamela Sargent, in the almost utopian *Cloned Lives* (New York: Fawcett, 1976), could not strain verisimilitude to that degree. Woody Allen, too, in *Sleeper* gave us the comic attempt to clone a Big Brother-like dictator. Only Rorvik, in his 'fantasy' showed how soon human cloning could come about.