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No Superbabies and Not Yet Grandpa Culls

AS THE BIRTH CONTROL PILL spread in the 1960s and 1970s, so that sex became 99.99 per cent for fun, some prophets said that science was bound to home in upon the once-or-twice-in-a-lifetime occasion when sex would be for reproduction. Parents would start to engineer superbabies while they lay in their mothers' wombs. The prospect aroused widespread horror, but pessimists said, "Parents will rightly do almost anything to ensure their child is healthy, and society will not be able to draw the line between that and attempts to make the child more intelligent or more strong or more friendly." In fact, attempts to engineer a fetus even to make it more healthy never took off.

By the end of the 1990s a man who was treated for diabetes or sickle-cell anemia by gene-transplantation and transfor-

mation of the relevant body-tissues could be completely cured of his disease. But at that stage he was not able to transmit his acquired immunity to his children, who could still inherit defective genes from him. The techniques available in the 1990s did not permit the reliable and total transformation of the germ cells in the gonads. Even a transformation rate of one in two, though effective enough in restoring the functional capacities of ailing tissues, is inadequate to ensure that a woman whose ovaries are treated will only be able to bear transformed children.

Also, the pattern of incentives had changed. Whereas a man suffering from a genetic deficiency which might kill him was ready enough to demand treatment in spite of hypothetical hazards, he was not nearly so ready to demand that a correction be made in his testes. The balance of probable gain against possible loss looked very different. And by the late 1990s the success of gene-transplantation treatment meant that parents knew that if their children were born genetically deficient, they could nearly always be cured.

At one stage, there was fear that people would nevertheless use gene-transplantation to try to achieve superchildren, either in the womb or by engineering after birth. When various governments imposed rules against this, it was said that ambitious parents would hasten to telecommute from small communes where this engineering was allowed. This did in fact happen to a small extent, tragically for the children born under these circumstances. In communities with changing technology, attitudes and even sports, definitions of "intelligent," "friendly," and "athletic" are changing all the time. But, as a twenty-first-century sage has said:

The qualities that people want least in the modern world are precisely those qualities of stupid arrogance which are most likely to be ordered or implemented by the few stupidly arrogant people who have gone off to superstud communes. Nobody is unemployable in the modern world, if he wants to be employable. But the people who come nearest to being

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unemployable, and yet are most anxious to be employed prestigiously, are the sad products of the superstuds.

The superstuds therefore never boomed, but quickly bust.

The second fear expressed fifty years ago concerned the growth of world population. Up to 1850 the world's population never increased by more than 0.1 per cent a year. In 1850–1950 this rose to 1 per cent a year, and then the great and happy fall in infant mortality strangely made some people very worried indeed. It was said that world population was now inevitably going to expand by 3.5 per cent a year growth and that this would result in mass starvation by some time in the twenty-first century. A conference on world population was called in 1974 which produced a learned World Plan for Action with the aim of bringing world population growth down to 1.7 per cent by 1985. This plan never needed to be put into effect: by 1974, when the plan was written, world population growth was below 1.7 per cent already, and was falling. The scare had already brought its own antidotes into effect.

Some of these were morally controversial. In 1950 no civilized woman had an abortion anywhere; by 1975 any woman could get an abortion before the next weekend in most big cities of the world. Some of the antidotes were technological; the birth control pill appeared because there was a growing demand for it. But the main reason was that women started to want fewer babies, especially in educated lands. A survey in the late 1970s showed that girls who were still in school at the time of first menstruation said that, on average, they wanted to have fewer than 2.1 babies during their lifetimes. And by the late 1980s most girls were in school at first menstruation, even in poor countries. The significance of 2.1 is that, if the average woman intends to have fewer babies than that, then world population eventually goes down. "Eventually" means "after quite a time." There was still due to be a rise in world population from 1980's 4.25 billion to over 8 billion in 2024 as the babies saved by the drop in infant mortality in 1950–85 passed through childbearing years. And before 1980 new fears

arose that population could soar again if people suddenly started living much longer.

This latter fear started the second great world population scare.

Some time in the next two decades [*wrote a prophet in the late 1970s*] some damn fool of a doctor is going to make a breakthrough in curing one or more of the great degenerative diseases. We will then all start living longer, just when the breakdown in three-generational families means that Grandma no longer lives with the grandchildren, just when we have passed the financing of old-age pensions on to governments which in an age of inflation will no longer be able to afford them, especially as longevity increases. It will be necessary to move to euthanasia as fully as we have moved to abortion. Inflation-proof index-linked pensions will soon have to be limited to fixed-term ones, to agreed-date-of-death contracts with a hell of a going-away party on the eve of your ninety-fifth birthday.

This second great population scare has so far proved as bogus as the first one. One reason for this is that we have made a total change in our lifestyles at different ages; with the young going into paid work sooner, the middle-aged learning to play more, and the old studying and working more, especially as telecommuting makes work much less arduous. But another reason is that the improvement in health has taken a rather surprising form. Thanks partly to the spread of HMOs in poor countries, we have reached a stage where very few people die prematurely. Far more people reach the age of three-score-years-and-ten than would have seemed conceivable to an Indian in 1950. But once you have reached about seventy-five, your life expectation after that is not very different from what it has been for thousands of years.

This situation may be about to change, however, and bring some problems with it.

There is no reason, in principle, why we should not find a way to slow the ageing process. Since single-celled organisms

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can divide and redivide *ad infinitum* without suffering progressive degeneration, we may some day manage to make the cells in our bodies do the same, so that the tissues constantly renew themselves and never wear out. Since 1980 we have discovered several aspects of the ageing process—different patterns of biochemical deterioration which probably should require us to speak of “ageing processes,” in the plural. As our DNA molecules replicate themselves and make the RNA (which makes functional proteins), some random copying errors occur. In consequence we accumulate a gradually increasing dead weight of defective molecules produced transiently within cells as a part of normal metabolism. Other molecules, which make up the permanent structures of the body, are affected by molecular cross-linkages.

All these processes are acting simultaneously, with each pattern of deterioration reaching the point of breakdown at more or less the same point in time. So a treatment to counter any one of them in isolation would not have much effect on longevity. In order to extend man’s lifespan considerably, all the kinds of wear and tear will need to be tackled at once.

It is easy to see why, given all this, there is no simple elixir of life. Rejuvenation of the tissues of the body is a difficult and delicate business. If and when a treatment for old age does become possible, it is unlikely to be a simple matter of taking pills or having injections. It may be very difficult and time-consuming to administer, and therefore probably costly. That raises problems which have been avoided in the surprisingly egalitarian health revolution of the past fifty years. The discovery of an expensive elixir of life could provoke envy and strife on a scale not previously seen. The poor have always had their mortality in common with the rich, and have taken solace in that fact. Once some men have access to the reward of indefinitely protracted youth, can we expect a 1789 after all? Another bizarre problem is that anti-ageing treatment might need genetic transformations so general that they require the treatment of early embryos rather than mature individuals. That could cause quite a generation gap.

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In spite of all these caveats, it is probable that a practical method of adding decades to our present measure of youth and virility will be discovered in the twenty-first century. Longevity is something we may legitimately hope for on behalf of our children. Immortality will take a little longer.

It would be pusillanimous to conclude that the people of the world will not be able to cope with the problems this brings. Throughout history people have been anxious about their ability to adapt to the changes brought about in the world by their own efforts and discoveries. Experience has shown us time and again that what has been lacking is self-confidence. No good has ever come of the attempt to declare a moratorium on change; it has never been satisfying, and has rarely been successful in any but the shortest term. Discoveries cannot be unmade. Power cannot be obliterated; whenever an individual or a group surrenders it, it simply passes into other hands. There is no alternative but to take responsibility for the power which our knowledge can give us, and use it as wisely as we can.

The biological revolution has put the future of mankind into the hands of men. Human nature itself is now subject to human dominion. We can amend the inheritance that is in our genes, and are no longer imprisoned by our evolutionary heritage. Our escape is not yet total, but there is every reason to expect that freedom will eventually be ours for the taking. How we will use that freedom remains to be seen.