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REDESIGNING HUMANS
Our Inevitable Genetic Future.

By Gregory Stock.

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‘Redesigning Humans’: Taking Charge of Our Own Heredity

By GINA MARANTO

Gregory Stock has written an enthusiastic book in support of germ-line manipulations -- that is, making genetic modifications to eggs, sperm and embryos that can be passed on to future generations. Like previous explorations of the subject by the ethicist Joseph F. Fletcher, the lawyer John Robertson and the biologist James Watson, among others, "Redesigning Humans: Our Inevitable Genetic Future" serves as an apologia for those scientists and physicians who are already edging toward such work in a piecemeal fashion in research labs and in vitro fertilization clinics around the world. It advocates the wholesale adoption of genetic manipulations with the purpose of finally taking control of human evolution. This, the author writes, "is the ultimate expression and realization of our humanity."

Because of the breadth of his scientific knowledge and his considerable flair as a writer, Stock -- who heads the program on medicine, technology and society at the School of Medicine of the University of California, Los Angeles -- is a forceful advocate. First and foremost, he says, such manipulations are inevitable -- an assertion he makes not only in his subtitle but repeatedly throughout his book. Stock may be correct, for many factors are driving genetic experimentation forward, including professional ambition, greed and the desperation of infertile couples who will submit to just about anything in order to have a child.

And it should be added that eugenic considerations have already entered into this enterprise (even though Stock states at one point that in the infertility field, no one "cares about such wild notions as human redesign"). Numerous practitioners of in vitro fertilization, starting with Robert Edwards of Baby Louise Brown fame, have discussed their goals for "improving" the species. Meanwhile, would-be parents readily buy into schemes to improve birth outcomes -- as they have done at least since the days of ancient Greece.

But to argue the inevitability of all this is to sidestep the paramount issue, which is how to balance the desires of researchers and of the potential consumers of laboratory technologies against the good of society. After all, scientists, when asked, will nearly always say that they would like to get on with their work unhampered by any sort of regulation.

However, unfettered science has not historically shown itself to be in the best interest of society, any more than unfettered government, religion or business have. The fact that biomedical tinkering has brought benefits for some does not constitute a sufficient reason for concluding that the practitioners of the embryonic arts should have the right to pursue any and all lines of experiment. Nor is it an adequate argument to say that if banned, germ-line manipulations would simply move offshore or go to the black market. That may be true. But if the fact that people will seek to avoid the law were a reason not to have a law, we would have no laws at all.

Stock's overarching claim is that germ-line modifications will "write a new page in the history of life, allowing us to seize control of our evolutionary future," an echo of the classic eugenicist dream. New

technologies will allow humans to make fundamental alterations to their individual genetic compositions and those of their children. The net effect, he says, will be to draw "reproduction into a highly selective social process that is far more rapid and effective at spreading successful genes than traditional sexual competition and mate selection." In the future, he claims, we will be "much more than simply human."

But Stock's assumptions regarding population biology and evolution are suspect. For example, he assures us that we needn't worry about any impact that germ-line alterations might have on the gene pool (like reducing genetic diversity) because the number of altered children would be quite small. But if the net effect of all those laboratory-engineered births is so negligible, how then can there be the major evolutionary changes he predicts? Moreover, while it is clearly possible to affect the genetic circumstances of small, reproductively isolated populations, most population geneticists would agree that the goal of bringing about substantial changes in a pool of six billion humans (and growing) is near to impossible, especially any time soon.

So the great collective enterprise Stock envisions will in all likelihood be limited only to the small percentage of people who can afford or gain access to these technologies. And then the issue becomes what these übermenschen might do with the rest of us.

Stock frequently acknowledges problems with a particular line of experimentation, or impediments in the way of some of his predictions. But in each case, once he is done listing objections, he proceeds to a bold proclamation that effectively moots them all.

Nor do moral and ethical concerns slow him down for long. He declares, "If biological manipulation is indeed a slippery slope, then we are already sliding down that slope now and may as well enjoy the ride." The lesson he takes from history is that eugenics itself wasn't wrongheaded, just the nationalistic, totalitarian applications of it. "Given Hitler's appalling foray into racial purification," he writes, "European sensitivities are understandable, but they miss the bigger picture."

For Stock, this bigger picture is clear. The future is a time in which individuals will be able to go into a clinic and, through a simple procedure, obtain embryos fitted with chromosomal modules that will slow aging, eliminate disease and enhance personality, temperament, intellect and beauty. It's a pleasant enough fantasy. But even if evolution could be steered in a positive direction, why presume that humans have the wisdom to do so? "Redesigning Humans" is an act of both boosterism and reductionism. It admits but then ignores the enormous complexity of biological systems; it places biology firmly above social, ecological and economic considerations; and it reduces concepts like success in life to the purely physical, as if health and longevity were the only issues that mattered. Isn't it pretty to think so?

Gina Maranto is the author of "Quest for Perfection: The Drive to Breed Better Human Beings."