Redesigning Humans: Our Inevitable Genetic Future

Gregory Stock
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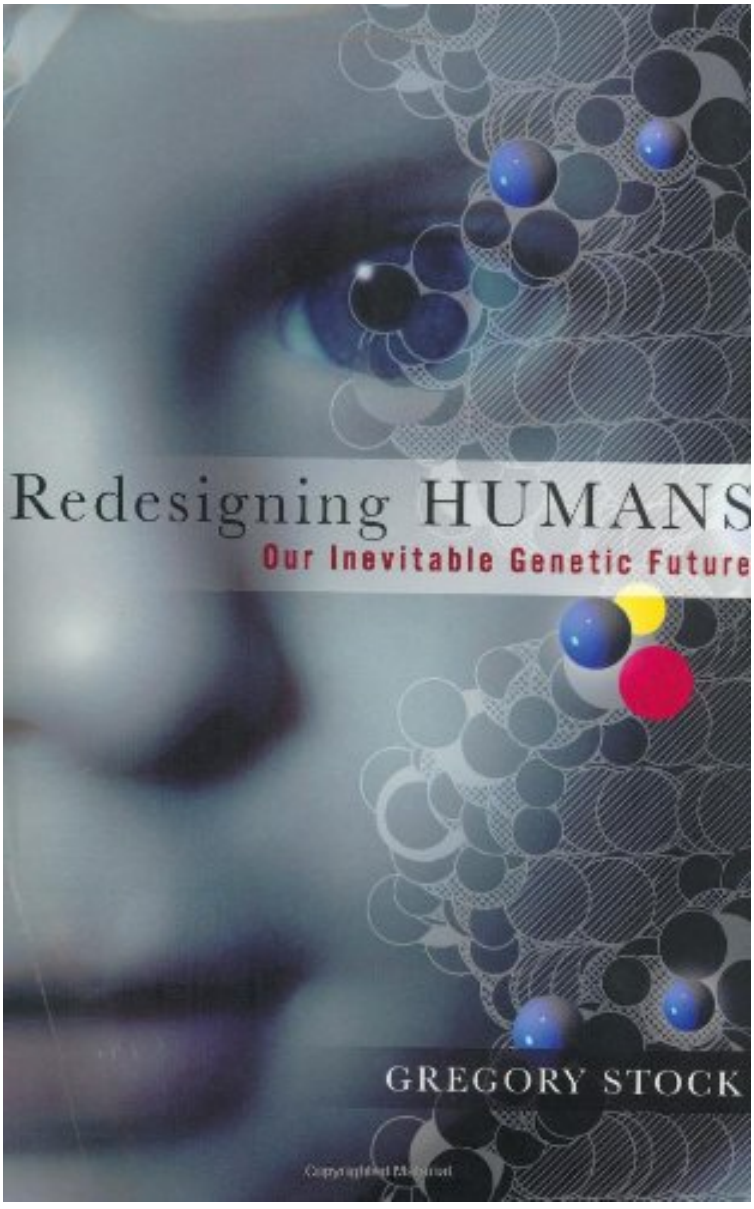

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Gregory Stock : Redesigning Humans: Our Inevitable Genetic Future before purchasing it in order to gage whether or not it would be worth my time, and all praised Redesigning Humans: Our Inevitable Genetic Future:

1 of 1 people found the following review helpful. Excellent Forecast into the near future of genetic engineering and its impact on humanityBy YodaThe author, Director of the Program on Medicine, Technology and Society at the School of Medicine at UCLA, makes a number of predictions regarding genetic engineering and humanity that he believes

will be coming true in the near future. One is that genetic engineering will become commonplace and inevitable once technical obstacles are overcome. He posited that the technical obstacles permitting genetic engineering on humans will be overcome "within a decade" of the book's publication date, 1992. This obviously has not happen. The Human Genome has barely been mapped within this time, never mind being used for purposes of advanced genetic engineering. However, advances continue being made and the author, although being optimistic about the time frame is probably not too far off the mark. It does seem likely that many of the advances he predicts will occur within the next 20 or so years.Why does the author believe the "inevitability" of genetic engineering being commonly utilized? A number of reasons. One is involves the zero sum game that participants will find themselves in once the genie of the technology escapes from the bottle. If prospective parents know that others can make such modifications to their children or themselves, they will have no choice but to do so in order to be competitive. Not doing so will mean falling behind in terms of career, health, etc. Secondly, once the demand for such services starts up, market competition in the medical field will make it impossible for any government to make the practice illegal. To do so will simply force prospective patients to seek such services outside the country they have been banned in.The author makes the case that the application of such technology will have many positive benefits such as longer life spans, less genetic ailments and diseases being passed on and, most importantly, "improved" human beings (i.e., more intelligent, less resilient to disease, more athletic, better looking, etc.). Many of these changes, in the long run and in by a slow and evolutionary manner, can bring about significant changes in humanity itself. In the course of a few centuries humans may become almost unrecognizable in terms of functionality (as opposed to physical appearance). For example they may have cat like vision and bat like hearing.However, and where the book is quite weak, the author only superficially covers the weaknesses of applying such techniques in the real world. Out of the book's approximately 200 pages, he does not spend more than 3 or 4 covering the dangers and risks. A chapter should have been devoted instead. Dangers include, that are either barely covered or not covered at all, unintended "nuclear arms like warfare" among genetic customers and genetic engineers as well as genetic defects that may be detected only two late. An example of the first involves parents desiring taller than average sons. As height is relative, over many generations as a result of genetic engineering humans can increase in size. This increase can bring about problems that are unintended such as increased weight, inadequate bone density or inadequate muscle volume. Another example may include, assuming that the brain as an organ having a shorter life span than most other human organs, human bodies living beyond the brain's lifespan.Examples of defects that may only be detected to late may include the introduction of some genetic default in the genetic engineering process that may render humans vulnerable to some disease (currently known or unknown). It may also include other defects that will only be known after it is too late to take preventative action (i.e., body parts that have been genetically designed but have only a very limited life span and may cease properly functioning without warning).Despite weaknesses author, eminently qualified, makes his case well. After reading the book the reader comes away agreeing that, sooner or later, genetic engineering will come and with it will come many benefits as well as potential dangers.41 of 43 people found the following review helpful. A breath of fresh airBy Dr. Lee D. CarlsonGenetic engineering of humans: we can do it; we should do it; and we will do it. The author of this book is one of tbe best apologists for genetic engineering alive today, and this book is a fine example of his sound argumentation and comoon sense. He is unashamed of his position, delightfully unabashed, and one gets the impression while reading the book that he is very excited to be alive and be witness to the incredible advances in genetic engineering now taking place. Those who support the genetic engineering of humans should read the book, along with those that don't. As of this date, human cloning is being debated not only in the United States but all over the world, and a cloned embryo is now gestating inside of a woman somewhere in the world. This is indeed an exciting development, but the author says that the fuss over human cloning is unwarranted, but for different reasons than those opposed to it. Copying a human being is insignificant, he argues, compared to what can be done with engineering the human germline. The focus should be, the author argues, on how we are to proceed with this technology, a technology that he clearly supports. He is one of the few that does, oddly, out of the collection who themselves are responsible for the major advances in genetic engineering. But what of other ways of engineering improvements to human beings? Artificial intelligence and robotics have shown every indication of finally taking off, after decades of promises to that effect. Will humans, already inserting pacemakers, computer chips, and othe devices into their bodies, use this technology to enhance their vision, auditory capabilities, intelligence, etc? Who needs germline modification when this type of technology is available for enhancing human performance? The author argues that this will not be the case, that the human biological organism is too complex for this to happen. Also, the current level of knowledge on biological/electronic interaction is too primitive for such things as direct brain linkage. In addition, human beings will be reluctant to allow surgical implants such as these to be inserted into their brains. Although his arguments against the occurence of electronic enhancement are good, the author, with his advocacy of germline enhancement, may be expressing a worry that artificial intelligence and cyberelectronics may "win out" over biological approaches to human enhancement. Will there be competition between biotechnology and cybertronic technology for the enhancement of human capabilities in the decades ahead? A silicon-vs-carbon-race for this purpose could prove to be a very interesting one. The author is very honest and very frank is his discussions in the book, and such honesty is greatly appreciated in this time where

genetic engineering is a frightening possibility to some. This omission of "tact and prudence" in discussions of genetic engineering serves better the purposes of rational debate and eases suspicions on the use of germline enhancement. The accelerating field of bioninformatics and its role in germline manipulation is emphasized many times by the author. Faster computers, cheaper DNA chips, and sophisticated sequence matching algorithms will increase the enticement to perform reliable and safe genetic engineering. One can extend the author's logic to future scenarios where each individual's genome will be sequenced and digitized in a database. Combinatorial mathematics will then allow a pair of humans to determine with confidence the genetic make-up of their offspring. Subjective preferences of the parents, always a factor in the selection of mates, and this translating of course into their children, will become much more sophisticated using 21st century genetic engineering. The freedom to choose is the basic premise and right here, its results will just occur at a faster time scale than evolution has done. The author is also an advocate of the free market when it comes to the inevitable choices involved in genetic engineering of humans. Considerations of cost and practicality will determine the prevelance of use of genetic technologies. What can be corrected by simple technology will eliminate the need for genetic engineering to do the same. A pair of glasses to correct for nearsightedness is a simpler and more economical approach than germline enhancement for better vision in our future children. The author has successfully countered the current most popular arguments against genetic engineering in this book. He has done it with fairness and confidence, and with a command of the ethical and scientific issues involved. It remains to be seen of course whether wide-scale genetic engineering of humans will indeed occur in the next decades. One can say with confidence that it will occur in at least a few cases. But one thing is certain: this is indeed an exciting time to be alive, that the contemplation of the technology of genetic engineering is exhilirating, and its actual use even more so.....23 of 23 people found the following review helpful. Preparing for the Next Addition to the Culture Wars!By Kevin Currie-KnightAs E.O Wilson notes in his blurb for the back cover of this book, it is amazing how few philosophers are really willing to pay attention to and write about genetic engineering. Especially in light of Stock's thesis: Genetic engineering, like it or not, is comming, ready or not.Honestly, I thought that Stock's book would be one of the few to really provide moral arguments for genetic engineering, particularly 'extratherapeutic' engineering. While there is a little of that, the book devotes much more time to exploring the inefficacy (in a utilitarian sense) of government regulations and bans on therapy. In that sense, his book is not quite a moral response to ethical luddites like Kass and McKibben, but governmental luddites like Fukuyama.Without spoiling the book for you, I will summarize some of his reasons (so you get the flavor: 1.) like abortion, there is simply too much demand for such therapies (and those that don't believe this should look at how much we spend on 'anti-aging' pills and surgeries). Thus, there is too much incentive for consumers to form black markets should bans be in place. 2.) Due to the plurality of world politics, such bans are, at best, regional. While Germany might ban research, China surely will not. 3.) Like abortion and drugs, black markets will be more dangerous that publically visible and monitorible legal ones. 4.) Bans or strict controls are going to cost astronomical amounts of money (and privacy) to prevent and catch law-breakers.There. I've only given you a taste, and if any of those arguments sound frail, read the book. The elaborations are first rate! This brings me to two small complaints.First, Stock tends to get ahead of himself in that the first half of the book is filled with sweeping proclomations like, "In the future we might be able to do x. Even though most scientists don't believe me on the feasibility on x, I really do think it could happen." In other words, he makes strangely radical predictions, reminds you that they are stragely radical predictions and simply defends them by saing that anything is possible.Second, Stock will occasionally come off as a will-o-the-wisp cheerleader. Particularly when he addresses concerns about the efficacy of unregulated markets, Stock simply tells us that we need not worry and that markets have taken care of themselves in the past, therefore they will work in the present. While I believe him (being the libertarian that I am), too many people i know share a scepticism of the market for Stock to dismiss the argument so curtly (assuming he wants to convince anyone). Other examples of this will-o-the-wisp style are in the book (though not enough to get annoying).To conclude, as this book has much more to do with cost/benefit analysis of regulation (that more or less winds up in favor of free markets) rather than ethical philosophy, the book will be much more interesting to political thinkers than bioethicists or philosophers. In fact, I would suggest reading this book and Fukuyama's "Our Posthuman Future" together as they take the same questions (where to regulate biotech) and come to different conclusions.

Forget worries about cloning people. In the future, technological advances will bring far more meaningful and controversial changes to our offspring, says Gregory Stock. As scientists rapidly improve their ability to identify and manipulate genes, people will want to protect their future children from diseases, help them live longer, and even influence their looks and their abilities. Stock, an expert on the implications of recent advances in reproductive biology, clearly shows that neither governments nor religious groups will be able to stop the coming trend of choosing an embryo's genes.

.com Will the genetic research that gave us the Flavr Savr tomato also give us the power to customize our children? Medical thinker Gregory Stock believes that this is precisely what's happening and that we'd better get used to it fast. Redesigning Humans: Our Inevitable Genetic Future explores gender selection, gene therapy, germinal choice, and

many more options available now or in the near future, but lays aside the hysteria common to such discussions.Stock sees the cloning controversy as a distraction from issues of real importance, such as balancing offspring trait selection against eugenics. Writing with the clarity and precision of a philosopher, Stock engages his readers with thought exercises and real-life examples. While not a brainless cheerleader for big science, he believes that we can, and certainly will, use any means necessary to give our children an edge, even if it means profound changes for our species. Redesigning Humans offers the hope that these changes need not be catastrophic if we pay attention now. --Rob LightnerFrom Publishers WeeklyRather than worry about the ethics of human cloning, Stock (Metaman; The Book of Questions), director of the UCLA School of Medicine's Program of Medicine, Technology and Society, believes we should focus our attention on the idea that we'll soon be able to genetically manipulate embryos to develop desired traits a more immediate and enticing possibility for most parents than cloning. He gives a lucid overview of the new biotechnology that will allow scientists to delay aging and to insert genes that enhance physical and cognitive performance, combat disease or improve looks into embryos. Stock thoughtfully weighs the ethical dilemmas such advances present, arguing that the real threat is not frivolous abuse of technology but the fact that we don't know the long-term effects of these genetic changes. In any case, Stock insists, there's no turning back, and government bans "will determine not whether the technologies will be available, but where, who profits from them, who shapes their development, and which parents have early access to them." Stock demonstrates that much of the current criticism of human genetic engineering sounds remarkably similar to what was being said about in vitro fertilization when it first appeared. He believes that we will come to accept laboratory conception of all offspring and the addition of artificial chromosomes stocked with designer genes as readily as we have come to accept in vitro fertilization. Along the way we are sure to have many ethical issues to confront, issues that Stock does an impressive job of outlining. Copyright 2002 Cahners Business Information, Inc. "REDESIGNING HUMANS's advocacy of DNA-improved human destinies reveals the compassionate side of science." --James D. Watson"Gregory Stock's intellectual brilliance has brought us a wonderful book that is fascinating to read and that everyone needs. And his style is fluent and attractive. Whether or not you share his vision of the future, this book will enthrall you." --Sherwin B. Nuland, author of LEONARDO DA VINCI and HOW WE DIE"Even though the prospect of altering human heredity is a subject of enormous scientific and ethical importance, and looms as a near-horizon prospect, it has been under-emphasized in research and largely neglected by public philosophers. Stock provides us with a clearly written and balanced briefing that deserves special attention." --Edward O. Wilson"Gregory Stock has the imagination, courage, and scientific vision to look our future square in the face. This is the most important book ever written about what we could do to make better people. I could not put this book down because it challenged everything I thought I knew about human nature." --Glenn McGee, author of THE PERFECT BABY"Whether or not you agree with Stock's provocative vision of the human future, you will come away with a deepened understanding of the immense challenges ahead." --Alvin Toffler"A breath of fresh air to fuel the debate now raging in Congress and the White House..." Kirkus s"Stock...explains the technologies of cloning, embryo selection and genetic modification, making clear what seems possible in the near future..." --Rebecca Skloot The Chicago Tribune"Stock...writes with a clear, lucid style..." --Robert Winston Nature"...compelling reading, fascinating and frightening at the same time." --Fred Bortz Dallas Morning News"Stock...gives a lucid overview of the new biotechnology...[and] thoughtfully weighs the ethical dilemmas such advances present...impressive." Publishers Weekly