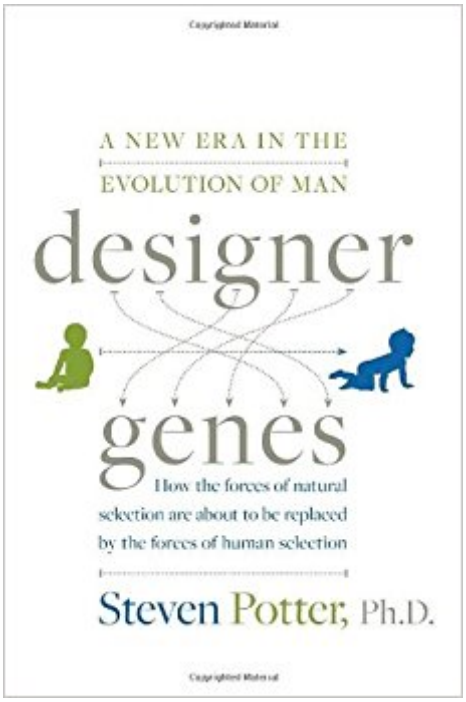
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Designer Genes: A New Era In The Evolution Of Man



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Synopsis

This compelling new book covers the most important revolution since DarwinÃ¢â ¬â •how cutting-edge genetic science will soon allow us to speed up and transform our own evolution, and the moral choices we must make as we improve, alter, and even duplicate ourselves. The fact is that, until now, human evolution has been exceedingly slow. But thereÃ¢â ¬â„¢s about to be a profound change in this process, with a perfect storm of revolutions in the fields of genetic modification, stem cells, DNA sequencing, and embryo manipulation. The result is that it will soon be possible for parents to consciously choose the genes of their children, defining their intelligence, appearance, athletic ability, and health. The ramifications could be enormous, with each generation smarter, more technologically proficient, and better able to design the genes of their offspring. Where will this evolution on steroids take us?Designer Genes presents a balanced view, describing the underlying science in accessible terms and discussing the pros and cons of implementing this new technology. A leading expert in the field, Steven Potter covers a broad range of topics on this challenging subject, presenting fascinating details of case histories and ongoing discoveries:Ã Â Ã Â Ã¢â ¬Â¢ the true story of Ã¢â ¬Å“Adam,Ã¢â ¬Â• who as an early embryo was genetically selected to save his sickly sisterÃ¢â ¬Â¢ the surprising human genomeÃ¢â ¬â •and DNA sequence comparisons across species Ã¢â ¬Â¢ dogs, an informative example of human-driven evolution Ã¢â ¬Â¢ the sequencing revolution, with the price of determining a personÃ¢â ¬â„¢s complete DNA sequence becoming much more affordableÃ¢â ¬Â¢ genetic diseases and what is being discovered about them every day Ã¢â ¬Â¢ stem cells and their almost magical powersÃ Â Designer Genes also investigates such controversial questions as: When is an embryo a person? Are we smart enough to pick optimal gene combinations? What will the governmentÃ¢â ¬â„¢s role be? Science has brought us an astonishing understanding of the genetic basis of life, as well as potent new power to guide the genetic destiny of humanity. What will we do next?

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Customer Reviews

Despite the thinness of this book, Potter, professor of pediatrics at Children's Hospital Medical Center in Cincinnati, Ohio, is comfortable making a sweeping conclusion: that we are quickly reaching the point where our ability to manipulate genes "could well mean the end of the human race as we know it, but perhaps the beginning of something better." Unfortunately, he doesn't provide nearly enough substance in this short primer to permit such a momentous conclusion. Potter simply offers very basic information about genetics, such as the structure of chromosomes, as well as a cursory overview of in vitro fertilization techniques and gene screening and selection. He writes as if genes alone were responsible for human behavior, with the environment playing no role. His chapter on athletics assumes that practice and perseverance matter not a whit. On the ethical front, he addresses the question of using embryos for research, but he deals superficially with these complex topics, and his discussion of when embryos gain a soul is awkward. Although the science needed to accomplish most of what Potter foresees has yet to arrive, his optimism knows no limits: "Any problems that arise will be overcome in time." 4 b&w illus. Copyright Ã Â© Reed Business Information, a division of Reed Elsevier Inc. All rights reserved.

Potter brings a scholarÃ¢â ¬â„¢s nuanced view to the prickly subject of what designer genes are and how they fit into our world. From a poignant opening about a pregnancy conceived to save a dying sibling to an in-depth discussion of DNA, RNA, and how genes can even be designed, he carefully articulates the significance of science over politics, focusing more on genetic disease and less on, say, conceiving a blue-eyed child. But while he addresses HuntingtonÃ¢â ¬â„¢s disease and the power of stem cells, he also weighs concerns about when human life begins, even broaching the potential of an embryonic soul. General readers will find the ethical discussions more readily comprehended than the complex science, but Potter makes clear that understanding what genetic research entails as well as the bioethics involved is necessary for participating in public discourse and politics. Therefore, PotterÃ¢â ¬â„¢s thorough approach is to be lauded, and recommended to readers curious about this important subject, and those more urgently seeking

their own genetic answers. --Colleen Mondor

It is a useful informative book. Regardless on whether or not you agree with Dr. Potter on the subject of Eugenics, the time has arrived for us to grapple with the issues.

Up to date and fascinating description of how fast genetics is moving. StevenPotter knows his stuff. I wasn't all that interessted in genetics before I read the book. Now I look forward to learning more about it.

Sometimes potent things come in small packages. In this short book of 175 pages, Steven Potter takes us through the fields of DNA sequencing, genetic modification, stem cells and embryo manipulation. We have seen numerous books come out in recent times on these subjects, but this tome differs from them through its simplicity, lucidity and clarity of vision.Steven Potter shows us why it would be impossible to stop human beings from changing their genetic code - initially it would be to cure diseases and then to prevent them - but sooner or later to improve it. The ethical and moral dilemma involved in these are discussed in a very balanced manner and it would be highly beneficial if our politicians and so called leaders spend some time in understanding the basic science behind the issues, through reading books like these.Towards the end of the book, Dr.Potter springs a surprise by a Kurzweilic play of hypothesizing the potential of smarter than human machines and how humans might be forced to make themselves better (quite drastically by changing their genes) to stay ahead of the machines.This is a an interesting and thought provoking book and a very easy read.

Everyone has some genes with inactivating mutations, but since we have two copies of every gene and since for most genes we only need one good copy, this isn't usually a major problem. Humans have an estimated less than 30,000 genes, vs. 14,000 for the fruit fly. Human genes vary from one person to another about .1%, humans vs. other animals about 1%.It is now possible to sequence a person's DNA in 1 week for less than $10,000. The original Human Genome Project took 13 years, and cost $4 billion. The 1000 Genomes Project began 1/08, and covers 8 billion bases/day, covering 6 trillion for a total of $40 million. The goal is to ID multigenic and single gene contributions to disease. DNA sequences of any two individuals creates about 3 million base differences, mostly 'noise.'IQ is about 70-80% determined by genes.One can purchase enzymes used to cut DNA at specific places, and others for pasting DNA pieces together. It is very inefficient - only works for

about 1 cell in a million. Start by tagging a modified gene with antibiotic-resistance gene, then grow it in the presence of the antibiotic to kill the stem cells without the new DNA. About 90-95% of the modification takes place in the wrong location, requiring repetitive growing, manual selection to create an engineered baby. Skin cells can now be used as stem cells.It would be great if "Designer Genes" covered more of the difficulties in genetic engineering, and did it in simpler terms. Also the advances made by Chinese researchers in speeding up the processing. Also, they are now analyzing genomes for $1,000 at BGI ("The $1,000 Genome," by Kevin Davies).

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