Merchants of Immortality: Chasing the Dream of Human Life Extension

Stephen S. Hall
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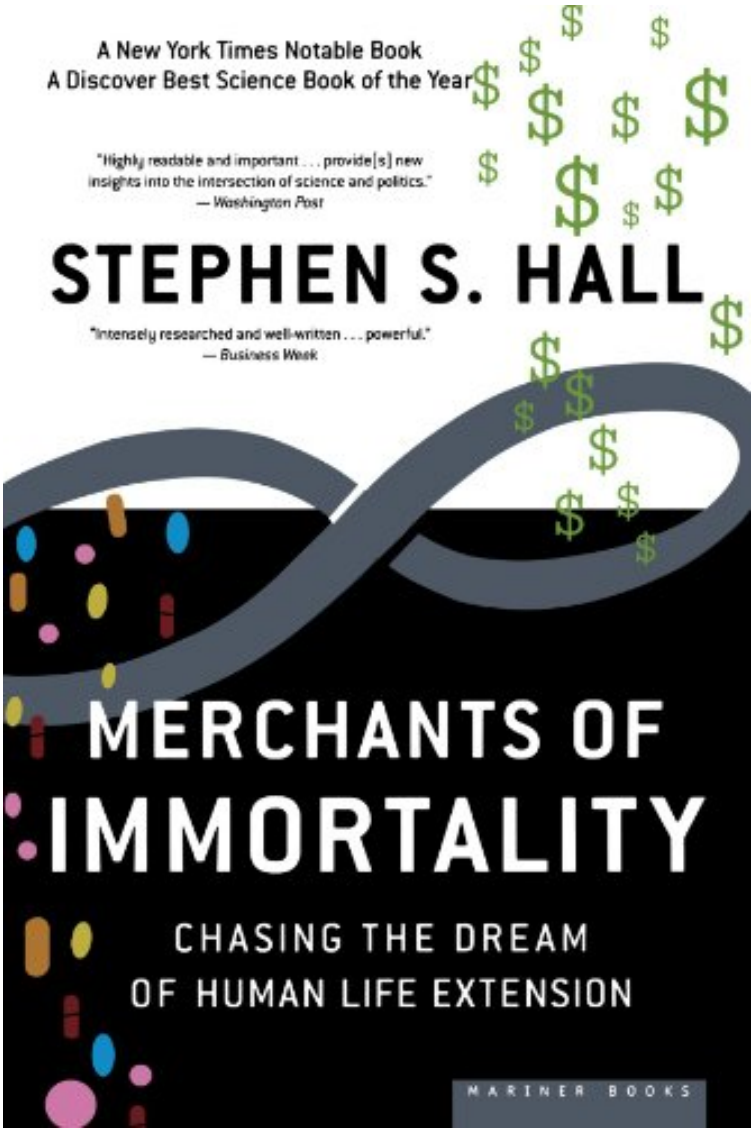

#2272020 in Books Stephen S Hall 2005-01-20 2005-01-20Original language:EnglishPDF # 1 9.00 x 1.13 x 6.00l, 1.50 #File Name: 0618492216440 pagesMerchants of Immortality Chasing the Dream of Human Life Extension | File size: 64.Mb

Stephen S. Hall : Merchants of Immortality: Chasing the Dream of Human Life Extension before purchasing it in order to gage whether or not it would be worth my time, and all praised Merchants of Immortality: Chasing the Dream of Human Life Extension:

23 of 25 people found the following review helpful. Meet the masters of biohope and biohypeBy Royce E.

Buehler(**** 1/2)Stephen Hall has chosen a title that represents his book very well. What he sets forth, in supple, thoughtful, smoothly readable prose, is the saga of recent advances in "life extension" - both longevity research and research into the healing and regeneration of tissues with the aid of stem cells. As his title suggests, the emphasis is on the scientists involved, and on the public face of that science.Along the way, he clarifies a good deal of the science itself: the discovery of the Hayflick limit, the finite limit to the number of times a normal cell can divide; the connection of that limit to the telomeres, the shoelace-tips on the ends of chromosomes; the chimerical enzyme telomerase, two parts protein and one part RNA, which repairs the telomeres and helps make cancer cells immortal; the sir-1 gene and its congeners which can double or sextuple your lifespan, if you happen to be a roundworm. And so on. Little of this will be news to those laymen who follow the science pages closely, but even for us it's good to have the timeline neatly laid out.The bulk of Hall's attention, though, goes to the rivalries between laboratories to be first to publish and patent each of these breakthroughs; to the lineages of the biotech startups bankrolling the races; to the contrast between the solid if limited gains made by the biologists and the fairy dust sprinkled on investors; and to the enormous ferment surrounding all these new technologies as they began to impinge on embryonic stem cells and thereapeutic cloning.Wandering through the scene from chapter to chapter, popping up repeatedly whenever the action gets hot, is the energetic true believer Michael West, the ousted founder of the premiere telomere outfit Geron, and the leading light of Advanced Cell Technology, which set the country on its ear two years ago with a premature announcement that it had cloned a human embryo. In his infectious zeal for abolishing the tyranny of old age, West serves not only as a central figure in the unfolding commercial and political saga, but as a stand-in for the insistent voice in all of us, whispering that all men may be mortal, but hey, maybe *you* can beat the rap.Hall's conclusion, offered with a full appreciation of the fact that "It's hard to predict things, especially the future," is that a dramatic cure for aging is not likely to be in the cards. Just as cancer turned out to be a whole class of diseases with a host of different causes, so aging is turning out to be more complex than the discipline's pioneers imagined. What we can reasonably expect is a steady advancement of the average life span over the coming century, by another decade or two. How long we have to wait for breakthroughs in tissue regeneration in particular will likely depend less on science than on politics.Two intriguing lines of lifespan research, the one tracking the sir family of genes, and the one investigating the effects of free radicals, are not ignored but, perhaps because they haven't caught the public fancy sharply, get relatively short shrift. Less than halfway through the book, the spotlight shifts from the study of aging to the study of stem cells. Because the U.S. for the last quarter century has enjoyed an effective moratorium on experimentation with aborted fetuses or discarded IVC embryos, American scientists' attention has focused more and more on the other theoretical way of obtaining human embryos: inserting the nucleus of an adult cell into an enucleated human egg.If anyone were to succeed in doing that, and coaxing the result to divide until it reached the blastocyst stage - that would be "therapeutic cloning." So far, no one's done it, or at any rate no one who's done it has felt like advertising it. In a political squaring of the circle, President Bush managed to permit NIH to fund limited therapeutic cloning in a way that ended up outlawing funding in practical terms. As a result, scientists in the field face the classic NRA nightmare: when federal stem cells are outlawed, only maverick venture capitalists will have stem cells. At press time, no one knows what's really happening, what kind of ethical oversight private companies are bothering to put in place, or how restricted access to resulting medical breakthroughs will be when it's all proprietary, with no NIH ownership at all. For the moment, the U.S. is stuck with the worst of the "pro-life" and the "mad scientist" worlds, while the rest of the world does its research in the sunlight and steals a technical march on us.All the players on both sides of that circle-squaring, and the principal shakers, movers and move-blockers in the relevant research, are profiled here, some in full screen 3-d and some in fetching thumbnails. The field is unlikely to be surveyed by a more complete or more even handed chronicler for some while.6 of 6 people found the following review helpful. A fascinating surveyBy Robert J. SawyerHall is a fabulous writer, given to wonderful turns of phrase. He's also a meticulous researcher -- the "Notes" section of the book is gigantic, citing sources for even the most off-hand of remarks.This is really two books in one It begins discussing Leonard Hayflick and the discovery of programmed cell death, and the resulting search for the telomerase enzyme, then it takes a pretty sharp right turn into being a book about stem-cell research. Although some of the players are the same, they're really two different stories.Hall's conclusion is that no rolling back of the clock is likely, and that "immortality," or even profound life extension, is probably not in the cards. But it's a fascinating journey nonetheless, and well worth reading.4 of 7 people found the following review helpful. Revolution in ProgressBy Donald B. SianoSo, when will stem cells come into widespread medical use? If you answer twenty years from now, you'd be wrong by about 60 years--they first became widely used in the 1960's! Only they were called "bone marrow transplants." Today thousands of them are done every year.Hall has written a dozen so excellent books on medicine, biotechnology and molecular biology, and this is one of the best. Here he recounts the development of the idea that aging in humans can be scientifically understood and modified. He starts off with the wonderful story of the Hayflick limit with an account of his first interview with him and brings this maverick character to life. How often are the big ideas discovered by rogues and rebels--fearless men?He covers a very wide swath of current developments in the cutting edge of biology and medicine--telomeres, stem cells, transplants, cloning, and aging--all told in enough depth that you can't help but learn something, even if you are pretty well informed. The history, the personalities, and

the ideas are all here.One thing I appreciated is that Hall makes no pretense about being disinterested in the subject--he takes some of it personally, and is not afraid to relate what his gut is telling him. He is partisan in the best sense of the word. He unflinchingly challenges the idealistic "bioethicists" who have lately ejected such nonsense into the public space, pretending to a certainty only a bishop could appreciate.Hall also relates in some detail the evolution of the stem cell/cloning debate that has resulted in the policy that federal money can go to research only on the 70 embryonic stem cell lines already in existence, now known to be more like 6. And none of them suitable for therapeutic for humans because they are grown on a substrate of mouse cells and their viruses. The yokels and theologians have managed to set back this important avenue for improving human health by who knows how many decades... Sad to think we'll be looking for progress to the South Koreans, who recently generated human embryonic cell lines by nuclear transfer. Americans have yet to duplicate thisThe quality of Hall's prose, and the nature of the subject itself, conspire to produce a book that I found very hard to put down. A terrific read!

Regenerative medicine and human life extension are among the most cutting-edge pursuits in science, and potentially among the most profitable. In Merchants of Immortality, Stephen S. Hall offers both an exposeacute accent of this fascinating science and a case study of the billion-dollar industry that has grown up around it. At the center of the field are stem cell research and cloning -- topics of continuous ethical debate -- and the stem cell legislation that has unintentionally created a strange and thriving private-sector business niche.Merchants of Immortality is a captivating, incisive account of a new frontier at the intersection of biology and business.

From Publishers WeeklyDrawing on scores of original interviews and contemporary source material, Hall, a contributing writer and editor at the New York Times Magazine (Invisible Frontiers: The Race to Synthesize a Human Gene), gives a timely and engrossing account of the high-stakes science of life extension. The author kicks off with the minence grise of the field, Leonard Hayflick, and his human cell line called WI-38, which opened the gates for biotech research and showed that our cells may have built-in limitations on longevity. His WI-38 strain, taken from aborted fetus cells used to develop a polio vaccine, also became an ethical flash point that, as the author shows, has steered the course of biomedical research in aging, cancer, stem cells and cloning. Here, too, are the repeated rise and fall of entrepreneur Michael West, the idiosyncratic "lapsed creationist, born-again Darwinist," who merges his spiritual belief in immortality with big money science. Hall aims to show how the Clinton administration's decision not to support therapeutic cloning and regenerative medicine represented government held hostage by "heavy-handed, ideological fundamentalism, enforced by anonymous thuggery." The book wraps with President George W. Bush's decision in 2001 to allow stem-cell research to proceed, but only using already existing cell lines. Among Hall's conclusions: distrust of science is the subtext of the debate over embryonic stem cells and research cloning, and regenerative medicine is inevitably yoked to health-care limitations in access, affordability, timeliness and, Hall writes, "simply, good medicine." He says the notion of "victory over mortality" is a canard, but we may be able to slow the aging process. This is top-drawer journalism. "A timely and engrossing account of the high-stakes science of life extension....This is top-drawer journalism." Publishers Weekly, Starred"A carefully documented examination of how society deals with life-and-death matters." Kirkus s, Starred"An important survey of the entire landscape of the science aimed at extending human life....we all owe [Hall] a vote of thanks." --JoAnn C. Gutin Newsday"A fascinating, accurate and accessible account of some of [the] contemporary efforts to combat aging." --Robert H. Binstock The New York Times"[C]ompelling . . . Merchants of Immortality is a highly readable and important book." --Shannon Brownlee The Washington Post