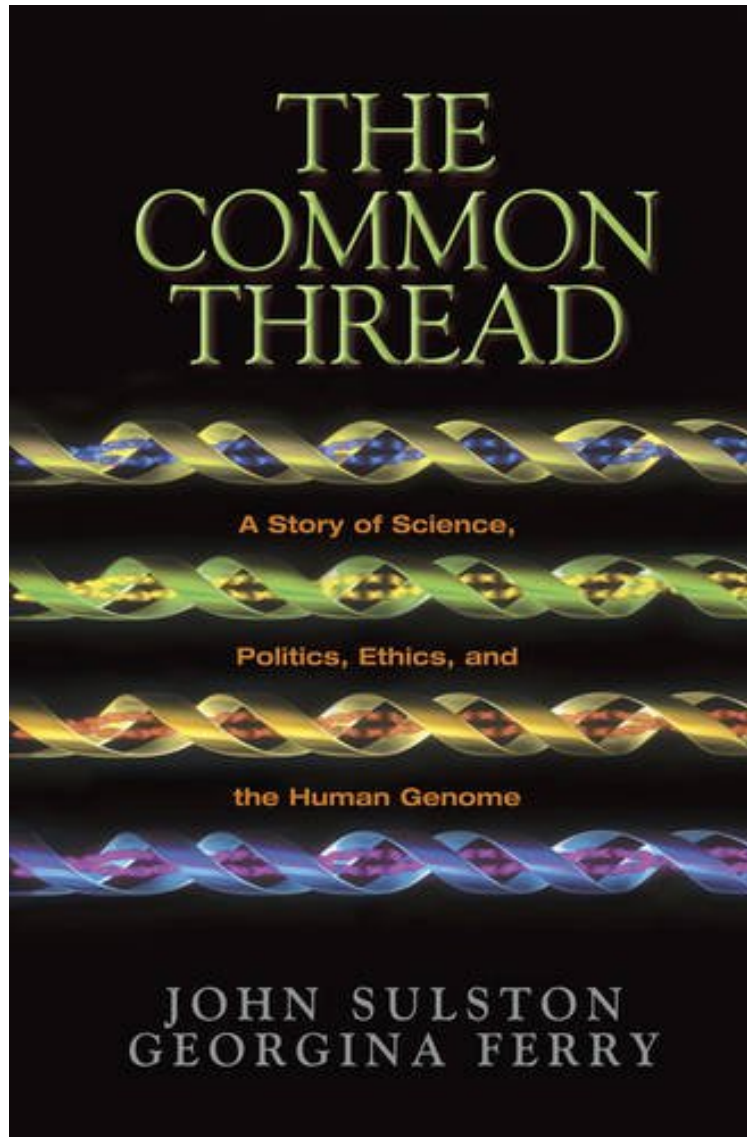


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The Common Thread: A Story of Science, Politics, Ethics and the Human Genome

Georgina Ferry, John Sulston
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#561371 in Books John Sulston and Georgina Ferry 2002-10-15 Original language: English PDF # 1 9.22 x 1.15 x 6.26l, 1.56 #File Name: 0309084091320 pages The Common Thread A Story of Science Politics Ethics and the Human Genome | File size: 77.Mb

Georgina Ferry, John Sulston : The Common Thread: A Story of Science, Politics, Ethics and the Human Genome before purchasing it in order to gage whether or not it would be worth my time, and all praised The Common Thread: A Story of Science, Politics, Ethics and the Human Genome:

0 of 0 people found the following review helpful. Gripping race to keep the science of the human genome in the public

domainBy WDBonettA superbly told story of Sulston's experience in mapping the human genome, whilst heading the Sanger Centre. The rival group headed by Venter although on the same quest, was attempting to patent everything it found. This is obviously a natural consequence of the huge investment made by various parties in his group. The excitement of scientific discovery and ground breaking work is peppered with the tension of the work being undermined by the politicking of Celera, the Venter company. Celera's 'shotgun' approach proved less successful in the long run, so they had to continually use the publicly released results of Sulston's team in order to bolster their own findings. Needless to say Venter's findings weren't made available to the publicly funded efforts. It does highlight the best and worst of science. Science as a methodology relies on dissemination of knowledge, and honesty. Bringing the exigencies of big business into that mix and problems are inevitable. I since become better acquainted with Venter through other sources, and he's clearly a brilliant, charismatic and driven scientist-who just happens to spearhead the burgeoning industry of biotech. I will be interested to see where his new work on changing one species of bacteria into another leads. I've read reviews above of how Sulston sounds bitter, but for me he came across with great humour, intelligence, humanity, and obviously very uncomfortable with political shenanigans, he'd rather just get on with the science.

5 of 5 people found the following review helpful. A private account of a very public milestoneBy PAUL FARRINGTONThis is a chronologically written, biographically styled account of the race to sequence the human genome. This book is co-authored by an English scientist who finds himself drawn into an increasingly political battle, both to beat the private sector to completion and to defend the genetic information gleaned from falling under commercial patents. He casts Celera Genomics' Craig Venter (the private sector competitor) as the villain in this account. I suspect there are many more sides to this story (Venter himself gives wounded rebuttals aplenty in subsequent interviews). How passionately you agree with Sulston's own conclusions depends very much on your opinion of private sector bioscience and how biological information should be subject to intellectual property rights. If the decoding of the human genome interests you, this public sector account of what happened should clarify and colour the picture. A small criticism: The different methods of cloning, mapping and sequencing are complicated stuff and key to understanding how this story unfolds - the non-technical reader could benefit from a basic glossary of technical terms.

25 of 27 people found the following review helpful. The Good Guys Win! We All Win!By Rob HardyWhen James Watson wrote the wonderful *The Double Helix* in 1968, many of his scientific colleagues were scandalized, even though it was about how Watson and Francis Crick had fifteen years before discovered the structure of DNA. It was perceived as unseemly to admit that they were racing other labs for the goal. Nowadays, that's simply the way science is done in many cases. It can have lamentable effects; the rush to get the research about "cold fusion" into print meant that other researchers did not have the chance to check the credibility of the experiments, and science as a whole suffered. In the case of the Human Genome Project, the effort to find the three billion letters in the human DNA recipe, it was a race from the start. In a book that will remind many of Watson's chronicle, *The Common Thread: A Story of Science, Politics, and the Human Genome* (Joseph Henry Press), John Sulston, who led the British team on the project, joins with Georgina Ferry, a science writer, to tell how the race was won, and by the good guys. It won't surprise anyone that Sulston himself is a good guy in his own memoir. Sulston and those who worked with him campaigned for money for their efforts, to be sure, but they were committed to making any data they uncovered public. In the other corner was Celera, a private company headed by Craig Venter, a former public scientist who, as head of a private firm, understandably did whatever he could to ensure the profitability of that firm. It was Celera's intention to map the genome, sell its data to those who wanted it, and patent genes. Venter's publicity material hinted that there was slack and inefficiency among the project scientists at the public trough, and he invited them simply to stand down and get out of the way while he finished it up, and incidentally while he made millions from whoever wanted to use the data he uncovered. Sulston had to speak out against the commercialization of the effort, and this put him squarely against those in America who think that commercial efficiency has every advantage against government stagnation. The resultant public relations battle is fascinating; Venter was good at it, and the public and politicians early became convinced that public ownership meant little. At one point Sulston says bitterly, "Once a particular point of view has taken hold in the public imagination, it's extremely hard to offset it. The only recourse is to compete on the PR front in the first place. I find that a profoundly depressing thought. Is it a fantasy that simply being honest will in the end be powerful enough?" This is a great story, one that will be mined in the future by historians of the epochal Human Genome Project. The book is not a good text on molecular genetics, or even the specifics of sequencing which are the science part of the story, but it is a splendid discussion of how science is done nowadays. (The "beer-fuelled discussions" between participants are recounted, as well as possible, in their place.) The difficult aspects of the struggle between public science and private science get a thorough and thoughtful history here. Read this account and rejoice in a big win for humanity and the common good over profits, this time.

The world was agog when scientists made the astounding announcement that they had successfully sequenced the human genome. Few contributed so directly to this feat as John Sulston. This is his personal account of one of the largest international scientific operations ever undertaken. It was a momentous occasion when British scientist John Sulston embarked on the greatest scientific endeavor of our times: the sequencing of the Human Genome. In *The*

Common Thread, Sulston takes us behind the scenes for an in-depth look at the controversial story behind the headlines. The accomplishments and the setbacks "along with the politics, personalities, and ethics" that shaped the research are frankly explored by a central figure key to the project. From the beginning, Sulston fervently proclaimed his belief in the free and open exchange of the scientific information that would emerge from the project. Guided by these principles, The Human Genome Project was structured so that all the findings were public, encouraging an unparalleled international collaboration among scientists and researchers. Then, in May 1998, Craig Venter announced that he was quitting the Human Genome Project "with plans to head up a commercial venture launched to bring out the complete sequence three years hence, but marketed in a proprietary database. Venters intentions, clearly anathema to Sulston and the global network of scientists working on the Project, marked the beginning of a dramatic struggle to keep the human genome in the public domain. More than the story of human health versus corporate wealth, this is an exploration of the very nature of a scientific quest for discovery. Infused with Sulstons own enthusiasm and excitement, the tale unfolds to reveal the scientists who painstakingly turn the key that will unlock the riddle of the human genome. We are privy to the joy and exuberance of success as well as the stark disappointments posed by inevitable failures. It is truly a wild and wonderful ride. The Common Thread is at once a compelling history and an impassioned call for ethical responsibility in scientific research. As the boundaries between science and big business increasingly blur, and researchers race to patent medical discoveries, the international community needs to find a common protocol for the protection of the wider human interest. This extraordinary enterprise is a glimpse of our shared human heritage, offering hope for future research and a fresh outlook on our understanding of ourselves.

From Library Journal The highly publicized events leading up to the 2001 publication of the Human Genome draft sequences in Nature (the public sequence) and Science (Celera's private, i.e., patented, sequence) form the outline of these absorbing, accessible, and complementary books. The stories go back 15-plus years, the cast of characters is large and international, and the events are still a work in progress. Sulston won this year's Nobel prize in medicine and physiology and formerly headed the Sanger Centre, Cambridge, United Kingdom, a major Human Genome sequencing center. Here, he gives a firsthand account of the excitement, hard work, vision, and daring needed to move from worm biology to recommending sequencing of the human genome, while senior and influential colleagues argued vigorously against it. He speaks forcefully of the necessity of keeping the sequence public and freely available. While Americans played a major part in this drama, it is good to have the European perspective and influences represented. Science magazine contributing correspondent Wickelgren focuses on the commercialization of the research process and some of the major players, particularly Craig Venter (Celera), Francis Collins (NIH's National Human Genome Research Inst.), and Kari Stefansson (Iceland's DeCode Genetics). Both books sharply highlight the fundamental tensions and interdependencies between both academic and industrial research and international competition and collaboration, and they also show the extent to which the biopharmaceutical industry is both science- and profit-driven. Many issues around gene patenting are clearly not yet settled, as these excellent books reveal, and the Human Genome Project will continue to be as much about politics, public opinion, and public relations as about science and technology. One quibble: Sulston includes a few web sites in his notes; Wickelgren cites none. Both titles are recommended for almost any library, particularly those with readers willing to go beyond sound bites and media hype. Mary Chitty, Cambridge Healthtech Inst., Newton, MA Copyright 2002 Reed Business Information, Inc. From The New England Journal of Medicine This is a gripping insider's story of the Human Genome Project, revealing both the exciting science leading to it and the battle to keep the results, "the heritage of humanity," secure from control by private interests. As the authors state in the preface, "Today any scientist anywhere can access the sequence freely at no cost. . . . We wrote this book so that people might understand how close the world came to losing that freedom." In Sulston's case, the path to the Human Genome Project began with the nematode worm, on which he worked under Sydney Brenner at Cambridge's Laboratory of Molecular Biology. This work led to a shared 2002 Nobel prize for Brenner, Sulston, and Robert Horvitz, who had also worked under Brenner early in his career. We are given intriguing glimpses into the thinking that led to the idea of mapping, and then sequencing, the entire worm genome; eventually, this work helped to pave the way to the mapping and sequencing of the human genome. A section of photographs conveys at a glance the history of the contribution of the Laboratory of Molecular Biology to the Human Genome Project and sparks some intriguing questions. Why did this lowly worm -- rather than, say, the well-studied fruit fly -- lead the way to the decoding of whole genomes? How could such powerful international cooperation spring from the humble, cramped quarters that were Sulston's office for many years before he moved into the high-powered Sanger Centre, with its rooms full of sequencing machines? What was it about these people that enabled them to overcome first the enormous scientific and technical obstacles and then the challenge of the private competition to the Human Genome Project? The book suggests interesting answers to these questions. The worm was an ingenious choice by Brenner, who wanted a model that was more complex than bacteria but more manageable than the fly. Its transparency let researchers observe cell division directly with a suitable microscope. With only 959 cells, it offered the possibility of complete mapping -- though only to people addicted to tackling what others saw as impossible or insane. James Watson, the first head of the Human Genome Project, apparently used a clever psychological ploy to jolt Sulston and

his colleagues into going from mapping to sequencing, and with this step, the worm project became the paradigm the Human Genome Project followed. The cramped quarters inspired some very close, long-lasting collaborations, notably between Sulston and Alan Coulson, who, as Fred Sanger's former assistant, brought crucial experience in sequencing DNA, and between Sulston and Bob Waterston, whose laboratory at Washington University in St. Louis became the primary U.S. center for sequencing the human genome. Sulston remarks that on moving into the spacious Sanger Centre, he missed bumping into people all day long and exchanging ideas; now formal meetings were required. The people, of course, are the most intriguing part of the story. Reading about the challenges along the path to the human genome, one realizes that the Human Genome Project was driven by very special people. They had to be resourceful and undaunted by tasks of incredible magnitude or difficulty. Sulston's early work on the worm provides a nice illustration of resourcefulness: whereas others had found it impossible to observe cell division beyond the first few stages, because the worm would not lie still, Sulston kept it happily immobile by offering it bacterial food right on the microscope slide and continuously recording its divisions. At lunchtime, he would refrigerate the worm to interrupt cell division, then resume where he had left off, continuing until the history of each cell had been traced. These people also had to be good at cooperating, even across national borders. Sulston showed this trait from the start. For him, sharing went along with informality and a sense of fun -- discussions and even interviews tended to continue in the nearest pub. His long-standing international collaboration with Bob Waterston on mapping the worm genome provided a model for the Human Genome Project: split up tasks as fairly as possible, stay in touch daily to avoid duplication and to allow cross-fertilization of ideas, and generally compete yet help each other. Finally, there had to be fierce, unwavering commitment to freedom of scientific information. It is perhaps in this arena that Sulston made his greatest contribution to the Human Genome Project. It was he who scrawled on the board the draft of the "Bermuda Principles" regarding the prompt, free release of data at the 1996 strategic meeting and set a strong example by posting sequence data on the Sanger Centre's Web site daily. In the service of defending this key principle, he transcended his natural aversion to management and politics and used every conceivable means to outwit those who sought to control and monopolize information. The earliest example is his cracking of the software code in the files produced by the sequencers at Applied Biosystems in order to process data more rapidly, more flexibly, and without the company's interfering control; this act is made all the more interesting by the fact that Applied Biosystems, which was acquired by PerkinElmer, was the commercial power behind Craig Venter's Celera Genomics, the private challenger to the Human Genome Project. With that event, the drama reaches a pace that will leave the reader breathless. Luck, last-minute financial rescues, and clashing characters and interests abound. In all of this, Sulston's actions illustrate his ability to shift his thinking quickly -- from producing finished sequences to generating raw sequences at dramatically higher speeds and from doing the science to getting messy in the realm of politics, the press, and the public relations wars. One comes away impressed, with the sense that these scientists could not have omitted even one of these steps without losing the battle they fought for free access to crucial scientific information and inquiry. Isaac Rabino, Ph.D. Copyright 2003 Massachusetts Medical Society. All rights reserved. The New England Journal of Medicine is a registered trademark of the MMS. "...excellent ... recommended for readers willing to go beyond sound bites and media hype." -- Library Journal "...fascinating and fast-moving... a masterful personal account..." -- Nature Medicine, December 2002 "The Common Thread has a good story to tell and tells it well." -- San Jose Mercury News, December 8, 2002