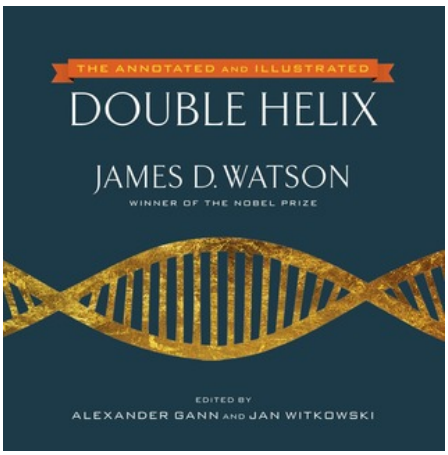

The Double Helix: Annotated and Illustrated

James D. Watson , Alexander Gann (Editor) , Jan Witkowski (Editor)

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By identifying the structure of DNA, the molecule of life, Francis Crick and James Watson revolutionized biochemistry and won themselves a Nobel Prize. At the time, Watson was only twenty-four, a young scientist hungry to make his mark. His uncompromisingly honest account of the heady days of their thrilling sprint against other world-class researchers to solve one of science's greatest mysteries gives a dazzlingly clear picture of a world of brilliant scientists with great gifts, very human ambitions, and bitter rivalries. With humility unspoiled by false modesty, Watson relates his and Crick's desperate efforts to beat Linus Pauling to the Holy Grail of life sciences, the identification of the basic building block of life. Never has a scientist been so truthful in capturing in words the flavor of his work.

The Double Helix: Annotated and Illustrated Details

Date	:	Published November 6th 2012 by Simon Schuster
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From Reader Review The Double Helix: Annotated and Illustrated for online ebook

Henry Sturcke says

I picked this book up in the hopes it would be the next step in my attempt to understand the building blocks of life. There is a little of that in its pages, but mostly it is something else: A gossipy account of how science is done by real human beings with their ambitions, rivalries, jealousies, and charm. Above all, the tale conveys a sense of the thrill of intellectual achievement.
The edition I read is expanded with annotations and appendices that fill in aspects of the story. At times, I found this paratext distracting and thought perhaps I should have read the unadorned version instead, which is written in an elliptic, casual style. It resembles the kind of crime story one quickly turns the pages of to while away a convalescent afternoon. On balance, though, I’m glad I read this edition to help fill in the story. In its unconventional way, this book is a further take on what we’re all engaged in: Life investigating and attempting to understand life.

Rebecca says

DNA! A subject all people should understand as best as possible.
Written for the lay reader, this book fits in the category, as Truman Capote coined, "Non-Fiction Novel." I am grateful to the American part of the Nobel Prize winning team Dr. James Watson for taking the time to bring to life the process of creating the first "pretty" and believable model of DNA. His story is one of stick-to-it-iveness not only in the scientific sense but also in the publishing sense. The efforts took faith, determination, high intelligence, scientific skill, competitive drive, interpersonal maneuvering, love of learning, hope for the future of humanity, and a bit if fun and good humor to boot. Watson's prose is engaging. This recent new edition, compiled and edited by Gann and Witkowski of Cold Spring Harbor, includes many photos, primary source papers and letters, and margin notes along the way that render the experience of reading the "novel" something akin to sitting down with a good friend to, with patience and attention, go through personal effects while listening to charming personal narratives. Watson made it clear he was telling the story from his point of view. Feathers and egos were ruffled upon the publication of the book AND during the scientific work in the early 50's, but all is well that ends well - and what a feat to figure out the double helix structure of DNA - the key to life! It was serendipitous for me that on the day after I started reading, Rosalind Franklin's 93rd birthday was the feature Google graphic. I would not have known who she was had I not picked up the book the day before. I also personally enjoyed the descriptions of life in Cambridge, as one of my sons studied there, and I have had the pleasure of punting on the Cam, dining on campus etc.

Amerynth says

James Watson's "The Double Helix" is very readable for a scientific memoir, detailing the days when Watson and his partner Francis Crick came up with the structure for DNA. In fact, one of Crick's major objections to the memoir is just that-- it's not scientific enough.

I found the book to be fascinating look at an exciting time in science and an interesting peep into a brilliant

mind. It is difficult to read at times, due to the sexism evident toward Rosalind Franklin. Without her X-ray work, their model probably wouldn't have ever come to fruition, yet the comments about her not fixing her hair or clothing really rankle (as does his insistence on calling her Rosy despite, as is made clear early in the book, this is something they called her behind her back in part due to her temperament.) Watson does apologize in the final chapter of the book, saying his opinion changed in later years.

Anyway, this was an interesting read, even for a non-scientist.

Julia says

To be clear, the five star rating is for the annotations and illustrations this edition offers - not the original text of The Double Helix. Alexander Gann and Jan Witkowski did a superb job incorporating all the photographs, correspondence, and interview materials. It gives so much context to the story I had previously only knew snippets of. If I had to pick a favorite part, it would definitely be Appendix 4. I had no idea of the backstory into writing and publishing the book! If you're considering reading one man's very subjective account on the discovery DNA, I highly recommend you read this edition. While you're at it, pick up Rosalind Franklin: The Dark Lady of DNA by Brenda Maddox.

Aileen says

This was an interesting read. I'm giving five stars for readability (layman accessible science and not boring like a textbook), personality, and it's intimate feel. I'm not generally a fan of stories (however true) told by privileged white academics of the Fifties. There is a bit of silliness that I found a tad pointless talking about all the hoity toity, silly goings-on of Cambridge graduate students. Also the casualness of discussing "girls" was definitely old-school and somewhat distasteful to my sensibilities but this volume has crap tons of footnotes and pictures which are not in older printings. So it is worth a read, if for this material alone. If you decide to read this, do yourself a favor and get a copy of the 2012 fully annotated version.

Rossdavidh says

I had first heard about Watson's "The Double Helix" several decades ago, in high school, when my Chemistry teacher recommended it. Even back then, the immediate topic that came up, in the next sentence after recommending it, was the treatment (by the book, and by history more generally) of Rosalind Franklin. I finally got around to reading it, and was surprised to find that she was portrayed as a central character, of great importance in the discovery of DNA's double helix. I'm not sure what to make of it, really, but there it is.

The other thing about "The Double Helix", the book, is that it is still a startlingly human account of how scientific discovery works. Watson, who seems to be perhaps incapable of filtering what he says (then or now), is quite free with commentary on himself getting distracted by girls or alcohol or just his own disorganization, on the way to (with Crick) turning Franklin's x-ray diffraction images of DNA into a theory on how DNA was actually put together. He is also very free with details about Crick's life and relations with his colleagues, who he seems to have had a very great ability to set on edge, but not a very great ability to care.

The version of the book which I read was "Annotated and Illustrated", and included a great deal of photography of the people involved, some of the x-ray diffraction evidence in question, maps of the area, letters written by different people to one another or their family, and so forth. It mostly bears out the version of events Watson relates, although there is some more evidence that Franklin had been misled by others at King's College as to whether she would be working on DNA if she accepted a position there, or whether she would be working independently or under Maurice Wilkins' direction.

One thing that comes out in force is the difference between British and American attitudes towards science. Here, it is more or less expected that other scientists are going to be trying to race you to arrive at any major (or in some cases even minor) discovery. Watson gives the impression that there was very much an unwritten rule in the U.K. that you were not to tread on others' research subjects, and that he and Crick were only able and willing to do so because he was American, and Crick was socially oblivious. Whether this is a fair description of the culture of British science then or now is beyond my ability to say.

Watson ends with an Epilogue discussing where everyone mentioned in the book was at the time of writing, about 15 years after the events in question. Of them all, Rosalind Franklin was virtually the only one who had died. I was again surprised by the following statement, since I had more or less been led to believe that she was given short shrift in the book:

"...we both came to appreciate greatly her personal honesty and generosity, realizing years too late the strugles that an intelligent woman faces to be accepted by a scientific world which regards women as mere diversions from serious thinking. Rosalind's exemplary courage and integrity were apparent to all when, knowing she was mortally ill, she did not complain but continued working on a high level until a few weeks before her death."

What Watson does not say here is that she died of ovarian cancer. It is hard to avoid wondering whether a researcher working with x-rays on a frequent basis, in the 1950's (when modern levels of safety were not frequently observed), might not have in fact been killed by her work, as Marie Curie and Richard Feynman probably also were. One wonders what she might have achieved if she had lived as long as Crick or Watson.

"Double Helix" holds up well fifty years later, and has still rarely been equaled at offering an unvarnished insight into the very human and chaotic business of humans attempting to figure out how the world around them works.

Abhilesh Dhawanjewar says

The Annotated and Illustrated version of the Double Helix by Alexander Gann and Jan Witkowski adds to an already spectacular personal account of the discovery of the most coveted macromolecule in the history of biological sciences. Originally published in 1968, ‘The Double Helix’ is James D. Watson’s subjective account of the most seminal discovery of his life for which he was awarded the Nobel Prize in Physiology in 1962. Watson envisioned the book as a novel of the history of science, an inside peek on the excitement and the drama of being involved in a scientific discovery with just enough technical matter so as to not scare the casual reader away. Watson, no doubt a charismatic writer recounts the dramatic events that shaped the race to solve the ‘Secret of Life’ as experienced by a 23 year-old American working at a prestigious English University.
His very honest and carefree portrayal of the events has attracted significant criticism with many notable scientific figures of the time who have labelled him as a sexist, lackadaisical and vainglorious character. I

personally find most of this criticism unjustified, especially the parts which refer to Watson’s demonizing portrayal of Rosalind Franklin and her contribution towards the discovery. While Watson himself agrees that Franklin’s data was very very important and crucial to speed up the discovery, Watson and Crick and Franklin believed in very different ideologies about how the structure of DNA could be solved; Watson and Crick preferred the theoretical approach of model building similar to Pauling’s solution of the structure of alpha-helix whereas Franklin sternly believed that only meticulous and laborious collection of X-ray diffraction data could solve the structure. This basic difference between the two ideologies was the crux of many hostilities between the research groups at Cavendish and King’s College, London. The Annotated version here does a brilliant job of piecing together bits of documents that provide a more complete picture about the source of these hostilities between the two research groups and how Watson’s careless description of the events have led to misunderstandings. Clearly, the sexist views of the author and other characters towards Rosalind Franklin and their failure to treat her as an intellectual equal cannot be denied but such sexist judgements were commonplace in the 1940s and Watson’s honest portrayal of it should only be seen as a reflection of institutional sexism in those days. As to the accusations of Watson being lackadaisical, Watson does a fairly good job of portraying the chance events and ideas that led to the final pieces of the puzzle falling together reiterating the role serendipity plays in most of the greatest scientific discoveries and his portrayal of himself as a lazy worker might as well be interpreted a humble and modest description of the self.
Similar to the nail-biting drama and hostilities between groups described in the book, the backstory into writing and publishing the book is riddled with similar hostile objections being raised against the publication of the book, the most notable ones coming from Francis Crick and Maurice Wilkins. *Appendix 4 and 5* are my favorite parts in this ‘Annotated’ edition as the authors compile letters and correspondences between the protagonists to form a much more complete picture of the criticisms Watson’s book has faced. The collection of photographs and snippets of information on the numerous people Watson mentions just by names plus settling the inconsistencies in the original text make this startlingly human account of how scientific discovery works so much more exceptional.

SM says

James Watson's "The Double Helix" reads like an exciting mission of scientific discovery. No wonder it was a best seller when it was published. It becomes clear reading the side stories that he has the social skills of a clam. Nobody comes off well from Watson's version of the story. Especially his portrayal of Rosalind Franklin whose work was the foundation that proved the model was correct. His misogynistic pursuit of women for company betrays a bias in his narration toward his own passions. Fortunately this book comes with lots of annotations and illustrations from source documents that allow the reader to get closer to the truth of the story. With so many of the people in the story asking him not to publish it, we can see how their parts were misportrayed. It is an interesting read but you'll need to use more than just a grain of salt to get through the fudged memories. 3 stars for "The Double Helix", 5 stars for the annotations and illustrations which comes out to 4 stars for the book.

Jim Razinha says

A simple, surprisingly (for a scientist) conversational read, interspersed with some not necessarily simple chemistry, and ... interspersed with Watson's misogyny and just plain assholery. I already knew Watson was an ass, but here he puts it in his own writing. (And his weak apology for his treatment of Rosalind Franklin

in the original edition didn't cut it.)

Watson's story is engaging, and it is enhanced in this edition by the annotations...which helped to double the reading time but were worth it. Lots of good details augment Watson's narrative.

I'm not sure why this made the New Scientist Top 25 Most Influential Popular Science Books list...not sure how it could inspire anyone with a tad of reason in the head. It's an okay story, but it's a one-sided, reasonably well written story from an ass. Sorry if that offends, but he is and he does...offend. Though not as much as his later comments.

Victoria says

important book. probably wouldn't have reread it except for this class.

James says

After reading Eric Kandel's autobiography, I had high expectations of Watson's The Double Helix. I would not recommend this book as it is somewhat a piece of shit.

James Watson's writing and approach were not appealing to me. Interesting as a historical document... but I had a hard time following the gossip, name dropping, and focus on the mundane aspects of Watson's journey to indulge his ego by beating Linus Pauling to proving the helical nature of DNA.

I am glad I read this new annotated version, as the footnotes, clarifications, explanations, and appendixes are, by far, the most interesting aspect of the book. This edition includes a highly critical review of The Double Helix published in the Science journal at the time of the book's publication. The review summed up my feelings about the book perfectly.

If anything, this book made me more interested in reading Francis Crick's autobiography. or a book about Rosalind Franklin instead. I know understand why people have criticized Watson's misogynist and dismissive attitude towards Franklin, though he does admit regret in the epilogue.... which of course was written after Franklin's death.

Joel Finkle says

I've known about Watson and Crick since I was a little kid, and I always pictured science being done by wise old men who looked like Einstein. Reading this book, Watson and Crick come out sounding a lot more like Sheldon and Leonard of "The Big Bang Theory."

There's chasing after women, obsession over hobbies (tennis and French cinema instead of X-Box and Star Wars). Watson comes off as a bit of a prat, not wanting to do serious study, and Crick is described as flitting from one interesting topic to another.

It's a bit hard to read a book about solving a mystery when it's something every school child knows (or

should): the clues to base-pairing (C to C, T to A in the genetic code) were presented early and not explored in depth until much later -- having to get metal models made, rather than going down to the university bookstore for plastic atomic models is part of the problem.

Rosalind Franklin was definitely screwed out of the discovery, from reading this. It's not Watson and Crick's fault, more of King's where she worked not giving her the authority to do the research. She's still treated very shabbily, mainly because of being a strong woman in a male-run profession.

Having the original references to the scientific research, biographical details of the various scientists involved, and photos of Cambridge in the 50's really helped to get into the feel of what it was like to do research in unheated stone buildings with tools that are primitive by high-school standards today (OK, maybe not the electron microscopes). I highly recommend reading this annotated version if you can find it.

Donna says

Still a Voice of history. This is a rare chance to experience intimate, first person, reflections of a pioneering journey in science. History will construct an official statement of his achievement, but this is an extraordinary audience with Watson. At times it feels like sitting in an armchair across from him while he relays the events of the day. This book captures Watson's journey as he and his professors and collaborators seek to understand genes. We now take for granted the double helix structure of DNA, but at the time of this research nobody knew (yet) what to expect.

I listened to this as an audiobook. The language is a bit stilted, but that may be more the style of Watson. He describes life as a graduate student in America and Cambridge (England), and the personalities of those caught up in the search. Rivalries with Linus Pauling and Rosalind Franklin (Crystallographer whose photograph illustrated the structure)are chronicled as well. I'd wondered for years why she had not been included as part of the discoverers. This book clarified her role.

In addition to his notes of science, he describes life in the Academy in the late 1940s and 1950s, and includes social life and travels. All of that is a bit quaint by today's standards. He lays open the unabashed classism of the period in England (society among the academics).

At the end he presents a touching and personal tribute to Rosalind Franklin, and honored her contributions to the development of their understanding of the model of DNA.

All in all an interesting and curious read.

Peter Tillman says

I read about half of this and enjoyed it before it came due. I recall enjoying the book years ago, when it was new(ish), so there was no urgency to the reread. The annotations and photos are fun. Given Mount TBR, I don't know if I'll get back to this one....

Aaron Griffin says

What story is the author telling? Describe his/her investigation?
In the book, The Double Helix, James Watson's tells the story of how he and another scientist, Francis Crick discovered the structure of DNA. There is a lot about the character of the scientists involved in the incredible race that finally identified the double helix, as there is about proteins and the makeup of DNA. The events of the story take place over only three years, from 1950 to 1953. It begins in Copenhagen, with Watson's arrival in Europe in search of a career. Many different branches of science failed to interest him and he is very honest about his early working life and not knowing what his future plans were. Knowing that his real interest was in understanding genes, he moved to Cambridge University in England, where he immediately teamed up with the scientist, Francis Crick. Crick's loud voice gave many of his colleagues a real headache as opposed to the soft spoken Watson. Advances in understanding DNA were being made across the Atlantic by an American scientist named Linus Pauling. Watson and Crick know that time is short and that they are in a race with Pauling to find the structure of DNA. The middle section of the book deals with their attempt to understand DNA by using models. They can't convince any other scientists that theirs is the right way, however, after they fail their first attempt, their work on DNA stops. Having upset all the people who could have helped them it seems that Crick and Watson will never make it. Life at Cambridge continues and Watson has plenty to say about living arrangements and meals in the Cambridge colleges. In the final part of the book, the race to unravel DNA gets hotter. Linus Pauling at Cal Tech in Pasadena, California, is almost there. He publishes a paper, but too soon. Watson and Crick immediately realize that he has made a serious, basic mistake. Their desire to win the race sends them running back to their DNA ideas and models. Watson discusses how they arrive at the answer, finally winning the support of other scientists as they get there. The story ends with Watson, aged only twenty-five, and Crick, announcing to the world that they have uncovered the nature of life. The double helix is a DNA strand containing all genetic information.

What area(s) of science or math did the author integrate into their story? Describe the connections you notice using evidence from the reading?
The areas of science used in the story are biology and the study of the human body as well as the study of chemical bonds, RNA structured DNA, the basic parts of DNA and DNA pairing. The example of biology and the human body are all over the book so I'm not going into that. Chemical bonds take place on page 101; James Watson uses the book The Nature Of The Chemical Bond as a reference for his own work. RNA structured DNA comes into play on pages 110 and 111, both pages are dedicated to RNA. The base parts of DNA are shown in a diagram on page 84. It talks about how DNA is made up of sugar and phosphates and made in a complex way. DNA pairing is shown in page 187 where it talks about the four based pairs, adenine, thymine, guanine and cytosine, the basic structure of life.

What questions did this book raise for you? What would you like to know more of now that you've read this book?
Some questions the book raise for me are:
What can I do to increase my yield of DNA?
How is the cell wall of plant cells broken down?
Why does the DNA clump together?
Isn't the white, stringy stuff actually a mix of DNA and RNA?
What sources could I use to extract DNA from animal cells?
What can be done with my extracted DNA?
How is DNA extraction useful to scientists?