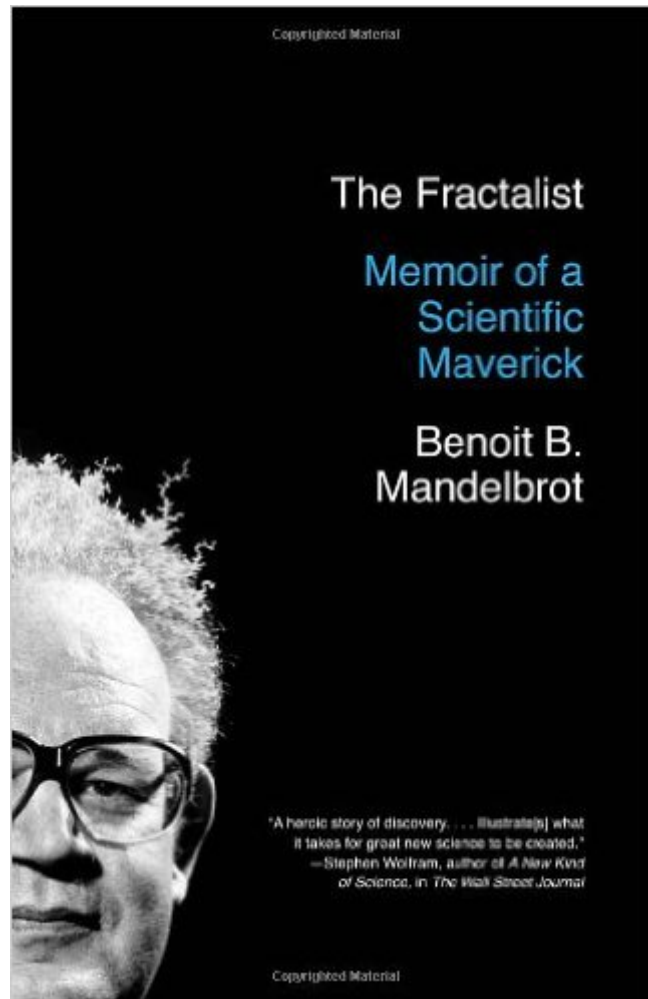


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The Fractalist: Memoir Of A Scientific Maverick



Synopsis

A fascinating memoir from the man who revitalized visual geometry, and whose ideas about fractals have changed how we look at both the natural world and the financial world. Benoit Mandelbrot, the creator of fractal geometry, has significantly improved our understanding of, among other things, financial variability and erratic physical phenomena. In *The Fractalist*, Mandelbrot recounts the high points of his life with exuberance and an eloquent fluency, deepening our understanding of the evolution of his extraordinary mind. We begin with his early years: born in Warsaw in 1924 to a Lithuanian Jewish family, Mandelbrot moved with his family to Paris in the 1930s, where he was mentored by an eminent mathematician uncle. During World War II, as he stayed barely one step ahead of the Nazis until France was liberated, he studied geometry on his own and dreamed of using it to solve fresh, real-world problems. We observe his unusually broad education in Europe, and later at Caltech, Princeton, and MIT. We learn about his thirty-five-year affiliation with IBM's Thomas J. Watson Research Center and his association with Harvard and Yale. An outsider to mainstream scientific research, he managed to do what others had thought impossible: develop a new geometry that combines revelatory beauty with a radical way of unfolding formerly hidden laws governing utter roughness, turbulence, and chaos. With full-color inserts and black-and-white photographs throughout.

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Customer Reviews

"My life", says Benoit Mandelbrot in the introduction to his memoir, "reminds me of that fairy tale in

which the hero finds a hitherto unseen thread, and as he unravels the thread it leads him to unimaginable and unknown wonders". Mandelbrot not only found those wonders, but bequeathed to us the thread which will continue to lead us to more wondrous discoveries. Mandelbrot was one of those chosen few scientists in history who are generalists, people whose ideas impact a vast landscape of fields. A maverick in the best sense of the term, he even went one step further and created his own field of fractal geometry. In a nutshell, he developed a "theory of roughness", and the fractals which represent this roughness are now household names, even making it into "Jurassic Park". Today fractals are known to manifest themselves in a staggering range of phenomena; the rhythms of the heart, the distribution of galaxies, market fluctuations, the rise and fall of species populations, the shapes of blood vessels, earthquakes, and the weather. Before Mandelbrot scientists liked to deal with smooth averages and equilibria, assuming that the outliers, the "pathologies", the sudden jumps from normalcy were rare and could be ignored. Mandelbrot proved that they can't and found methods to tame them and bring them into the mainstream. His insights into this new view of nature effected minor and major revolutions in fields as diverse as economics, astronomy, physiology and fluid dynamics. More than almost any other thinker he was responsible for teaching natural and social scientists to model the world as it is rather than the abstraction which they want it to be. In this memoir Mandelbrot describes his immensely eventful and somewhat haphazard journey to these revelations.

I came to know Benoit Mandelbrot's work through the writings of Nassim Taleb, little did I know at the time "Mandelbrotian" would play a significant role in changing my life. The day the memoir came out, I finished the entire work and have since reread it again. I lack the words to describe how inspirational Mandelbrot's work is to followers of his fractal geometry, even if they are not professional mathematicians. For people that have a fear of math - this is a great book. In fact, there is only one equation in the entire book. Instead this memoir gets into the thoughts of one of the 20th century's greatest minds. Mandelbrot constantly avoided structure, smoothness, and the status quo. In essence, his life was rough and that was exactly the way he liked it. Despite living under constant uncertainty, Mandelbrot never complains or worries over the lack of security he faced, frankly, he realized that he thrived under such conditions. It was refreshing to read a memoir free of over-causation. Often the autobiography of a famous person is filled with causes on how and why they were so successful.. Instead, Mandelbrot writes the major events in his life as best he can remember them (often finding support in pictures or items from his archives) and examines how luck, skill, and perseverance shaped his career. Sometimes choices were made for him, other times

he chose an unconventional path on purpose but he never stopped trying to find his "Keplerian" contribution to math. Somehow he grasped at a young age that true discoveries are not gained through climbing the established academic ladder but by tinkering on the verge of such structures.

Like Sinatra, he did it his way. He crossed disciplines searching for a theory of roughness, sought after since antiquity, and he found it at age 55, in the Mandelbrot set, when most scientists, mathematicians, so on, have seen their best work done and gone. Hopping and skipping over the hot coals of academic demands that he stick to one subject, he chose to let his mind go where it would. Mandelbrot's memoir clears a bit of brush for the next maverick whether he or she be in geometry, molecular biology, or in any future, yet unrecognized discipline. "The Fractalist" is written with a youthful mind, looking forward, always. Mandelbrot, inventor of fractal geometry, in his own words, perhaps lightly edited, wanted to tell an upcoming generation about the journey of an "outlier", who wanted to say that the rules can be broken, that a life of the mind is preferable in some to wealth, and that the pinnacle of success is reachable climbing this not often taken path. The wild state: Mandelbrot tells us through a life story that education is no longer about who is worthy enough, as it was often in 1940's France when he came out of hiding after the war to prepare for entrance exams in a few month's time. It is about who is curious enough, whose mind is in one of the three states of risk and randomness, "mild, slow, or wild." Benoit Mandelbrot's mind was definitely in the "wild" state, full of heat and passion for connecting novel ideas. Benoit Mandelbrot's writing charms, it wanders off, it shows that it's difficult even for a genius to write a coherent memoir, but don't let that stop you. The book has only one formula in it, and major concepts peppered throughout it, in introductory form mostly.

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