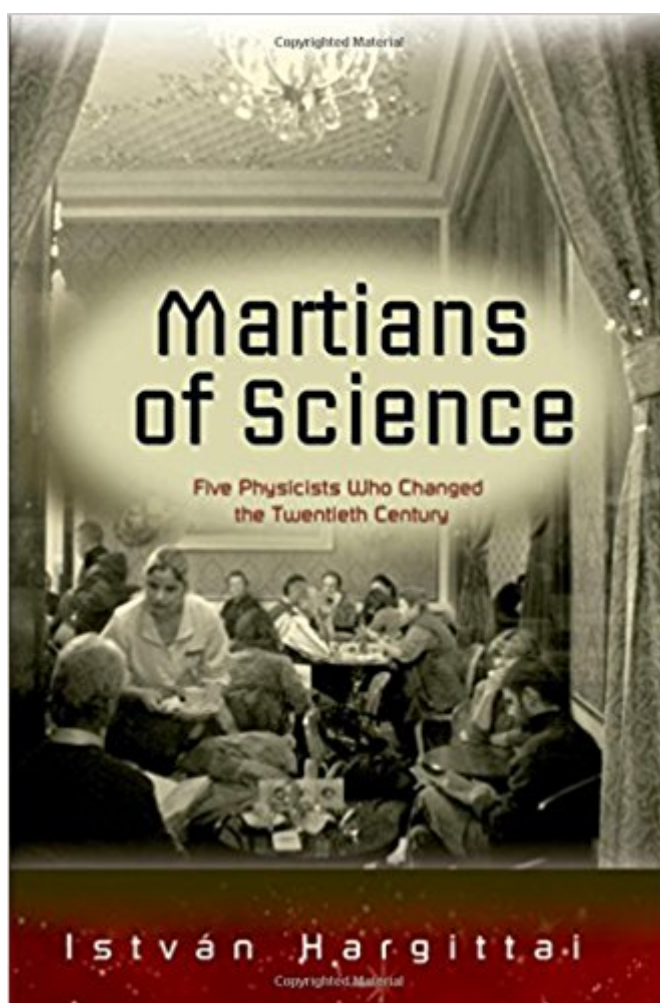


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# Martians Of Science: Five Physicists Who Changed The Twentieth Century



## Synopsis

If science has the equivalent of a Bloomsbury group, it is the five men born at the turn of the twentieth century in Budapest: Theodore von Kármán, Leo Szilard, Eugene Wigner, John von Neumann, and Edward Teller. From Hungary to Germany to the United States, they remained friends and continued to work together and influence each other throughout their lives. As a result, their work was integral to some of the most important scientific and political developments of the twentieth century. István Hargittai tells the story of this remarkable group: Wigner won a Nobel Prize in theoretical physics; Szilard was the first to see that a chain reaction based on neutrons was possible, initiated the Manhattan Project, but left physics to try to restrict nuclear arms; von Neumann could solve difficult problems in his head and developed the modern computer for more complex problems; von Kármán became the first director of NASA's Jet Propulsion Laboratory, providing the scientific basis for the U.S. Air Force; and Teller was the father of the hydrogen bomb, whose name is now synonymous with the controversial "Star Wars" initiative of the 1980s. Each was fiercely opinionated, politically active, and fought against all forms of totalitarianism. Hargittai, as a young Hungarian physical chemist, was able to get to know some of these great men in their later years, and the depth of information and human interest in *The Martians of Science* is the result of his personal relationships with the subjects, their families, and their contemporaries.

## Book Information

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## Customer Reviews

"What a story! Five brilliant Jewish-Hungarian kids burst out of the great secondary schools of

Hungary, learn their physics in Germany, and give their all to America in WWII István Hargittai, a Jewish Hungarian like his heroes, tells the remarkable story of five immigrants of vastly different politics, without whom American science (and the world) would not be the same."--Roald Hoffman, Nobel Laureate, Ithaca, New York"István Hargittai traces the turbulent lives of five uniquely creative scientists who survived, succeeded, and changed the world."--Arno Penzias, Nobel laureate, San Francisco"This is an important story that needs to be told, and Hargittai tells it well."--Nature"Hargittai's book is subtle and thoughtful."--Physics TodayCharlie Munger of WESCO Financial Corporation recommended this book at the 2007 WESCO Annual Meeting: "It is a hell of a book about five Hungarian physicists driven to the U.S. by Hitler, who contributed much to science here. I can't recommend it enough."--Charlie Munger"fascinating and informative"--Chemical Heritage

István Hargittai is Professor of Chemistry and head of the George A. Olah PhD School of Chemistry and Chemical Engineering at the Budapest University of Technology and Economics. He is a member of the Hungarian Academy of Sciences and has lectured in some 30 countries and taught at several universities in the United States. His books include the Candid Science series of his collected interviews with famous scientists, The Road to Stockholm, and Our Lives.

This is a highly insightful Book, that I read a couple years back (I did originally order it from , at the time), but waited awhile to write a review (because I just started writing comments, towards the end of 2013). It tells the story of a handful of extremely gifted human beings, who were forced to flee Europe due to the Nazi persecution (on account of their Jewish heritage). István Hargittai's extraordinary Book is essential reading to anyone fascinated by this terrible historical epoch, and the amazing impact this particular handful of great minds had on Science, and subsequently, the course of World events. These 'Martians' (so called, because their ways of thinking seemed totally 'other-worldly'), were all born in Hungary (mostly Budapest), during that country's 'Golden Age' (late 19th, early 20th Century), when many of the brightest, most luminescent Stars of the Arts & Sciences, were molded by a truly stellar Educational system (within Hungary initially), then later matriculating throughout the best Universities of Europe (especially at Gottingen, in Germany - where there seemed to be a literal meeting of the greatest scientific Minds, mainly during the 1920's). This group of 'Martians' included: John von Neumann = the "Living Computer" who was probably the most naturally gifted mathematician from that time period, and later became a literal father of the underlying 'Logic' forming the very foundation of the subsequent computer & artificial

intelligence explosion that was just at infancy, during the late 1940's, early 1950's. Leo Szilard = the great 'conceptualist & theoretical Dreamer' who first envisioned the possibility of creating an authentic nuclear chain reaction, and took the Lead (with Wigner), in convincing Einstein to write the historic Letter, warning Roosevelt that an Atomic Bomb was feasible (therefore, it was imperative that America/Free-World build it before the Axis powers). Eugene Wigner = the quietly Low-key, but extraordinarily brilliant Nobel Prize winner! Edward Teller = the controversial, but also intellectually gifted, proponent of advanced weaponry as ultimate security (i.e. he lived by one mantra 'Offence is the only defense'), also the later bane of Robert Oppenheimer's existence\*\* (although I think there was a mutual respect between the two, if not genuine friendship, during the Manhattan Project). An extremely complex/contradictory & highly polarizing figure - still controversial into the 1980's (for his vociferous support of 'SDI/Star Wars'). Theodore von Karman = the aerospace genius, that greatly modernized America's Air-Force/ air defenses. This is really a story of survival. Intriguingly played out by highly rational human beings that started Life in a World (prior to WWI), that seemed to be on a steady road of advancement & understanding in Science, and Beyond (a continuous path of Enlightenment, if you will) ==> only to be confronted head-on, by the World gone completely Mad/ coming terribly unhinged, overnight - i.e. the Long developing rules of rationality & reason dashed to Oblivion (in most of Europe, after Third Reich domination) => Ideas & Logic completely trumped by arbitrarily imposed racial hierarchies with absolutely no scientific basis/ no validity, completely abandoning all moral precedents. How could any logical, reasonable, 'human' beings exist in such a World?! They did it by emigrating to those nations that still valued the free-flow of ideas (i.e. where the good/ best ideas could still be judged on their Merits alone, and eventually win the Day!) Most of the 'Martians' came to America = Greatly helping not just the WWII effort against the Axis powers, but contributing immeasurably to the scientific Wonders\* that would soon be unleashed, in the coming decades (e.g. eventually leading to beneficial technology like personal computers, medical diagnostic breakthroughs, beginning of Space exploration, cell phones, Internet. I-Pads, etc.), that everyone now takes for granted! I think, the story of these 'Martians' is most intriguing, but also possibly somewhat forgotten here in America, unfortunately - since it was America's pluralistic democracy (imperfect as it may be), and also the USA's virtual Love of 'New Ideas' that attracted/ encouraged these Martians to settle, and make their greatest contributions here - most stayed permanently, with children, and/or grandchildren born, and raised here. note\*: of course, many would say that Atomic bombs are not Scientific Wonders - but there are two salient points here: (1) can you imagine the World if the Axis powers had the 'bomb' first (even if I could imagine, I wouldn't dare contemplate it); and (2) the 'science' underlying the atomic fission process is absolutely an

incredible wonder - and thorough understanding of this process is completely essential, to being able to have further Energy advancement possibilities (perhaps leading to much safer nuclear fusion).note\*\*: the Great Oppenheimer Biography, titled 'American Prometheus' (by Bird & Sherwin) = also discusses Teller vs. Oppenheimer's intensely strained relations, caused by serious disagreement over building the hydrogen bomb, in the early 1950's.Kati Marton's Book called 'The Great Escape' also presents the flight of massive talent and brainpower, from Hungary, during the War Years (including the 'Martians' but also Artists, like photographer Robert Capa, and movie director Michael Curtiz = director of 'Casablanca'!)

As the daughter of the book's author, I bring an unusual perspective to this piece, one that will give you some background on how this book came about and why you will be in for a treat when reading it.My father knew two of the five Martians discussed in this volume (Wigner and Teller) and had expressed a great interest in the work and lives of all five (Szilard, von Neumann, von Karman in addition to the above two) throughout his life. Curiously, however, despite having written numerous books about scientists, he never intended to write a book about these five until Oxford University Press approached him about it. When he finally took up this project, he threw himself into it with zest. When the book was near completion, he met with almost all of the surviving children of the Martians, not to change anything but to get an additional impression of their personalities. A byproduct of the book was a play he wrote about Teller, which surprised even me despite being used to his occasional unusual ideas.Looking back, the Martians were always on my father's mind, and he cherished his long-lasting personal acquaintance with Eugene P. Wigner. (Even as a child, I remember seeing the picture of the two of them taken upon their encounter at the University of Texas at Austin in 1969.) The family legend had it that we might be distant relatives, but there was never any hard evidence for that. My father started correspondence with Wigner when he was still a student, well before I was born. Actually, Wigner wrote him first after my father had published an article in a Hungarian literary magazine soon after Wigner's Nobel Prize. My father's acquaintance with Teller came much later, when he and my mother visited the Tellers in their home in Stanford in 1996.Having read The Martians of Science, I feel as if I had become personally acquainted with all five of the people discussed in the volume. It is fascinating to see that such incredible people emerge from just one country to contribute so much to science and to the defense of the United States. It is sad that they were forced out of Hungary, where even today - while their achievements are being recognized - the reasons of their departures are often covered up. This book puts these things into proper perspective.For an engaging, detailed, and passionate account of the lives of five

incredibly important figures (regarding both science and history), I highly recommend this book.

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