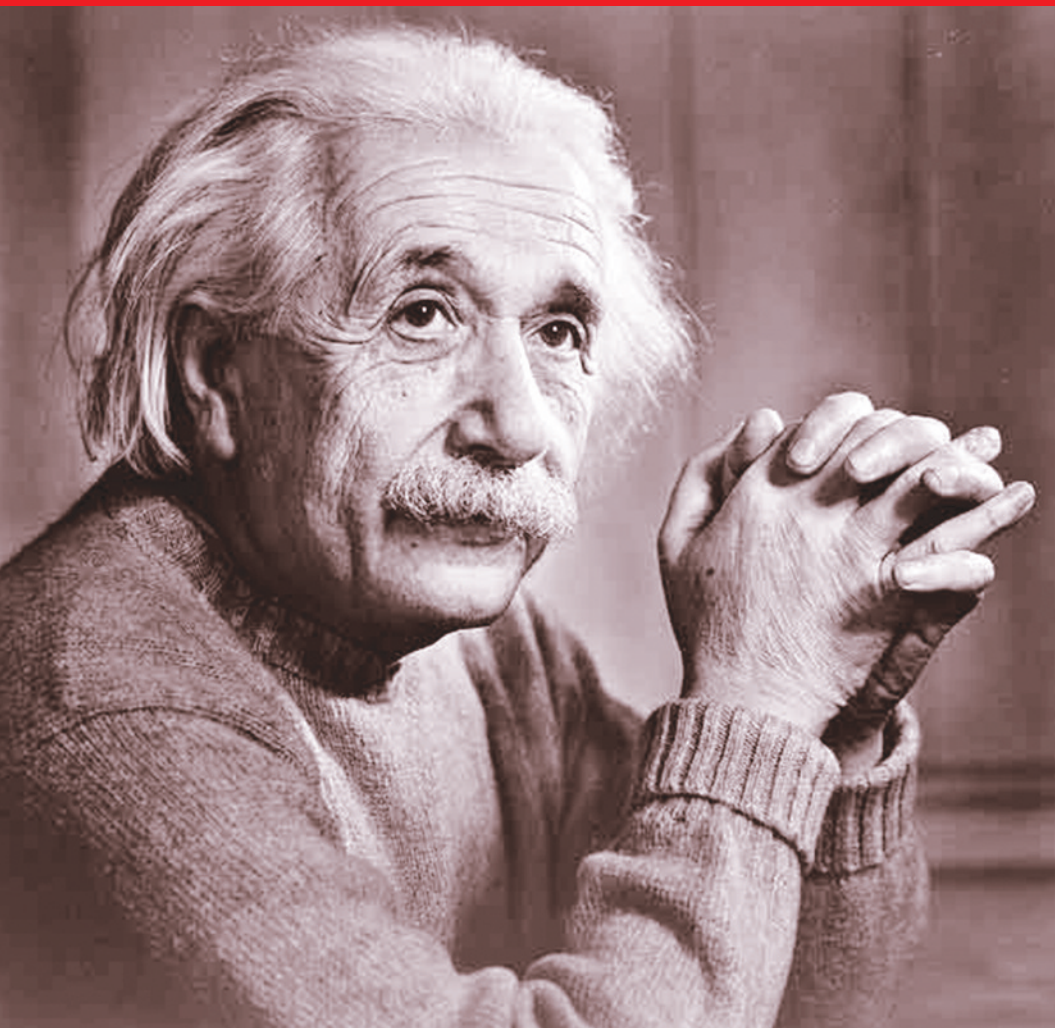


Makers of the Modern World



BY **Joe King**

This handbook is produced by the
Montreal Jewish Publication Society
co-led by
Reginald Weiser and Dr. Thomas Otto Hecht.

This publication is dedicated to
the founders of the Society
Prof. L. Michael Bessner and Hy Adelman.

This is copy number of this limited edition.

Three immense contributions by Jewish scientists helped most of the world's population to survive:

- **Karl Landsteiner** – discovered there are different kinds of blood, making safe surgery possible. Everyone who has undergone surgery owes their life to this Jewish scientist (awarded 1930 Nobel Prize in Physiology or Medicine “for his discovery of human blood groups”.)



*Dr. Karl Landsteiner –
he made blood transfusions safe.*

- **Fritz Haber** – discovered how to make artificial fertilizer, ensuring that the world's population could grow to its present seven billion. More than three billion people are alive today because of his discovery. (Awarded 1918 Nobel Prize in Chemistry for discovery of how to synthesize fertilizer.)
- **Josef Popper** – discovered that electricity can run along a wire – advancing human progress astronomically. (“first to suggest the possibility of transmitting electric power” *Encyclopedia Americana*.)

A Quartet made the Modern World Possible

It is widely acknowledged that four men shaped our 20th century world:

- **Albert Einstein**, one of the greatest minds of the 20th century. *Time* magazine: “Person of the Century. He was the pre-eminent scientist in a century dominated by Science.”
- **Sigmund Freud**, the “Columbus of the human mind.” In 1930, Freud received the Goethe Prize “in appreciation of his contributions to psychology and German literary culture.” Three years later the Nazis took control of Germany and Freud’s books were burned. “What progress we are making,” the founder of psychiatry quipped. “In the Middle Ages they would have burned me. Now they are content with burning my books.”
- **Karl Marx**, who cried out, like a Jewish Prophet of Biblical times, on behalf of the downtrodden people of the earth.
- **Charles Darwin** who developed the theory of evolution.
- Three of the four – Einstein, Freud and Marx – were Jewish.

“No thoughtful man can doubt the fact that Jews are, beyond all question, the most formidable and the most remarkable race which has ever appeared in the world.”

– Winston Churchill

Einstein discovered the most fundamental scientific premises of the century. His breakthrough followed scientific triumphs by three other Jews – Hermann Minkowski, discoverer of “the four-dimensional time continuum,” Tullio Levia-Cita, who identified “absolute calculus” and Albert Abraham Michaelson, who determined the speed of light (and was the first American to win a Nobel Prize).

The entire world of modern communications – from computers to the internet – largely originated in the fertile minds of Jews.

Dr. Robert E. Kahn was awarded the National Medal of Technology by President Bill Clinton for his development (with Vinton G. Cerf) of the common computer language “that gave birth to the Internet.”



*Dr. Kahn
originated the concept of the Internet*

Other giants whose work helped shape sophisticated 21st century communications include:

- **Max Newman** (originally Neumann) conceived Colossus, the giant primitive early computer used to break Nazi codes during World War II.
- **Michael Dell** started Dell computers from his dorm bedroom.
- **Sergey Brin** co-founded Google.
- **Philippe Kahn** invented the camera telephone.
- **Jonathan Rubinstein** invented the iPod.

“Tel Aviv has been rated as one of the top 10 high technology cities in the world. Israel is responsible for creating and exporting a great number of technological advances in computers.”

- Lehman Brothers, New York.



Tel Aviv – a world-class centre of creativity

Other Jewish scientists and inventors made breakthrough discoveries:

Lise Meitner, a Jewish scientist, discovered that splitting the atom released a tremendous amount of energy, opening the doors to the Atomic Age. (As a woman, Meitner was not allowed to use university laboratories but her partner, Otto Hahn, built her a lab in a woodworking shop. They worked together for more than 30 years and during that time, neither addressed the other by first name, nor did they lunch together.)

When Nazis menaced her, Hahn gave Meitner a diamond ring to bribe her way into the Netherlands.



Lise Meitner opened the doors to the Atomic Age.

She spent the remainder of her working career in a poorly-paid position in Sweden – rejecting the idea of being involved in the manufacture of an atomic bomb.

The Double Helix (DNA) was discovered by the British scientist **Rosalind Franklin** whose research was “borrowed” by Watson and Crick to win a Nobel Prize. Neither man acknowledged their debt to Franklin. Two books later acknowledged that she had discovered the double helix.

Vitamins were discovered, and named, by **Casimir Funk**. (*Hutchison Encyclopedia*).

Chemotherapy was **Paul Ehrlich**'s stupendous contribution to medical science. (Awarded 1908 Nobel Prize in Physiology or Medicine.)



Sir Ernest B. Chain identified Penicillin.

Penicillin was identified by **Sir Ernest B. Chain**, a refugee from Hitler's Germany. (Awarded 1945 Nobel Prize in Physiology or Medicine). Two other scientists – Fleming and Flory – were made Nobel Laureates, and knighted in 1945 – even though it was Chain who defied orders and identified the value of penicillin. He was knighted in 1969 – 24 years later!

Chain arrived in London with ten pounds in his pocket, confident that the Germans would toss Hitler out in short order. His mother and sister stayed behind – and were murdered.

The first experimental use of penicillin took place in an Oxford hospital where a policeman was dying from an infected cut. All the penicillin in the world, a teaspoonful, was administered and he recovered!

Chain's son Daniel is currently working on technologies for the treatment of Alzheimer's and other neurological conditions. He earned his PhD in biochemistry at Israel's Weizmann Institute.

The birth control pill was the discovery of **Gregory Goodwin Pincus** (with Drs. M.C. Chang and John Rock).

Discovering Aspirin

Aspirin was discovered by a German Jew, **Charles Gerhardt** and the first successful synthesis of pure acetylsalicylic acid was by **Arthur Echengrun**.

The microprocessing chip, the heart of our computerized world, was co-invented by **Stanley Mazor** (and two associates)

The first effort to halt the spread of polio emanated from the research of **Dr. Jonas Salk**.

A second, more formidable vaccine, came from the laboratories of **Dr. Albert Sabin**.

One of the most prominent victims of polio was US President Franklin Delano Roosevelt. The President met with the Jewish comedian **Eddie Cantor** to discuss how to raise money for



Polio affected tens of thousands until two Jewish scientists conquered it.

research into the disease. While Roosevelt talked about huge sums, Cantor was more down to earth. “Many more people could give a dime,” said the comic. Roosevelt laughed and said “we’ll call it The March of Dimes.”

The result was the funding of research into poliomyelitis.

Streptomycin (and the world of antibiotics) was the discovery of **Selman Waksman**. (Awarded 1952 Nobel Prize in Physiology or Medicine.)

The Holocaust perpetrated by Adolf Hitler, his Nazi Party and their numerous allies, undoubtedly robbed humankind of a great potential contribution to global progress.

The flight of Jews (and other liberal-minded individuals) from Hitler’s Europe, brought about a change in the language of science from German to English. Some 40 Jewish Nobel Laureates fled to the United States and Britain. The medical centres in Berlin and Vienna lost nearly half of their physicians and more than 50% of their medical school faculties.

On the eve of the Holocaust, Jews made up slightly less than 1% of the population of Germany. But 16% of its practicing lawyers were Jewish, 10% of its doctors and dentists were Jewish.

A Defiant Ben Gurion

David Ben Gurion's magnificent gift to humankind was his courageous declaration of the rebirth of Israel despite the determination of its Arab neighbors to destroy what the world knew to be the homeland of the Jewish People.

He gave to the world an extraordinary national presence:

Israel today is the only democracy in the Middle East – 2nd in the entire world in the field of technology – 2nd in the world in education – 4th in the world in science. The only Arabs in the Middle East living in freedom are in Israel – and a Pew Survey shows they know it.

Israel, although not granted a moment of peace by its hostile neighbors, leads the world in its proportion of scientists and technicians in the work force – 145 out of every 1,000 compared to the United States 85, and 70 in Japan.

Tiny Israel has 4,800 scientists; China with 200 times greater population has 2,800.

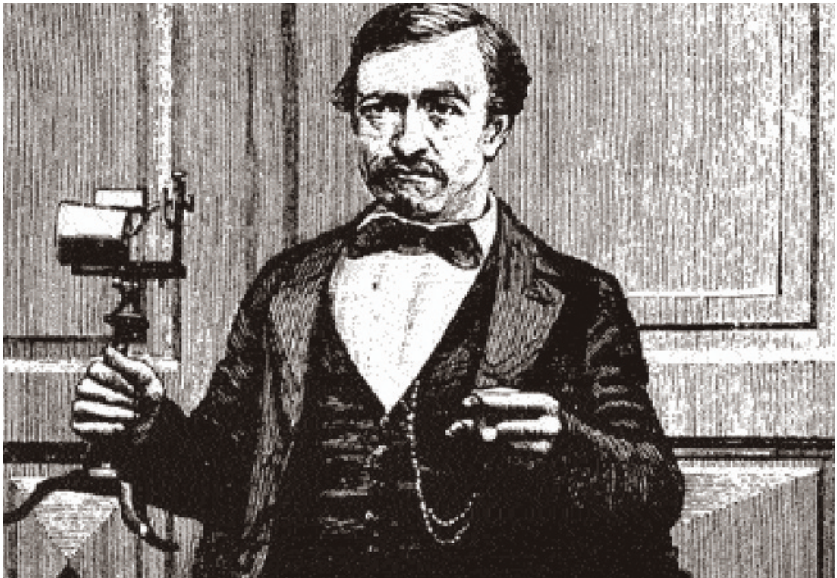
Some other breakthroughs by Jews

Charles Adler – the traffic light. Granted 60 patents in his lifetime, he invented a traffic-activated signal light. When the driver honked his horn, the light changed.

Louis Blaustein, with his son **Jacob**, opened the first drive-in filling station, invented the first visible gasoline pump and developed the first anti-knock fuel.

Laszlo Biro – the ball point pen, 1938. (*Encyclopedia Britannica*)

Johann Philip Reis created the telephone and it was made a working instrument by **Emile Berliner** (not Alexander Graham Bell). Bell paid Berliner \$50,000 for the right to use his mouthpiece and undulating coil. Furthermore, Berliner also invented the gramophone, flat record, first recording studio, microphone, radial aircraft engine, concert hall sound-absorbing panels and parquet flooring.



The first “telephon” – invented by a Jewish schoolmaster Johann Reis

Sylvan Goldman's invention – the shopping cart.

Peter Goldmark – colour TV.

Al Gross – cell phone, walkie-talkie. Gross, who was from Toronto, was a passenger, at age ten, on a Great Lakes steamboat. The communications officer put the boy on his lap and showed him some of the intricacies of radio communications. Hooked, Gross devoted his life to developing sophisticated communications devices.

Arthur Korn – the fax. “Professor Korn has triumphantly succeeded in transmitting portraits over long distances by wire.” – *The New York Times*, February 24, 1907.

Levi Strauss – the ubiquitous “jeans.” 1873. (*Encyclopedia Britannica*). Strauss' brothers, learning of the Gold Rush in California, loaded their youngest brother with canvas and sent him on the long voyage to the western United States – feeling that the young man could sell the canvas for tents in the gold



Levi Strauss' Jeans.

fields. But, after weeks at sea, Strauss found that the miners already had made arrangements for shelter. He was stuck with mounds of canvas. The solution came when a miner complained about the fact that his trousers tore easily when he put gold nuggets into the pockets. Strauss began making canvas trousers, with reinforced (rivets) pockets. The Strauss “denims” – after the French name for the cloth he used – became the best-selling trousers in the world.

Abraham Stern – the adding machine.

Prominent Jews in the field of aviation included:

Marcel Dassault, founder of Dassault Aviation – a leading designer of fighter aircraft.

Mikhail Gurevich – the “G” in MIG.

Ben Rich of the Lockheed Skunk works, who designed the SR-71 Blackbird spy plane and was lead designer of the F117A Stealth fighter.

Jack Steiner was the Chief designer for Boeing in the development of the passenger planes 707, 727, 737 and 747.

And a little boy named **Harry Halton** was inspired to design aircraft after his father took him, in Pilsen, Czechoslovakia, to see aviator Charles Lindberg and his “Spirit of St. Louis” – used in the first solo flight across the Atlantic Ocean. Halton Pere asked his son “Do you want to fly aeroplanes?” “No,” the boy responded, “I want to design them.”

Harry Halton was sent to England to study just as the Nazis were seizing control of Czechoslovakia.

The family couldn’t send money to London, so Harry received shipments of Pilsen beer and used them to pay for his rent, his meals and his tuition.

After working on World War II aircraft, he moved to Montreal where, ultimately, he became chief designer at Canadair.

Requiring “minor” surgery for a bad back, Halton emerged paralyzed from the waist down.

At that difficult moment, Harry’s boss, Fred Kearns, visited him and announced “We need your help.”

“I’m sorry,” Halton responded politely, “but I’m busy dying.”

From his hospital bed, and later from a motorized chair, Harry Halton designed the Challenger business jet which was stretched to become the RJ – Regional Jet. Both were great successes in the world of aviation.

Triumph in the Hallowed Nobel Halls

The extraordinary and disproportionately large Jewish contribution to human progress may be further measured by their record of winning Nobel prizes. Since the Prize was created, in 1902, some 750 have been awarded and 158 (an astounding 20%) have gone to Jews. The 13,000,000 Jews represent only one-fifth of 1% of the world's population.

Jews have won 50 Nobels in physics; 32 in chemistry, 24 in economics, 53 in the medical sciences. Furthermore, dozens of other Laureates, were not Jewish by definition because they had a Jewish father.

Only 40 Nobel Prizes were awarded to women and seven of these were Jewish. In addition, **Lise Meitner** and **Rosalind Franklin** should have been so honoured.



The Nobel Prize Ceremony in Stockholm. Sweden

The same remarkable record is apparent in the awarding of other prestigious awards:

- Jews have won 24% of the Kyoto Prize
- 33% of the Wolf Foundation Prize
- 38% of the US National Medal of Science.

In the cutting-edge world of information technology, Jews have won 29% of the ACM Turing Awards in Computer Science, 35% of the IEEE C. Shannon Award in Information Theory and 42% of the John von Neumann Theory Prize in Operations Research.

Carl Koller invented local anesthesia.

Alfred Einhorn discovered novocaine.

Oskar Minkowski (with **Joseph von Merling**) discovered that pancreatic dysfunction is the cause of diabetes (leading to the isolation of insulin by Drs. Banting and Best).

Tadeus Reichstein isolated cortisone.

The research of **Sir Bernard Katz** and **Julius Axelrod** led to the development of a class of anti-depressants including Prozac, Zoloft and Paxil. Axelrod was also the co-developer, with Bernard Brodie, of the pain reliever acetaminophen (Tylenol).

Shepard Shapiro developed Warfarin (Coumadin) the most commonly used anticoagulant for the prevention of heart attack and strokes.

Cancer chemotherapy was invented by **Louis Goodman**, **Alfred Gilman** and **Sidney Farber**.

Gertrude Elion co-developed 6-mercaptopurine which led to cures for most forms of childhood leukemia, and also co-developed the immunosuppressant that made organ transplants possible (other than identical twins).

Elion, as a girl, was horrified to see her beloved grandfather wasted away by disease and committed herself to finding pharma-



Nobel Laureate Gertrude Elion revolutionized pharmaceutical research.

ceutical breakthroughs. (Awarded 1988 Nobel Prize in Physiology or Medicine).

Jerome Horwitz, Samuel Broder and Irving Segal developed AZT, used in the treatment of AIDS.

Marshall Nirenberg broke the genetic code.

Stanley N. Cohen (and **Herbert Boyer**) co-invented gene-splicing, opening up a new field of genetic engineering, 1973. (*Encyclopedia Britannica*)

I.I. Rabi discovered nuclear magnetic resonance – the basis for the MRI diagnostic imaging technique.

Basil Hirschowitz invented the flexible endoscope, revolutionizing surgery.

Samuel Blum (with **Rangaswamy Srinivasan** and **James Wynne**) co-invented LASIK eye surgery.

Paul M. Zoll invented the implantable cardiac pacemaker and the defibrillator. 1952. (*Encyclopedia Britannica*)

Henry Heimlich invented the Heimlich Maneuver.

And **Hyman Rickover** created the nuclear submarine, and the nuclear-powered aircraft carrier – giving the United States clear dominance in almost every corner of the world.

Irish author **Thomas Cahill** in his *Gifts of the Jews* (Doubleday, 1998) wrote, “The Jews gave us the inside and the outside – our outlook and our inner life. We can hardly get up in the morning or cross the street without being Jewish. We dream Jewish dreams and hope Jewish hopes. Most of our best words, in fact – new, adventure, surprise, unique, individual, person, vocation, time, history, future, freedom, progress, spirit, faith, hope, justice – are the gifts of the Jews.”

Are Jews smarter than other people? And if so, why?

Charles Murray, the W. H. Brady Scholar at the American Enterprise Institute, has plunged deeply into this controversial question. Reviewing numerous studies, Murray notes that a 2006 article on “elevated Jewish IQ” in the *Journal of Biosocial Science*, contends that “elevated Jewish IQ is confined to the Ashkenazi Jews of northern and central Europe, and developed from the Middle Ages onward, primarily from 800 to 1600 C.E.”

Murray adds that “in the analysis of these authors, the key factor explaining elevated Jewish intelligence is occupational selection.”

The author also examines the theory that higher Jewish IQ’s stem from the challenge of reading Jewish holy literature: “The Torah and the Hebrew prayer book are not simple texts; even to be able to read them mechanically requires fairly advanced literacy. To study the Talmud and its commentaries with any understanding requires considerable intellectual capacity.”

And a Debate about Israeli achievements

The announcement in 2011 that Israel's Daniel Shechtman had won the Nobel Prize in Chemistry touched off a debate. *American Magazine* noted: "Israel's success in producing Nobel Laureates is part of a larger trend that demands explanation. Continuing a century-old pattern, five of the 13 winners this year are Jewish. Indeed, Jews have long been wildly over-represented in Nobel and similar Prizes."

The magazine then quotes political scientist Charles Murray "In the first half of the 20th Century, despite pervasive and continuing social discrimination against Jews throughout the Western world, despite the retraction of legal rights, and despite the Holocaust, Jews have won 14% of Nobel Prizes in literature, chemistry, physics, and medicine/physiology. In the second half of the 20th century, when Nobel Prizes began to be awarded to people from all over the world, that figure rose to 29%. So far, in the 21st century, it has been 32%. Jews constitute about 0.2% of the world's population.

And a telling footnote: In 1954, an IQ test in New York City's public schools identified 28 students with IQs over 170. Twenty-four of these students (85%) were Jews!

It is not only in the exotic research fields that Jews are prominent. While they represent only 2% of the US population, they make up 27% of the student bodies at Ivy League Universities, 26% of Kennedy Centre Honorees, 37% of Academy Award winning film directors and 51% of Pulitzer Prize winners in non-fiction.



Author Joe King (2nd from left) with Dr. Thomas Otto Hecht (right) in the Bar-Lev Line, along the Suez Canal, during the War of Attrition.

About the author

JOE KING is widely-known as an author, historian, journalist, broadcaster and speaker. He is best-known for his trilogy on Montreal Jewish history: *From the Ghetto to the Main*, *Baron Byng to Bagels* and most recently, *Fabled City*. This trio of books earned him the title “historian of Jewish Montreal” from Queen’s University historian Prof. Gerald Tulchinsky.

However, he has also explored the great gifts of the Jews to humanity in his internationally-acclaimed *The Jewish Contribution to the Modern World*. Most recently he researched and wrote three widely-distributed handbooks – *Mideast Deception*, *The Gifts of Israel* and *Makers of the Modern World*.

Mr. King has met and interviewed some of the major figures of modern history – ranging from Yuri Gagarin, the first man in space, to French General Charles de Gaulle and David Ben Gurion.

He has collected 35 awards during his long career, including the Liberty Television Documentary Award for a program on Adolf Eichmann; the prestigious Golden “D” of Dalhousie University and two awards from the Radio and Television News Directors Association.

He has visited the Middle East 19 times – often during conflicts – and had his closest call when a rooftop sniper targeted him in the Israeli-occupied Syrian city of Kuneitra. During the 1982 Israeli incursion into Lebanon, he sat on the steps of the Presidential palace in Beirut and watched as Israeli jets bombed PLO positions in the Lebanese capital.

One of his most striking moments came when he stood on Mount Nebo, in Jordan, where the Bible states Moses stood and looked down on the land he could never enter. In the area, there are many places called “Musa” – the Arab word for Moses.

Last – but not least – he is an honorary member of the crew of the US submarine *Halfbeak*!

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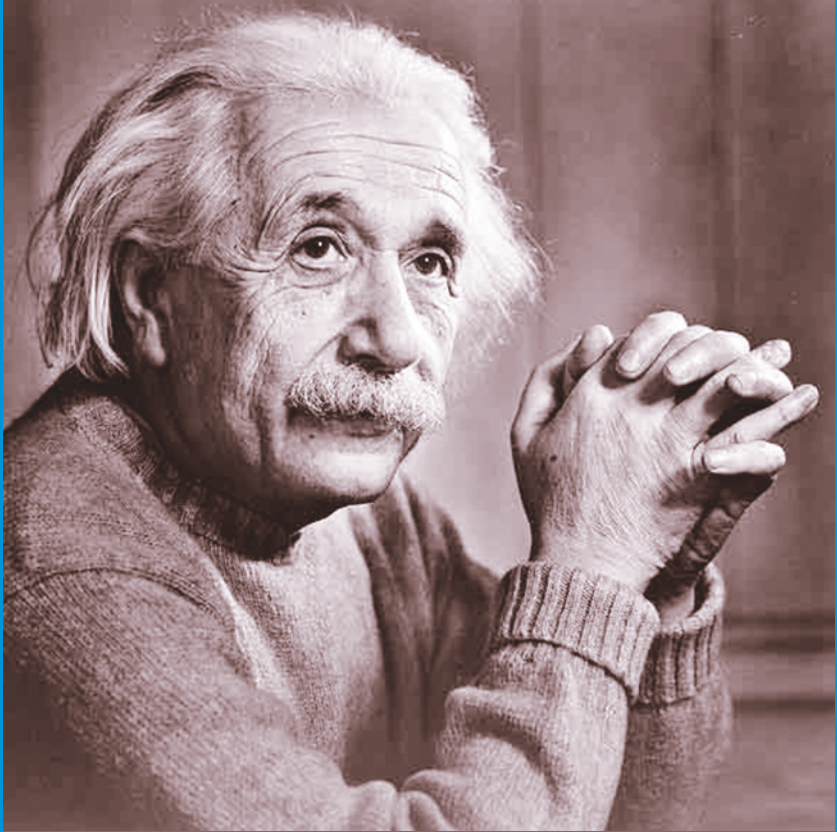
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Makers of the Modern World



It is widely acknowledged that four men shaped our 20th century world: Albert Einstein, Sigmund Freud, Karl Marx and Charles Darwin. Three of the four – Einstein, Freud and Marx – were Jewish.