

Hungary's innovative history

Success has many fathers, as the saying goes. In technological innovation, Hungary can claim to be father of more important discoveries than many other countries.

In January 2001 the journal Nature claimed that the 20th century was made in Budapest, Hungary's capital. The New York Times has commented that "Hungary has produced an immoderate number of Nobel Prize winners".

So why has Hungary produced so many important scientists and innovators who have given so much to the world?

Norbert Kroó, vice president at the Hungarian Academy of Sciences, says that the country's stormy history and its position trapped between warring countries meant that "average Hungarian families know that everything they have can be stolen from them but their brains".

Kroó also attributes some of the country's success in producing scientists and engineers to the complexity of its language, which equips people to think clearly about scientific and engineering issues. "The Hungarian language is very difficult but very logical, and the way that you think is determined by your mother tongue."

So what kind of inventions can be attributed to Hungarian excellence?

Leo Szilard realised that the division of one nucleus by fission could lead to a runaway effect that later became known as a chain reaction. His work, and that of Eugène Wigner and others, unlocked the atom and led to both atomic power and nuclear energy. Edward Teller, another Hungarian, would later become known as 'the father of the hydrogen bomb', for his work on a successor to the original fission bombs.

John Von Neumann, working at Harvard University in the 1940s, developed the scheme for organising the flow of instructions and data in a computer that is still in use more than 60 years later.

Dennis Gabor started his university studies in the electronic engineering faculty at Budapest Technical University and ended up winning the Nobel Prize for physics for inventing holography, a way to record images in three dimensions.

Zoltán Bay invented the photomultiplier, used to make it possible to see in the dark.

David Gestetner invented the office photocopier.

László Biró invented the ballpoint pen.

Other Hungarians are said to have invented the helicopter, the carburettor, electric trains, modern hydrodynamics, the telephone exchange, and a new form of geometry that is said to have underpinned Einstein's thinking.

Later in the 20th century, Charles Simonyi was an early investor in Microsoft and later became a space tourist, while Ernő Rubik created a puzzle cube that gripped entire nations' imaginations for years. More recently two Hungarians have invented a new three-dimensional object, known as the gömböc, which is the first homogenous object with one stable and one unstable equilibrium state.

Links

Norbert Kroó

[http://www.mta.hu/index.php?id=851&no_cache=1&sword_list\[\]=kroo](http://www.mta.hu/index.php?id=851&no_cache=1&sword_list[]=kroo)

Kroó's presentation from the EIRMA annual conference (requires log-in)

<http://www.eirma.org/f3/showthread.php?t=7626>

Hungarian Academy of Sciences

<http://www.mta.hu/index.php?id=406&type=0>

Leo Szilard

<http://www.britannica.com/EBchecked/topic/579362/Leo-Szilard>

Eugène Wigner

<http://www.britannica.com/EBchecked/topic/643423/Eugene-Paul-Wigner>

Edward Teller

<http://www.britannica.com/EBchecked/topic/586350/Edward-Teller>

John Von Neumann

<http://www.britannica.com/EBchecked/topic/632750/John-von-Neumann>

Dennis Gabor

<http://www.britannica.com/EBchecked/topic/223190/Dennis-Gabor>

Zoltán Bay

http://www.bzlogi.hu/bzaka/bzaka_angol.head.page?nodeid=293

David Gestetner

http://en.wikipedia.org/wiki/David_Gestetner

László Biró

<http://tinyurl.com/laszlobiro>

Charles Simonyi

<http://www.charlesinspace.com>

Ernö Rubik

<http://www.rubiks.com/>

Gömböc

<http://www.gomboc.eu/site.php>

Hungarians in the history of communications

<http://www.itdh.com/resource.aspx?ResourceID=grcomm2>

Hungarians in the history of transport

<http://www.itdh.com/resource.aspx?ResourceID=GREAT21>

Hungarians in the history of medical sciences

<http://www.itdh.com/resource.aspx?ResourceID=greatmed>