

Greeks 'borrowed Egyptian numbers'

By Paul Rincon
BBC Science

The astronomers, physicists and mathematicians of ancient Greece were true innovators.

But one thing it seems the ancient Greeks did not invent was the counting system on which many of their greatest thinkers based their pioneering calculations.

New research suggests the Greeks borrowed their system known as alphabetic numerals from the Egyptians, and did not develop it themselves as was long believed.

Greek alphabetic numerals were favoured by the mathematician and physicist Archimedes, the scientific philosopher Aristotle and the mathematician Euclid, amongst others.

Trade explosion

An analysis by Dr Stephen Chrisomalis of McGill University in Montreal, Canada, showed striking similarities between Greek alphabetic numerals and Egyptian demotic numerals, used in Egypt from the late 8th Century BC until around AD 450.

Both systems use nine signs in each "base" so that individual units are counted 1-9, tens are counted 10-90 and so on. Both systems also lack a symbol for zero.

Dr Chrisomalis proposes that an explosion in trade between Greece and Egypt after 600 BC led to the system being adopted by the Greeks.

Greek merchants may have seen the demotic system in use in Egypt and adapted it for their own purposes.

"We know there was an enormous amount of contact between the Greeks and Egyptians at this time," Dr Chrisomalis told BBC News Online.

'Plausible' theory

Professor David Joyce, a mathematician at Clark University in Worcester, US, said he had not examined Dr Chrisomalis' research, but thought the link was plausible.

"Egyptians used hieratic and, later, demotic script where the multiple symbols looked more like single symbols," said Professor Joyce.

"Instead of seven vertical strokes, a particular squiggle was used. That's the same scheme used in the Greek alphabetic numerals."

Traditionally, the system is thought to have been developed by Greeks in western Asia Minor, in modern day Turkey.

Between 475 BC and 325 BC, alphabetic numerals fell out of use in favour of a system of written numbers known as acrophonic numerals.

But from the late 4th Century BC onwards, alphabetic numerals became the preferred system

throughout the Greek-speaking world.

They were used until the fall of the Byzantine Empire in the 15th Century.

The research is to be published in the journal *Antiquity*.

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