



## Jacquard's loom: machines controlled by cardboard

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*JIM AL-KHALILI:*

Jacquard's loom was a miracle of ingenuity.

You see, he designed a single machine which, without any alterations to its construction – its 'hardware' to use a modern term – could be programmed to weave any pattern a designer could think up.

In fact, it could produce a whole range of silk designs with barely a pause in production.

Jacquard had found the Holy Grail of weaving, and the secret was a simple punched card.

The punched card held within it the essence of the designs that the loom would weave.

When these punched cards were fed into the loom, they would act to lower and lift the relevant threads, recreating the pattern in silk.

Any design you could think of could be broken down and translated into a series of punch cards and could then be woven by the loom.

Information was being translated from picture to punch card to the finished fabric.

*DR DORON SWADE:*

It is a machine for weaving textiles – that's its task.

But there is nothing specific about what textile it should weave – that is contained in the information which is encoded on the cards.

So, if you like, the cards programme it – that is to say, instruct it what to do.

And this has huge resonances for what came later.