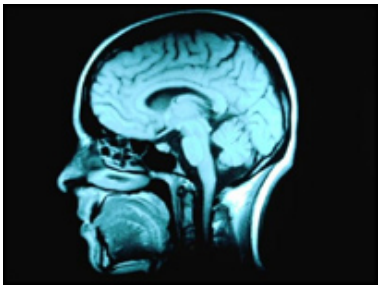
BBC NEWS | Health | Brain scan 'sees hidden thoughts'

Scientists say they can read a person's unconscious thoughts using a simple brain scan.



The scan picks up subliminal thought activity

Functional MRI scans plot brain activity by looking at brain blood flow and are already used by researchers.

A team at University College London found with fMRI they could tell what a person was thinking deep down even when the individual was unaware themselves.

The findings, published in Nature Neuroscience, offer exciting ways to probe the subconscious, said experts.

In the experiment, Dr Geraint Rees and Dr John-Dylan Haynes measured brain activity in the visual cortex - the part of the brain that deals with information sent by the eyes - while volunteers looked at different test objects on a computer screen.

By looking at the functional magnetic resonance imaging (fMRI) scan results, the scientists were able to predict what had been displayed on the computer screen better than volunteers themselves.

When two images were flashed in quick succession, the volunteers only consciously saw the second one and were unable to make out the first.

But the brain scans clearly distinguished the patterns of brain activity created by the "invisible" images.

Mind-reader

Similarly, a separate study by Japanese researchers, published in the same journal, found that when people were shown stripes tilted in different directions, there were subtle differences in the pattern of brain activity obtained by fMRI.

The scientists built a computer program to recognise these different patterns and found they could predict what direction stripes had been shown with remarkable accuracy.

When volunteers were shown a plaid pattern made up of two different sets of stripes but asked to pay attention to only one set, the program was able to tell which one the subjects were thinking about.

Dr Rees said: "This is the first basic step to reading somebody's mind. If our approach could be expanded upon, it might be possible to predict what someone was thinking or seeing from their brain activity alone."

Dr Adrian Burgess, from the department of cognitive neuropsychology at Imperial College London, said: "The technique is bringing out information that has not been available from MRI scans before.

"It could potentially be used to find out people's latent attitudes and beliefs that they are not aware of.

"You could use it to detect people's prejudices, intuition and things that are hidden and influence our behaviour."

He said it might be possible to dip into people's repressed memories or even see people's hidden fears and phobias.

"That's a long way off, but it is exciting."