

# Dream recording device 'possible' researcher claims

By **Pallab Ghosh** Science correspondent, BBC News



The researchers have developed a way to record higher brain activity

A US researcher says he plans to electronically record and interpret dreams.

Writing in the journal *Nature*, scientists say they have developed a system capable of recording higher level brain activity.

"We would like to read people's dreams," says the lead scientist Dr Moran Cerf.

The aim is not to interlope, but to extend our understanding of how and why people dream.

For centuries, people have been fascinated by dreams and what they might mean. In Ancient Egypt they were thought to be messages from God.

More recently, dream analysis has been used by psychologists as a tool to understand the unconscious mind. But the only way to interpret dreams is to ask people about the subject of their dreams after they had woken up.

The eventual aim of Dr Cerf's project is to develop a system which would enable psychologists to corroborate people's recollections of their dream with an electronic visualisation of their brain activity.

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## **"Start Quote**

It would be wonderful to read people's minds"

End Quote Dr Moran Cerf UCLA

"There's no clear answer as to why humans dream," according to Dr Cerf. "And one of the questions we would like to answer is when do we actually create this dream?"

Dr Cerf makes his bold claim based on an initial study which he says suggests that the activity of individual brain cells, or neurons, are associated with specific objects or concepts.

He found, for example, that when a volunteer was thinking of Marilyn Monroe, a particular neuron lit up.

By showing volunteers a series of images, Dr Cerf and his colleagues were able to identify neurons for a wide range of objects and concepts - which they used to build up a database for each patient. These included Bill and Hilary Clinton, the Eiffel Tower and celebrities.

So by observing which brain cell lit up and when, Dr Cerf says he was effectively able to "read the subjects' minds".

## **Dream catcher**

He admits that there is a very long way to go before this simple observation can be translated into a device to record dreams, or dream catcher. But he thinks it is a possibility - and he said he would like to try.

The next stage is to monitor the brain activity of the volunteers when they are sleeping.

The researchers will only be able to identify images or concepts that correlate with those stored on their database. But this data base could in theory be built up - by for example monitoring neuronal activity while the volunteer is watching a film.

But Dr Roderick Oner, a clinical psychologist and dream expert, believes that while this kind of limited visualisation might be of academic interest - it will not really help in the interpretation of dreams or be of use in therapy.

"For that you need the entire complex dream narrative," he said.

Another difficulty with the technique is that to get the kind of resolution needed to monitor individual neurons, subjects had to have electrodes surgically implanted deep inside their brain.

In the Nature study, the researchers obtained their results by studying patients who had electrodes implanted to monitor and treat them for brain seizures.

## **Translating thoughts**

But Dr Cerf believes that sensor technology is developing at such a pace that eventually it might be possible to monitor brain activity in this way without invasive surgery. If this were to happen it would open up a range of possibilities.

"It would be wonderful to read people's minds where they cannot communicate, such as people in comas," said Dr Cerf.

There have been attempts to create machine interfaces before that aim to translate thoughts into instructions to control computers or machines.

But in the main these have tried to tap into areas of the brain involved in controlling movement. Dr Cerf's system monitors higher level areas of the brain and can potentially identify abstract concepts.

"We can sail with our imaginations and think about all the things we could do if we had access to a person's brain and basically visualise their thoughts.

"For example, instead of just having to write an email you could just think it. Or another futuristic application would be to think a flow of information and have it written in front of your eyes."

Professor Colin Blakemore, a neuroscientist at Oxford University, believes that it is quite a jump from the limited results obtained in the study to talking about recording dreams.