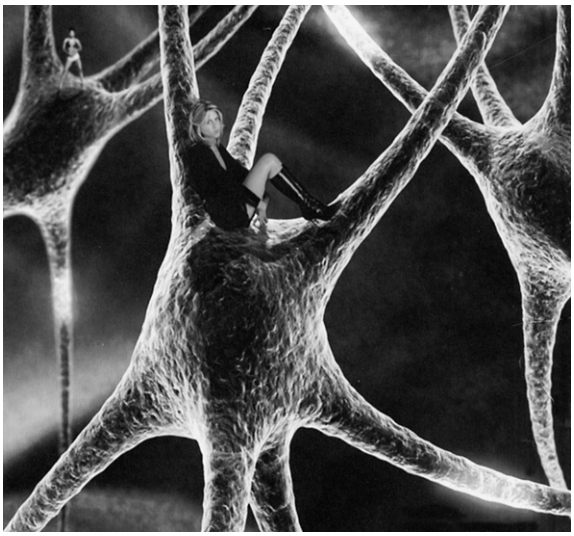
What Makes
Your Brain Cells Tick?

The work of a University of Leicester scientist, Dr Rodrigo Quian Quiroga, has been cited as one of the top in the world for 2005. His groundbreaking international research into how the brain responds to images was one of the top 100 international science stories of 2005 by *Discover* magazine and challenges the beliefs of most neuroscientists.
We all know the images that fire our imagination, whether they are of film stars, musicians, actors or a monument or feature of landscape with special associations for us.

Scientists have long thought that recognition of such concepts was the result of huge numbers of neurons (nerve cells) reacting to very basic details – such as colour of hair, width between the eyes, height – fragments of information which all combine to recognise a complex pattern or concept.

Research by a University of Leicester bioengineer, however, suggests that this is not the case and that a single neuron is able to respond to an entire concept. The visual representation of a person will be achieved in an abstract way by single neurons and not by a huge neural population, as science previously thought. To recognise a person, for example *Friends* star Jennifer Aniston, does not require a whole army of neurons to each register minute pieces of detail like pixels on a television screen. Lots of neurons will fire but just one will recognise the whole concept.

__2__, these 'intelligent' neurons are able to respond to the name of the film star and are fired through association. In some individuals the 'Aniston' cell fired when an individual saw an image of Lisa Kudrow – Aniston's co-star on *Friends* – because they associated these two people with one another. Associations are different for each person. For one individual a neuron might fire when they see the Eiffel Tower and the Tower of Pisa, whereas another person might associate the Eiffel Tower with the Colosseum, depending on their experiences and memories.



"Aniston" cell

This study is important in understanding how memory is created and how we gain our understanding of the world.

Graduates Review, 2006

Tekst 1 What makes your brain cells tick?

"The work … for 2005." (eerste zin)

1p **1** Wat was de ontdekking van Dr Rodrigo?

1p **2** Which of the following fits the gap in the text?

A For example
B Furthermore
C Nevertheless
D Therefore