

Mirror neurons control erection response to porn

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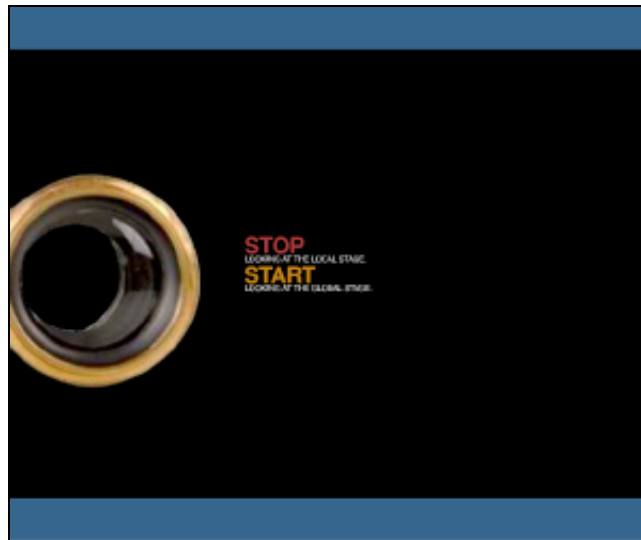
Alison Motluk

You don't have to be a scientist to observe that pornographic images lead to erections in men. But you would have to be one to show those images to volunteers while meticulously measuring the volume of response in the brain and penis.

Harold Mouras, at University of Picardie Jules Verne in Amiens, France, and his colleagues wanted to understand the cerebral underpinnings of visually-induced erections.

They suspected there might be a role for mirror neurons, a special class of brain cell that fires both when people perform an action and when they observe it being performed.

The researchers invited eight young men into the lab and asked them to view three types of video clips. Along with late-night fishing documentaries and snippets of Mr Bean, the volunteers got to see erotic videos of men stroking naked women, enjoying fellatio and engaging in intercourse.



Erection command?

While the volunteers watched the movies, the researchers watched their brains using functional magnetic resonance imaging (fMRI).

They also kept tabs on the tumescence of the other target organ, using a hand-crafted "penile plethysmograph" – essentially an airtight tube in which the enlarging penis causes measurable pressure changes.

As expected, all the subjects got erections and many parts of the brain lit up.

Interestingly, the volume of the erections correlated with the strength of activation in a part of the brain called the pars opercularis, which is known to display mirror neuron activity. Even more intriguing, the brain activation, say the researchers, precedes the penile response.

"The mirror neurons are like the command," says Mouras. "The activation comes before the erection."

'Bold' study

The study, says Mouras, is the first to suggest that mirror neurons are involved not only in observed actions, but in the "automatic" responses to those observations – in this case, erection.

Vilayanur Ramachandran, at the University of California at San Diego, who also studies mirror neurons, calls it a "bold" study, and congratulates the group on defying the taboo on studying human sexual physiology.

While he thinks it is perfectly plausible that mirror neurons play a role in how porn turns us on, he says more needs to be done to understand what that role is. For a start, he says, a large number of the brain's structures seem to be involved, not just the pars opercularis, and the interaction between these regions in response to porn is unclear.

"It doesn't give you an experimental lever into the problem," he adds.

And while Ramachandran agrees that the timing of mirror neuron activation and erection is probably critical, fMRI isn't accurate enough to show clearly what is going on with these brain regions over such short time frames.

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