

SUBSCRIBE TO NEW SCIENTIST

Select a country

Subscribe

NewScientist

search New Scientist

Go

Log in

My New Scientist

Home News In-Depth Articles Blogs Opinion TV Galleries Topic Guides Last Word Subscribe Dating Look for Science Jobs

SPACE TECH ENVIRONMENT HEALTH LIFE PHYSICS&MATH SCIENCE IN SOCIETY

New Scientist TV



Friday Illusion: How your mind can animate an image

15:26 4 May 2012

Friday Illusion Illusions Psychology

Sandrine Ceurstemont, editor, New Scientist TV

Our other blogs

- Short Sharp Science
- One Per Cent
- New Scientist TV
- CultureLab
- Big Wide World

Bookmark&share



Categories

- Aerospace
- Animation
- Art
- Best of 2010
- Best of 2011
- Born to be Viral
- Competitions
- Dance
- Environment
- Events
- Exclusives
- Exhibitions
- Film
- Friday Illusion
- Gaming
- Hacking
- Health
- Illusions
- Interviews

Seeing an object move doesn't actually mean that it's moving. In this video, the psychedelic patterns might look like they're rotating, but pause the video and you'll see that they are actually static images.

This striking illusion, created by visual perception researcher [Akiyoshi Kitaoka](#) from Ritsumeikan University in Japan, is commonly known as the 'rotating snakes' and exploits a peripheral vision effect where motion is perceived in one direction due to gradual changes in brightness of segments in the pattern. Rounded edges also seem to enhance the illusion.

The brain trick was thought to occur when our eyes slowly move across the image. But now a new study by [Susana Martinez-Conde](#) from Barrow Neurological Institute in Phoenix, Arizona, and colleagues is uncovering that superfast eye movements are responsible for the phantom motion.

Since the effect isn't perceived continuously, the team tracked eye movements of volunteers just before they started to see rotation. They found that people usually blinked, or moved their eyes so quickly they didn't realise it, right before their brain was tricked. Conversely, their eyes were stable when they didn't perceive motion.

Gradual changes in contrast, such as those in the rotating snakes pattern, are rarely seen without actual motion, perhaps suggesting why our brain is confused. "As far as I know, there are no examples in nature of animals using camouflage or other patterning strategies to evoke this illusion," says Martinez-Conde.

If you enjoyed this post, watch [hearts with a phantom pulse](#) or see [how you can brighten an image by moving your head](#).



tags [animate](#) [brain](#) [illusion](#) [image](#) [rotating snakes](#)

Post a comment

[Sign in](#) to comment, or comment anonymously.

Name

Email Address

URL

Remember me?

Comments (You may use HTML tags for style)

3 Comments

All comments should respect the [New Scientist House Rules](#). If you think a particular comment breaks these rules then please [let us know](#), quoting the comment in question.

Celeste on May 4, 2012 5:49 PM

If you focus on one circle at a time, the motion of that circle stops. If you *soften your gaze* and encompass the *entire* image within your gaze, the motion stops. Try it.

Matt Mahoney on May 4, 2012 6:02 PM

I think this works because response time of retinal cells is different for red and blue light. When you blink or move your eyes, some parts of the objects appear before others, so the objects appear to move.

Simon on May 4, 2012 9:05 PM

I'm a bit confused why this was a video... why not just have the three images in better quality as jpgs?

- Life
- Live
- Music
- Nature
- One
- One-Minute Math
- One-Minute Physics
- Physics and Math
- Psychology
- Robotics
- Seeing Relativity
- Space
- Technology
- Television
- Time-lapse Tuesday
- Wildlife



Twitter updates

Recent comments

By Simon

Friday Illusion: How your mind can animate an image:

I'm a bit confused why this was a video... why not just have the three images in better quality...

By Matt Mahoney

Friday Illusion: How your mind can animate an image:

I think this works because response time of retinal cells is different for red and blue light. ...

By Celeste

Friday Illusion: How your mind can animate an image:

If you focus on one circle at a time, the motion of that circle stops. If you soften your gaze...

[Recent entries](#)

[Monthly archive](#)