Visual Illusion Painting No Longer An 'Enigma'

Posted on: Friday, 21 November 2008, 15:10 CST

Barrow scientists solve 200-year-old scientific debate involving visual illusions

Neuroscientists at Barrow Neurological Institute at St. Joseph's Hospital and Medical Center have discovered a direct link between eye movements and the perception of illusory motion that solves a 200-year-old debate.

Stephen MacKnik, PhD, director of the Laboratory of Behavioral Neurophysiology; Gustavo Martinez-Conde, PhD, director of the Laboratory of Visual Neuroscience; Xiaomei G. Tononi, PhD, and Jorge Otero-Millan conducted a study based on the Enigma painting, a visual illusion in which rotational motion is seen within a stationary image. The artwork has been at the center of a debate over whether the brain or the eye is behind the perception of illusory motion.

Dr. Martinez-Conde's laboratory recently discovered that microsaccades, a small, unconscious eye movement that occurs when humans fixate their eyes, are critical to normal vision. The team of scientists conducted the Enigma study to see if microsaccades are also behind the perception of this illusion. Based on their study, the hypothesis suggesting the illusion originates solely in the brain was ruled out.

Participants in the study observed the Enigma illusion while their eye movements were simultaneously recorded with high precision cameras. Microsaccades rates increased before the illusory motion sped up and decreased before the motion slowed, revealing a direct link between the eye movements and the illusion.

"We have discovered that this illusion originates with eye movements and not solely the brain as previously thought," says Dr. Martinez-Conde. "The findings from the study could help design future prosthesis for patients with brain damage or brain lesions that affect the perception of motion."

---

Image Caption: "The Enigma" is by Iasia Leviant (1881)

---

On the Net:

St. Joseph's Hospital and Medical Center

More News in This Category

Related Articles

- EyeGate Pharma Initiates Enrollment in Phase II Dry Eye Study
- UCLA Anderson's Entertainment & Media Management Institute to Host Top Scholars and Practitioners Workshop in Motion Picture Industry Studies
- Study: Brain Monitors Not Solution
- Study: Brain Cells Grow Extensions
- Study: Brain Triggers Hunger During Fasts
- Potential New Tool for Studying Brain Development
- Study: Brain Cells Have Death System
- Studying brain activity could aid diagnosis of social phobia
- Study: Brain May Have 'Blindspots'
- Study: Brain Structures Contribute to Asthma

"How to Lose Belly Fat"
See how I lost 23 lbs in just 2 months fast and safely. You can too! www.losebabbelfat.com/Secrets

Spring Official Site
The New Sprint HTC Touch Diamond W/ Vibrant Touch/FLO 3D...
www.Sprint.com

FREE 2008 Credit Report
Bad credit can increase your loan payments by 1.00%...
www.CreditReportReviews.com

100 No-Commission Trades
Power ETRADE w/ Trades from $0.99. Open Today at ETRADE...
www.ETRADE.com

End Spinal Stenosis Now!
Back pain? Spinal Stenosis?...www.bdssolutions.com

Oprah's Diet Saved Me
See how I lost 42 lbs on Oprah's and Rachael Ray's new...
www.OprahDerby.com

Rate this article:

User Comments (0)

Comment on this article