Look closely. High-contrast objects appear to move faster than low-contrast ones.

Credit: Akiyoshi Kitaoka, Ritsumeikan University, Japan / Alan Stocker, NYU

Thompson effect, they argued.

Now Simoncelli and postdoc Alan Stocker have confirmed their theory with a real-life experiment. They asked each of five people to judge which of a pair of gratings on a computer screen appeared to be moving faster. Each person did this about 6000 times with the speed and contrast levels of the gratings changing from one trial to the next.

Stocker and Simoncelli then used Bayesian math to work backwards from each person's speed perceptions to determine what his or her expectations must have been. They confirmed that people expect slow movement over fast, and the team measured just how much more probable people expect slower speeds to be than faster ones. Simoncelli, whose findings appeared online Sunday in *Nature Neuroscience*, says that the findings might someday be used to devise better treatments for stroke victims who have trouble seeing motion or to build better driver-defense systems.

Matteo Carandini, a computational neuroscientist at Smith-Kettlewell Eye Research Institute in San Francisco, California, thinks the work's greatest import may be for basic research. "This opens the door" to finding the location of speed perception in the brain, he says.

Related sites
- Stocker's page
- Visual illusions
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http://sciencenow.sciencemag.org/cgi/content/full/2006/321/2