



Eye Teaser Caltech biologist Markus Meister's research focuses on image processing in the retina. At TEDxCaltech, his presentation featured the brain—or eye—teaser above. The tile with a dot on the left looks much darker than the tile on the right, but they are actually the same color. The illusion results from a process called lateral inhibition, which arises in the retina and elsewhere in the visual system. Here's how it works: the retina determines the relative darkness or lightness of an image by considering the local intensity at a particular spot minus the average intensity in the surrounding region. Thus, because bright tiles surround the dotted tile on the left, the retina reports on it as being dark when it sends info to the brain. Since dark tiles surround the dotted tile on the right, the retina "sees" and reports that tile as being relatively bright. Says Meister: "You can frequently identify the effects of image processing by considering simple experiments on perception, such as these kinds of visual illusions."