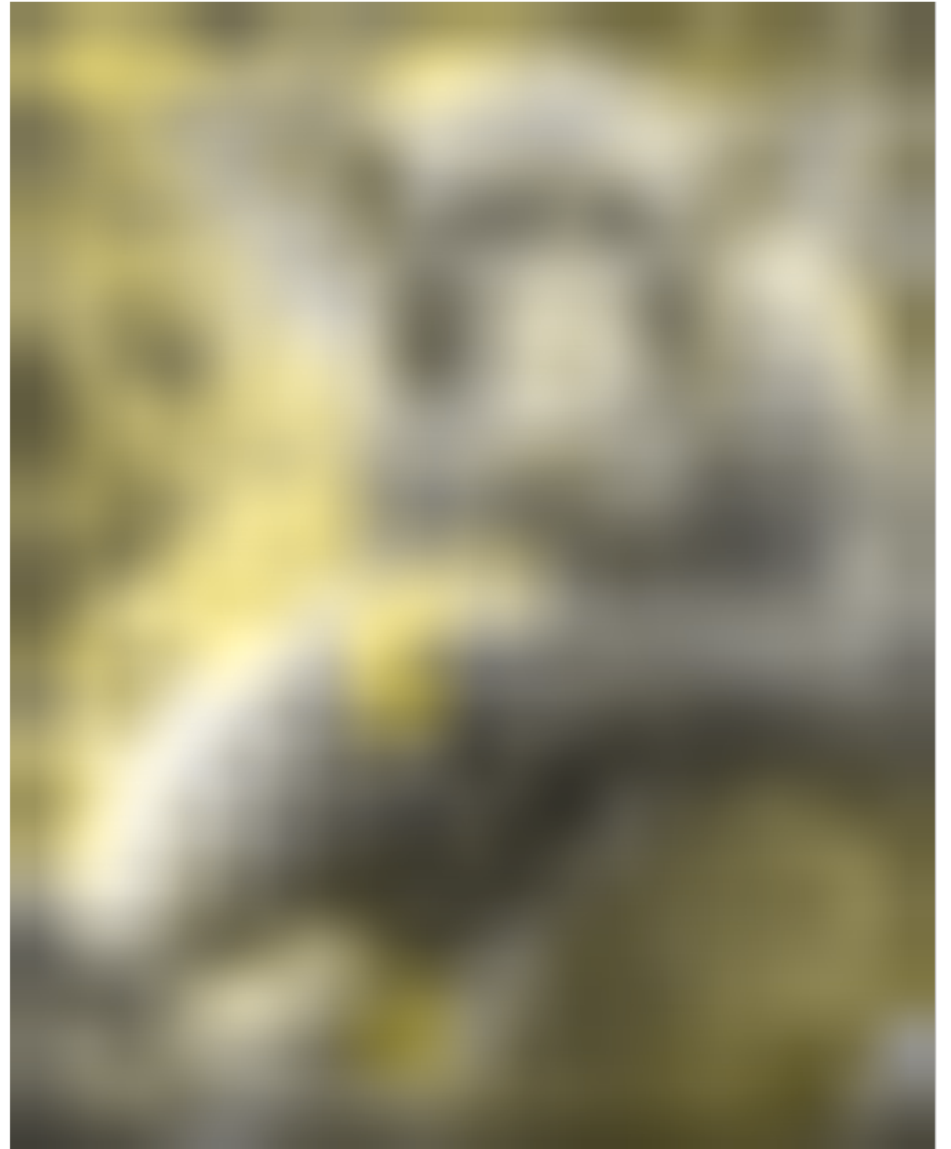


Primate Vision



Mouse Vision



Comparison of cone responses in the primate and mouse retina to the same image. The optical quality of images in the mouse eye is based on: de la Cera et. al. (2006) Optical aberrations in the mouse eye. *Vision Research*, 46, 2546-2553. Cone sampling density in the mouse eye is based on: Jeon, et al. (1998) Major cell populations in the mouse retina, *Journal of Neuroscience*, 18, 8936-8946. Schematic eye based on Remtulla & Hallet (1985) A schematic eye for the mouse, and comparisons with the rat. *Vision Research*, 25, 21-31.

Note that these images were created to reflect what each species would “see” at a viewing distance of 2.4 meters. To simulate what each species would see, size the photograph so that the index finger at arm’s length covers the white line segment in the left image.

Procedure: We simulated the optics of the mouse eye in order to obtain the image that would be formed on the mouse’s retina. We then sampled that image with a mosaic of cone photoreceptors having the spacing of the those in the mouse retina, and interpolated the resulting sampled image. We then removed the contribution of the long wavelength (L cones), because the mouse (like most mammals) has only middle (M) and short (S) wavelength cones. We did this approximately by converting the image to the *Lab* color space and then removing the *a* (red-green) channel.

Rhesus macaque monkeys average about 21 inches (53 cm) in length, and the face length is about 1/5 of that (10.5 cm). In the image, the face is about 2.5 deg in visual angle. Thus, the viewing distance corresponds to about 2.4 meters.

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