

CONSIDERING VISUAL SYSTEMS WHEN EXPLORING PRIMATES AND COLOR

M. Stevens¹, J.P. Higham²

¹*University of Cambridge, Cambridge, UK.* ²*University of Chicago, Chicago II, USA.*

Presenter's Email: ms726@cam.ac.uk

Primates encounter a wide variety of colorful stimuli in their environment, from the colors of food types such as fruits and leaves to the displays of conspecifics. Primates also exhibit a variety of visual systems, so that understanding how colors are detected and interpreted by primates requires consideration of the visual system of the natural receiver(s). Here, we present a comparison of the techniques that can be used to assess the colors encountered and exhibited by primates. These include measurements not linked to any visual system (visual system independent methods), and analyses that directly incorporate knowledge of the receiver's visual perception (visual system dependent methods). The former includes measurements such as reflectance and standardized digital image values, and the latter includes models of receiver color space and discrimination threshold models. Using case studies from our recent studies of both non-human primates and other animal groups, we will show how to analyze color with respect to specific visual systems, and demonstrate the utility of such methods when exploring the colors that primates encounter and display.

Keywords: color analysis, signaling, visual modeling, receiver psychology.