Primate vision used to detect blushing mates

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CBC News

Primates may have evolved colour vision not to find the freshest fruit but to detect blushing in each other's rumps, U.S. researchers reported on Thursday.

The three cone receptors in the eyes seem well tuned to skin tones, the team at the California Institute of Technology found.

"For a hundred years, we've thought that colour vision was for finding the right fruit to eat when it was ripe," said Mark Changizi, a theoretical neurobiologist and the team's leader. "But if you look at the variety of diets of all the primates having trichromat [three-colour] vision, the evidence is not overwhelming."

Instead, the vision system seems to be able to find the colours prevalent in primate skins, particularly changes caused by how much oxygenated hemoglobin is in the blood, the researchers report in the Feb. 8 online issue of Biology Letters.

Finding the presence or absence of blood could be useful for tracking a potential partner who is ready to mate. It could also help detect an enemy whose face has been drained of blood out of fear.

More oxygenated blood also points to a healthier potential mate during courtship, Changizi said.

Old-world primates with the three-cone vision system are all "naked apes" with bare faces and bare bottoms, which makes sense for detecting slight changes in skin complexion, he added.

In contrast, bees have four colour cones that are evenly spread across the visible spectrum, with the high-frequency end extending into the ultraviolet. Birds have three colour cones that are also evenly distributed in the visible spectrum.

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