Recent Press Highlights

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Article Highlights

Also of Interest

Article Highlights

Universal hierarchy of color names explained

A study finds that population dynamics, along with human eye function, might explain why the order in naming colors is consistent worldwide. Vittorio Loreto and colleagues formulated a theoretical framework, called the Category Game, to demonstrate how this universal color naming hierarchy might emerge. A pair of virtual agents plays the game, with one agent acting as a speaker, trying to describe a color by a name, while another acts as a hearer, trying to guess the name. The researchers plugged another component into the game: the frequency dependent resolution power of the human eye. Running the language game simulation helped determine that the time needed for a population to reach consensus on a color name depends on the region of the visible color spectrum. The researchers next ranked basic colors according to this criterion, and came up with red, magenta-red, violet, green/yellow, blue, orange and cyan, appearing in that order. The hierarchy matches that of the World Color Survey, a historical effort that provided evidence for the existence of universal constraints on basic color categorization. The model explains why, besides the general terms "dark" and "light," the basic colors red, green, yellow, and blue always appear in this specific order across cultures.

"On the origin of the hierarchy of color names," by Vittorio Loreto, Animesh Mukherjee, and Francesca Tria
10.1073/pnas.1113347109

[Abstract]

Orangutans might possess sophisticated nest-building know-how

A study of orangutan nests

Westerners represented emotional intensity with other parts of the face. The findings suggest that emotions are communicated using culture-specific facial expressions, which have evolved and diversified for use in social communication, according to the authors.

"Facial expressions of emotion are not culturally universal," by Rachael E. Jack, Oliver G. B. Garrod, Hui Yu, Roberto Caldara, and Philippe G. Schyns
10.1073/pnas.1200155109

[Abstract]

How anesthesia impairs time perception and causes 'jet-lag' in honey bees

A study finds that anesthesia alters the time perception and circadian clock of honey bees, and could explain why patients waking from general anesthesia experience jet-lag-like sleep disruption. Guy R. Warman and colleagues investigated the effects of the common anesthetic isoflurane on the "time sense" of honeybees, which have a similar circadian clock and response to anesthetics as mammals. Exposing the bees to a 6-hour daytime anesthetic affected the bees' time-dependent ability to orient themselves based on the sun's position and also delayed the timing of their foraging trips, an effect that persisted for several days. Hive activity rhythms controlled by the bees' circadian clocks were also

delayed. The authors found that these changes could be attributed to delays in the messenger RNA oscillations of the bees' central clock genes, *cryptochrome* and *period*. The effects of the anesthetic were dependent on the time of administration, and nighttime anesthesia did not shift the circadian clock. General anesthesia during daytime causes persistent changes in the circadian clock and