

# **Biological Psychology NewsLink**

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### Featured Link:

#### COLORS OF THE BRAINBOW

View a gallery featuring the amazing images from the Brainbow project, which is built on work on a fluorescent protein that recently earned scientists the Nobel Prize in chemistry. Jeff Lichtman uses a Crayola box of fluorescent proteins to color neurons in mouse brains. He and his colleagues can watch the neurons grow and develop and form and break connections with each other in living animals.



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### Study finds stress link to asthma

Pregnant women who suffer from stress are more likely to have a child with asthma, according to research from Children of the 90s study. Researchers working with about 6,000 families in Bristol found anxious mums-to-be were 60% more likely to have a baby who would develop the illness. The findings show 16% of asthmatic children had mothers who reported high anxiety while pregnant. Mothers-to-be who were less stressed had a lower incidence rate. Professor John Henderson, from the Children of the 90s team, said: "Perhaps the natural response to stress which produces a variety of hormones in the body may have an influence on the developing infant and their developing immune system that manifests itself later on." The Children of the 90s study - carried out by the University of Bristol - has been following 14,000 children. They are regularly tested and monitored to see how different lifestyles affect growth, intelligence and health. The aim is to identify ways to optimise the health and development of children. Key findings to come out of the project include left-handed children do less well in tests than their right-handed peers and women who eat oily fish while pregnant have children with better visual development. (C)BBC

See also: Chapter 15: Emotions, Aggression, and Stress Keyword: Stress; Neuroimmunology Posted: 04.08.2009

#### Chimpanzees exchange meat for sex

By Victoria Gill Chimpanzees enter into "deals" whereby they exchange meat for sex, according to researchers. Male chimps that are willing to share the proceeds of their hunting expeditions mate twice as often as their more selfish counterparts. This is a long-term exchange, so males continue to share their catch with females when they are not fertile, copulating with them when they are. The team describe their findings in the journal PLoS One. Cristina Gomes and her colleagues, from the Max Planck Institute for Evolutionary Anthropology in Germany, studied chimps in the Tai Forest reserve in Ivory Coast. She and her team observed the animals as they hunted, and monitored the number of times they copulated. "By sharing, the males increase the number of times they mate, and the females increase their intake of calories," said Dr Gomes. "What's amazing is that if a male shares with a particular female, he doubles the number of times he copulates with her, which is likely to increase the probability of fertilising that female." Meat is important for the animals' diet because it is so high in protein. Since female chimps do not usually hunt, "they have a hard time getting it on their own," explained Dr Gomes. The "meat for sex hypothesis" had already been proposed to explain why male chimps might share with females. But previous attempts to record the phenomenon failed, because researchers looked for direct exchanges, where a male shared meat with a fertile female and copulated with her right away. Dr Gomes' team took a new approach. (C)BBC See also: Chapter 12: Sex: Evolutionary, Hormonal, and Neural Bases: Chapter 6: Evolution of Brain and Behavior Keyword: Sexual Behavior: Evolution Posted: 40.08.2009

#### The Neuroscience of Yoricks's Ghost and Other Afterimages

By Stephen L. Macknik and Susana Martinez-Conde Alas! Poor Yorick. I knew him well. A fellow of infinite jest, of most excellent fancy; he hath borne me on his back a thousand times; and now, how abhorred in my afterimage he is! Well... that's what Hamlet would have said, had he been holding the vintage Pear's Soap advertisement bearing Yorick's skull in the accompanying slide, rather than a dug up and rotting Danish cranium. In this antique illusion, you can stare at the X in Yorick's left eye socket for about 10 to 30 seconds, then look away at a flat surface such as a piece of paper, wall, ceiling or sky, and you will see Yorick's afterimage as a ghostly apparition. Afterimages such as this one help us to understand how neurons in various areas of the brain adapt to the visual environment. Adaptation, in this case, is the process by which neurons habituate and eventually cease responding to an unchanging stimulus. Once neurons have adapted, it takes a while for them to reset to their previous, unadapted state: it is during this period that we see illusory afterimages. We see afterimages every day: after briefly looking at the sun, at a bright light bulb or after being momentarily blinded by a camera flash, we perceive a temporary dark spot in our field of vision. Vision scientists believe that the adaptation effect producing poor Yorick's afterimage largely takes place in the neurons of the retina. How can we know? Close your right eye and stare at the X again. Then look at the wall again to see the afterimage, but this time switch back-and-forth between closing one eye and the other. Only the left eye-which was open during the adaptation period-will reveal Yorick's ghost. © 1996-2009 Scientific American Inc

See also: Chapter 10: Vision: From Eye to Brain Keyword: Vision Posted: 04.08.2009

#### Sonar causes rock-concert effect in dolphins

By Susan Milius Exposing a bottle-nosed dolphin to a couple of minutes of nearby sonar pinging could cause some temporary hearing impairment, a new test finds. What sonar does to marine mammals has become a hotly debated topic in recent years, as beaked whales and other species have stranded in shallow water and died after naval training exercises in the area. For the first time, researchers have played recordings of actual naval sonar to a marine mammal and tested its hearing after progressive step-ups in intensity over a couple of months, says Aran Mooney of the Woods Hole Oceanographic Institution in Massachusetts. Working with a bottle-nosed dolphin trained in the protocols of hearing tests, Mooney and his colleagues played a series of recordings of sonar pings, building up to an intensity that mimicked a ship some 40 meters away. (The bottle-nosed dolphin was free to swim farther away from the noise. It didn't, but then again researchers were offering it fish.) After hearing 15 pings at 203 decibels, the animal's threshold for detecting sounds had shifted up some six decibels, Mooney and his colleagues report online April 7 in Biology Letters. "It's a rock-concert effect," Mooney says. After listening to blasting music, fans may notice a cottony quality to their hearing, as if something's blocking their ears. The effect diminishes in time. And the bottle-nosed dolphin's hearing also returned to normal typically after about 20 minutes, Mooney