Why Are Animals Colourful? Sex and Violence, Seeing and Signals

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Abstract

Colours made by animals or by other objects in the environment (such as flowers and fruit) may serve a variety of functions. Humans like colours and therefore naturally want to find functions for them, often imposing our primate colour vision system on a non-primate world. We also forget that, compared to many other animals, we are relatively colour blind and therefore colours may be invisible to us or at least not easy to discriminate compared to other animals. Colours may be functional or non-functional. The rainbow of diffraction colours produced by the comb-rows of deep-sea ctenophores, for example, do not serve a function as these animals never encounter full spectrum light. If colours do serve a purpose, this may be something to do with vision and behaviour, or irrelevant to vision. Visually 'neutral' but still functional colour patterns include animals that are or become dark in order to absorb heat and some colour pigments, such as melanin, may aid mechanical strength (see the black tips of seagull wings). The visual function of colours can be divided into two broad categories, conspicuousness or camouflage, and within each of these categories there are different reasons to 'want' to stick out or hide. As all biologists know, these reasons essentially collapse into the various forms of sex, violence and defence necessary for survival. This paper examines questions such as: is there such a thing as co-evolution of colours and colour vision, spectra and spectral sensitivity?

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This explains why non-human animals have endured harsh conditions in the entertainment industry like SeaWorld or even apes in films and commercials so that humans can laugh. It becomes culturally inconvenient for us when we consider that non-human animals have emotions, can experience pain and depression, etc. Animals are sexed. The tortures inflicted upon animals, then, will be specific to their sex and it is no surprise that for female animals, their capacity to breed overwhelmingly dictates how their bodies will be controlled. The correlation between violence against children and women, and violence against non-human animals demonstrates how patriarchy harms those of us who are minoritized and oftentimes powerless. Yesterday's problems of finding the venue, the missing proceedings, and the absence of Internet connectivity were made up for at the opening ceremony earlier today. The following invited papers were excellent. I cannot give a minute-to-minute account, so I will report on just one of the lectures: Justin Marshall from the University of Queensland in Brisbane lectured on Why are animals colourful? Sex and Violence, seeing and signals. The human visual system is much less colourful than that of many animals, so our world is much poorer. Justin Marshall studies how animals see the world, whic Sex and Violence, Seeing and Signals Justin Marshall Published online: 5 August 2010 Summary Colours made by animals or by other objects in the environment (such as flowers and fruit) may serve a variety of functions. Humans like colours and therefore naturally want to find functions for them, often imposing our primate colour vision system on a non-primate world. Visual systems and sex are two important features of this paper. Sexual selection is a sub-category of natural selection that has been responsible for the production of some of the most bizarre and visually stunning animal displays we see in nature. Again, millions of years of trial and error have resulted in the winners being those animals that can 'shout' loudest, 'Look at me, look at me, over here baby!'