

Animals inspire human development

Humans are at the top of the evolutionary chain. At least that's what most of us like to believe. To believe anything else would jeopardise our claim as planetary rulers and do tremendous damage to many fragile egos. We may have learnt to walk on two legs, use our opposable thumbs, and develop writing systems, but that doesn't make us the pinnacle of existence. The truth is that no matter how advanced we think we are, we look to animals for inspiration when thinking up many new technologies.

Dolphins, like humans, need to be conscious or maintain a certain level of awareness to breathe. Both species also need to rest their brains by entering into an unconscious state. Humans simply go to sleep, but if dolphins switched off completely as we do, they would drown. In the interests of self-preservation, they have evolved the ability to shut down one half of their brain at a time. This ensures that they maintain enough awareness to tend to their physical needs, while getting much needed rest.

Being able to function on half a brain while letting the other half rest would be an invaluable ability in many professions. Military personnel could stay awake and alert in dangerous situations, and doctors would be able to handle their demanding shift schedules. This raises the question of capability. Dolphins use the ability to maintain basic functioning. Doctors and members of the military need higher levels of functioning, as they are responsible for other lives. Would you trust a neurosurgeon with half of his or her brain asleep? Nevertheless, efforts are being made to manufacture stimulants that would allow people to mimic dolphins and maintain awareness for over sixty hours.

Pit Vipers can differentiate between the heat given off by possible prey and the heat emanating from its surrounding rocky environment. This ability comes from granules in their nostrils that are sensitive to changes in heat within a perimeter that extends beyond its striking distance. Scientists mimicked this ability and used it in the creation of thermal imaging technology. Thermal imaging is used in detecting volcanic activity, to track the effects and pace of global warming, and by police and the military in locating body heat.

An application with more functionality for general public use is the study of tree frogs to improve the stickiness and reusability of stick tape. The Indian Institute of Technology studied tree frogs, and their toe pads in particular, to determine how they managed to adhere to various surfaces. They discovered that the footpads had tiny channels on them, which enhanced frogs' sticking ability. This breakthrough led to the design of an adhesive layer of elastic tiers with channels for air or water. The upshot was reusable tape with 30 times the stickiness of current adhesive tape.

The influence of animals can be seen everywhere: the construction of birds' wings helped refine wings on aeroplanes. The ability of hummingbirds to hover was instrumental in the design of helicopters. And the construction of buildings is now being adapted along the lines of termite mounds to conserve energy. We may consider ourselves the epitome of evolution, but our continued borrowing from lower life forms lends itself to the conclusion that our pride in our abilities is severely misguided.

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<http://frontierindia.net/hi-tek-military-devices-inspired-by-animal-biology>

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http://www.zpluspartners.com/zblog/archive/2004_01_24_zblogarchive.html

About the Author

Sandra wrote this article for the online marketers Outlook SGE [specialists in South African safaris](#), one of the most successful companies organising safaris, catering especially to smaller groups.

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