

Bird makes grade as manager

Planning ahead has been considered a uniquely human quality, says S. Ananthanarayanan.

But a recent study of the Western Scrub Jay shows that the bird displays unmistakable planning behaviour in its manner of storing food.

The Bonsai Manager

Some days ago, Shri R Gopalakrishnan, reputed manager at Hindustan Lever Ltd and Tata Sons, introduced his book, 'The Case of the Bonsai Manager – Lessons from Nature' at Taj Mahal Hotel in Mumbai. This remarkable management book draws on lessons in nature, the behaviour of animals, to show how attitudes shape managerial responses – and even talks of how to be creative and intuitive!

Shri Gopalakrishnan spoke of the parts of the brain in living things – the basic 'reptilian' part, at the brain stem, which controls survival instincts, the limbic system, found in most animals, which deals with emotions and the evolved cerebral cortex, of the highest mammals, which enables thinking and reasoning.

He described an example of a squirrel and a hungry man, separated from food by a narrow plank. Both run nimbly across and reach the food. But raise the arrangement by a hundred feet from the ground – the squirrel still runs across and eats, but the man prefers to stay hungry!

The ability to reason and consider what may happen if he should fall, or the ability to plan, is uniquely higher mammal behaviour and what makes man superior to other living things and enables man to manipulate his environment. Many animals have been seen to instinctively provide for the future, but no instances have been identified as clearly making a choice of one course of action over another, based on experience and the results of the behaviour, distinct from just conditioning.

The Scrub Jay



Nicola Clayton and colleagues, in a recent paper in *Nature*, report that *Aphelocoma californica*, or the California Jay or the Long Tailed Jay, actually shows an ability to plan for the future. Even humans are not born with the ability – children develop a sense of the future around the age of two. Any future-oriented behaviour of other animals are either fixed action patterns or cued by their motivational states. Examples

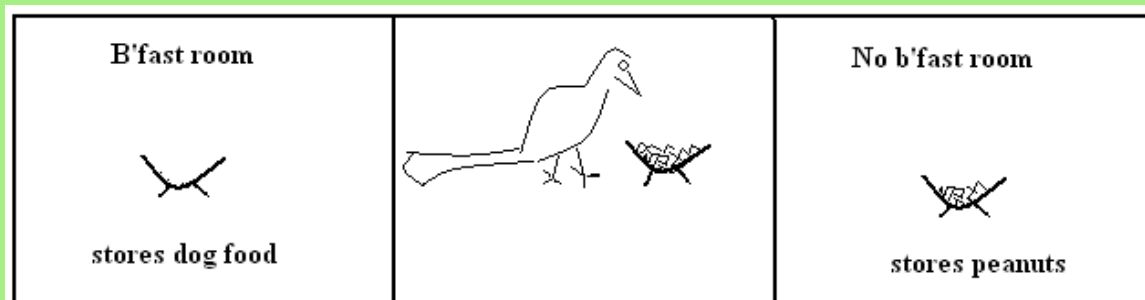
are of migratory birds flying south or a rat pressing a lever to get food.

Clayton and colleagues showed through experiments that the Jays were able to preferentially store food in places where they knew they would be hungry if they landed the next morning and also storing the particular kind of food in places where that kind would be lacking.

The three rooms

The Jays were first fed powdered pine nuts, which they could not store, in the evening for a few days in the central one of three compartments, called rooms. The next morning, they were confined in one of the side rooms. If they were in the first room, the ‘breakfast’ room, they were fed. But if they were in the ‘no breakfast’ room, they got nothing.

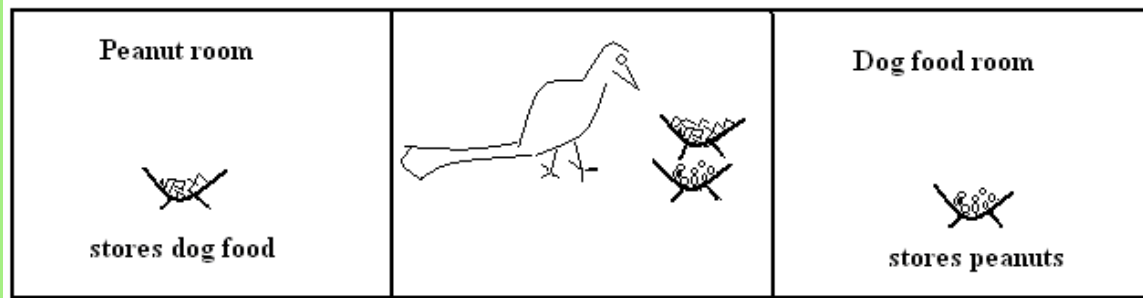
After a few days, one evening, they were provided whole pine nuts and sand filled trays were placed in the two side rooms. The experimenters found that the birds went and stored the nuts in the side rooms – with 3 times as many nuts in the ‘no breakfast’ room as in the ‘breakfast’ room.



The important thing is that the results of the experiment came from just this single test – that the birds stored nuts the first time they were provided with whole nuts in the middle room and trays for storing food in the side rooms. Their behaviour was not reward-reinforced conditioning – they got it right the first time!

Selecting food items

The next experiment was with two kinds of food – peanuts and dog food. They got both kinds in the evenings, and the next morning, they got breakfast every time, in either side room. But each side room got only one kind of food - one room was the ‘peanut’ room and the other was the ‘dog food’ room. Again, the first time they got a chance to store food in the side rooms for the morning, the Jays stored peanuts in the ‘dog food’ room and dog food in the ‘peanuts’ room – planning to make provision for the food that would not be served in either room in the morning!



Research has identified the parts of the human brain that is active in planning and remembering – faculties that enable thinking about the past and future. In the case of Jays, we cannot really say whether they actually projecting themselves into the future or whether the action they take is without thinking about the morrow. But the experiments do show that the birds are able to provide for a need that they may feel at a time some twelve hours in the future.
