Study shows monogamous birds can read partner's food desires

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This is a Eurasian Jay mated pair engaged in food-sharing. Credit: Ljerka Ostojic

New research shows that male Eurasian Jays in committed relationships are able to share food with their female partner according to her current desire.

The behaviour suggests the potential for 'state-attribution' in these birds

– the ability to recognise and understand the internal life and psychological states of others.

The research was carried out in Professor Nicola Clayton's Comparative Cognition lab at Cambridge University's Department of Psychology, and is published today in the journal *PNAS*.

Researchers tested mated jays and separated males from females. The females were fed one particular larvae, either wax moth or mealworm – a treat for the birds, like chocolates – allowing the males to observe from an adjacent compartment through a transparent window.

Once the pairs were reintroduced and the option of both larvae was presented, the males would choose to feed their partner the other type of larvae, to which she hadn't previously had access - a change in diet welcomed by the female.

Through different tests using variations on food and visual access to the females during feeding, the researchers show that the males needed to actually see the females eating enough of and become sated by one type of larvae – called 'specific satiety' - to know to offer them the other type once reunited.

This demonstrates that the males' sharing pattern was not a response to their partner's behaviour indicating her preference but a response to the change in her internal state.

"Our results raise the possibility that these birds may be capable of ascribing desire to their mates – acknowledging an 'internal life' in others like that of their own," said Ljerka Ostojic, who led the research.

"Ascribing internal states to other individuals requires the basic understanding that others are distinct from the self and others' internal

states are independent from, and differ from, one's own.

When there was no opportunity to feed the female, males chose between the two foods according to their own desires. Only when they could share with the female did they disengage from their own desires and select food the female wanted.

The researchers believe that this ability to respond to another's internal state in a cooperative situation might be important for species living in long-term relationships. Food-sharing is an important courtship behaviour for the Jays – so the ability to determine which food is currently desired by his partner might increase the male's value as a mate.

"A comparison might be a man giving his wife chocolates. The giving and receiving of chocolates is an important 'pair-bonding' ritual – but, a man that makes sure he gives his wife the chocolates she currently really wants will improve his bond with her much more effectively – getting in the good books, and proving himself a better life partner."

More information: "Evidence suggesting that desire-state attribution may govern food sharing in Eurasian Jays," by Ljerka Ostojić, Rachael C. Shaw, Lucy G. Cheke, and Nicola S. Clayton, *PNAS*, 2013.

Provided by University of Cambridge