Sex differences in male and female learning revealed by gibbons

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(PhysOrg.com) -- Differences in the way male and female learning has evolved have been revealed by new research into gibbons, conducted by the University of Abertay Dundee.

Female gibbons benefited significantly from having access to a tool before being tested on using the tool to retrieve food. However, the males showed no beneficial learning effects at all.

The researchers believe that the potential dangers of new objects or new situations to females – particularly if they are pregnant or caring for

young infants – have given an evolutionary advantage to being cautious. Male gibbons, who lack the same 'reproductive costs', by contrast seem to have evolved no such caution.

Dr Clare Cunningham, a psychology lecturer at Abertay University who led the research, said: "This result was a genuine surprise to us, as we'd not expected such a large difference with the females who had the learning opportunity before we conducted the test.

"We found that female gibbons who had no experience of the tool before being tested took almost three times as long to successfully use the tool to retrieve food from behind a barrier."

The researchers also discovered that having access to the rake-like tool before testing did not increase the likelihood of success.

Interestingly, the male gibbons who had previous experience of the tool actually took much longer during the test to approach the tool and try to retrieve the tool, suggesting that males are less interested in objects they have previously experienced.

Clare added: "We believe that female gibbons who are more cautious to new objects and new situations may have an evolutionary advantage, resulting in a greater likelihood of survival and their cautious dispositions being passed on to the next generation.

"The research is very exciting, as it opens up a whole range of new questions for us to consider. For instance, have other species – like humans – also evolved with this same sex difference to learning? If so, this could be a very important study indeed."

The research was conducted at the Gibbon Conservation Centre in Santa Clarita, California, which works to ensure the survival of this

endangered ape through conservation and scientific research.

The research is published online in the journal *Animal Cognition*, and is forthcoming in print.

Provided by University of Abertay Dundee