UNIVERSITY of TASMANIA

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Media Release

Chiefs of Staff, News Directors

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Kangaroos are left-handed

Kangaroos are left-handed, new research has found.

The research findings were contained in the paper *Parallel Emergence of True Handedness in the Evolution of Marsupials and Placentals*, published today in the journal Current Biology.

"True" handedness, or the consistent favouring of one hand over the other, was considered to be a uniquely human characteristic at a population-level.

But the research found that kangaroos display a forelimb preference, comparable in strength with human handedness, only they favour the left not the right.

Wildlife ecologist Janeane Ingram, a PhD student with the University of Tasmania's School of Land and Food, was one of the authors on the paper, along with Andrey Giljov, Karina Karenina and Associate Professor Yegor Malashichev from the Saint Petersburg State University in Russia.

Ms Ingram said observations of red-necked wallabies and eastern grey kangaroos were conducted in 2012 and 2013 at Maria Island National Park and Mount William National Park in Tasmania, and of red kangaroos at the UNSW arid zone research station at Fowlers Gap, New South Wales. Observations for the endangered Goodfellow's tree kangaroo were conducted in zoos in Australia and Germany.

"The eastern grey and red kangaroos showed a strong preference for left forelimb use for all the observed types of behaviour," Ms Ingram said.

"Red-necked wallabies showed a population-level preference for left forelimb use for feeding from a bipedal position and self-grooming, as well as distinctive left and right forelimb use when bimanual feeding."

"Goodfellow's tree kangaroo showed no preference for either the left or right forelimb for a number of observed natural behaviours."

Ms Ingram said that the significant difference between bipedal and quadrupedal species (land dwelling and tree-dwelling macropods) strengthened the link between posture and handedness.

“Any study that proves true handedness in another bipedal species contributes to the study of brain asymmetry and mammalian evolution,” Ms Ingram said.

“Even in the scientific community true handedness was assumed to have evolved primarily in humans and primates, but as one of our reviewers pointed out, laterality is also obvious in how parrots hold their food or how your dog shakes hands. But these examples of lateralization have not been proven at the population level”.

“The results from our study indicate that there may be parallel evolution in handedness between placental mammals and marsupials. There are also positive benefits for the understanding of how the left and right brain hemispheres control laterality (handedness) due to the potential for discovering different brain pathways in marsupials”.

“This is exciting research and it was wonderful to see Russian scientists travel from St Petersburg to Maria Island in Tasmania to undertake this study, which is a major contribution to the understanding of handedness in mammals and for marsupial research in general.”

Ms Ingram said the research would not have been possible without funding support from the National Geographic Society’s Committee for Research and Exploration.

Information released by:

University of Tasmania, Communications and Media Office
Phone: 61 3 6324 3218 or 0438 510 616
Email: Media.Office@utas.edu.au