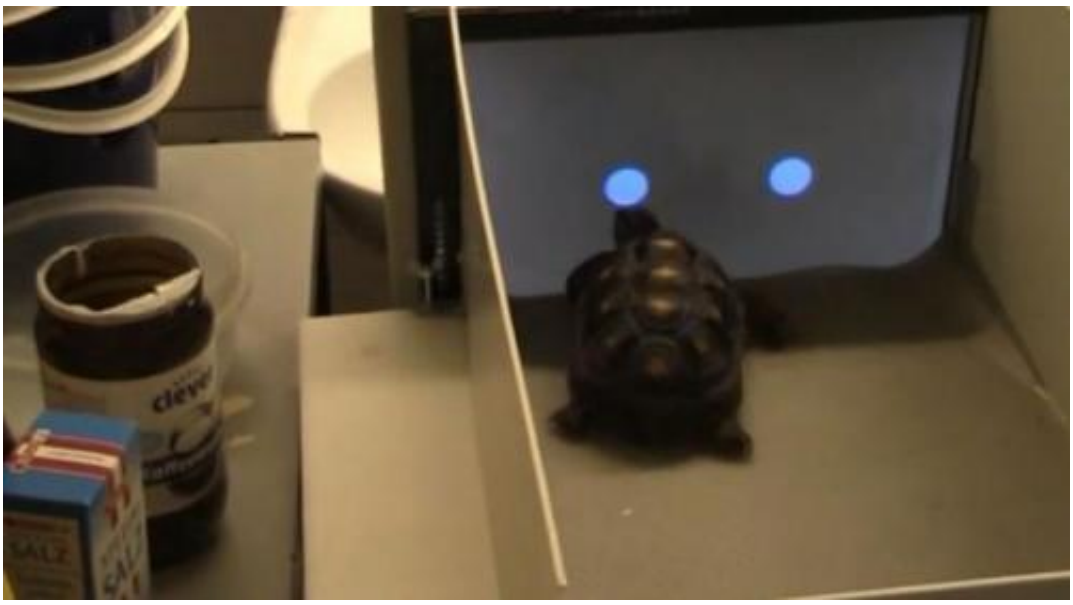
Tortoises master touchscreen technology (w/ Video)

August 6 2014, by Marie Daniels



Tortoises have learned how to use touchscreens as part of a study which aimed to teach the animals navigational techniques.

The research, which was led by Dr Anna Wilkinson, from the School of Life Sciences, involved red-footed tortoises, which are native to Central and South America. The brain structure of reptiles is very different to that of mammals, which use the hippocampus for spatial navigation.

Instead, it is thought that the reptilian medial cortex serves as a homologue, however very little behavioural work has actually examined this. To understand how tortoises learn to navigate around their environment, the researchers tested how the reptiles relied on cues to get around.

Dr Wilkinson said: "Tortoises are perfect to study as they are considered largely unchanged from when they roamed the world millions of years ago. And this research is important so we can better understand the evolution of the brain and the evolution of cognition."

Dr Wilkinson carried out the initial training while at the University of Vienna, giving the tortoises treats such as strawberries when the reptiles looked at, approached and then pecked blue circles on the screen.

Two of the tortoises, Esme and Quinn, went on to apply their knowledge to a real-life situation.

The researchers placed them in an arena with two empty food bowls that looked like the blue circles on the touchscreen. The tortoises went to the bowl on the same side as the circles they were trained to peck on the screen.

Dr Wilkinson explained: "Their task was to simply remember where they had been rewarded, learning a simple response pattern on the touchscreen. They then transferred what they had learned from the touchscreen into a real-world situation. This tells us that when navigating in real space they do not rely on simple motor feedback but learn about the position of stimuli within an environment.

"The big problem is how to ask all animals a question that they are equally capable of answering. The touchscreen is a brilliant solution as all animals can interact with it, whether it is with a paw, nose or beak.

This allows us to compare the different cognitive capabilities."

More information: 'Touchscreen performance and knowledge transfer in the red-footed tortoise (Chelonoidis carbonaria)' was published in the journal *Behavioral Processes* www.sciencedirect.com/science/ … ii/S0376635714001326

Provided by University of Lincoln