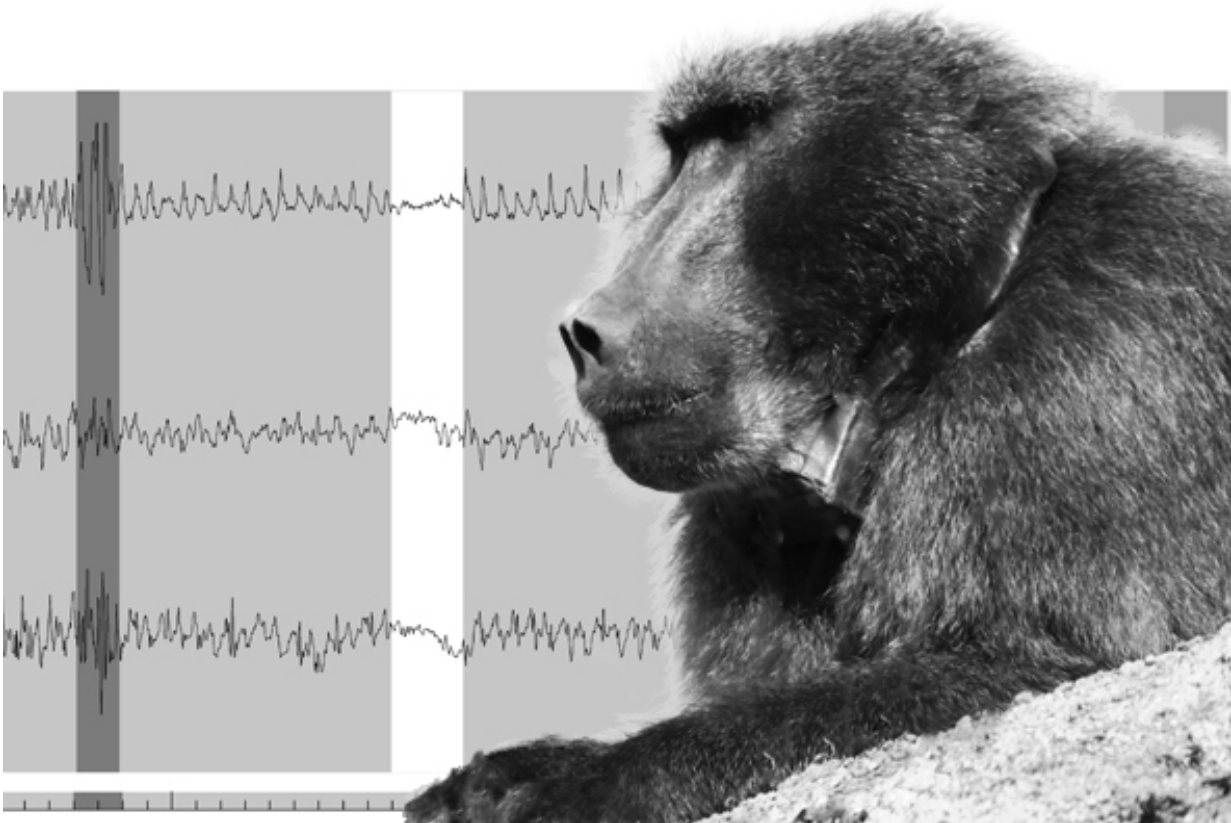


New tools to spy on raiding baboons in suburbs of Cape Town, South Africa

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Swansea University (Wales, UK) Laboratory for Animal Movement has been developing new technologies to study animal behaviours and use accelerometers to quantify how much an animal moves in the three dimensions. Credit: Gaëlle Fehlmann, Swansea University.

Scientists from Swansea University's College of Science are part of an international team attempting to better understand the human-baboon conflict in Cape Town, South Africa.

"Raiding [baboons](#) are a real challenge in the Cape Peninsula, South Africa", said Professor Justin O'Riain from the University of Cape Town, a co-author on the study published by the journal *Animal Biotelemetry*, who has been studying baboons in the region for over a decade.

"The baboons enter properties to raid in gardens and bins, but also enter homes and sometimes take food directly from people."

In a previous study, the team showed that whilst the management strategy was keeping baboons away from the urban space, some males were still finding ways in. The team therefore wanted to understand how the baboons were doing this.

"Raiding events are so fast, so intense, that we couldn't keep up following them by foot in urban areas with high walls and security fences. We had to find another method to document the very special techniques baboons were adopting when raiding," said Swansea University PhD researcher Gaëlle Fehlmann, lead author of the study who carried out the fieldwork in South Africa.

"Here at Swansea's Laboratory for Animal Movement we have been developing new technologies to study animal behaviours and use accelerometers to quantify how much an animal moves in the three dimensions," said Dr Mark Holton, co-author of the study.

Such methods have been used for more than a decade, but mainly on birds or sea mammals. The Swansea team designed and built bespoke collars for the baboons that would enable them to precisely track the

baboons.

"Our preliminary collars that we deployed in the first field season came up with interesting results, but only provided a couple of weeks of data; they needed to be more robust to keep up with the baboons," added Dr Andrew King, head of Swansea University's SHOAL (Sociality, Heterogeneity, Organisation And Leadership) research group in the College of Science, who is the senior author of the study.

So, the team went back to the drawing board and thanks to the engineering skills of Dr Mark Holton and Phill Hopkins, they came up with the "F2HK" collar.

"We thought about every tiny detail, we even enlisted a local saddler to produce the collar from super soft leather that is normally used to line horses' harnesses," explained Ms Fehlmann, who also created a short movie to document the whole process.

And the results exceeded expectations. The 10 collars deployed in the second field season accumulated 252 days of data, recording acceleration in 3 dimensions at 40 times per second and taking a GPS fix every second too.

Dr King added: "Using these data we were able to tell what the baboons were doing for every second our collars were recording; we can now recognise over 90% of baboons behaviours without ever actually seeing the baboon!"

Now that the team is able to remotely track the fine details of baboons' movement, the next step is to use this technology to uncover the secrets of the baboons raiding tactics.

More information: Gaelle Fehlmann et al. Identification of

behaviours from accelerometer data in a wild social primate, *Animal Biotelemetry* (2017). [DOI: 10.1186/s40317-017-0121-3](https://doi.org/10.1186/s40317-017-0121-3)

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