

Decoding the long calls of the orangutan

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Pongo pygmaeus (orangutan). Credit: Malene Thyssen, via Wikipedia

Research into the long calls of male Orangutans in Borneo has given scientists new insight into how these solitary apes communicate through dense jungle. An acoustic analysis of the calls, published today in *Ethology*, reveals that the calls not only serve to attract females, but also contain information on the identity and the context of the caller.

The international team of researchers, led by Prof. Dr. Carel van Schaik from the University of Zurich, followed three sexually active male Orangutans 'Niko', 'Kentung' and 'Fugit' from a nature reserve in Tuanan, [Borneo](#). The research area covered 750 hectares of heavily logged peat swamp forest where the average [Orangutan](#) density is 4.25 per square kilometre.

"Orangutans have a rich repertoire of calls, however only sexually mature, flanged males emit long-distance calls with a series of long booming pulses and grumbles which can be heard through over 1 km of dense jungle," said co-author Dr

Brigitte Spillmann. "Individual recognition is important in long distance communication when individuals are separated beyond visual contact, we examined whether individual identity and context were also encoded into a long call."

The behaviour of the three orangutans was documented each time they emitted a long call and their behaviour patterns were divided into two categories. Frequently the males would emit spontaneous calls where there is no obvious prompt identified by the observers. They would also call out in an aroused state in response to social prompts, such as another male's long call, when a tree falls nearby and when the caller pushes over a tree themselves.

This tree pushing is known as 'snag crashing', when the caller pushes over a dead tree in a noisy display of dominant behaviour, comparable to chest beating in [Gorillas](#). If a flanged male hears a tree falling nearby, this may suggest a rival male is 'snag crashing' and can lead to a long call being given in response. Long calls emitted in an aroused state are slightly faster, have pulses of shorter duration and contain more pulses and bubbles than spontaneously emitted calls.

After observing these categories of behaviour, the team also analysed how female orangutans respond to the long calls. The team discovered that Bornean females recognise not only who is calling, as in previous research, but also clear differences in the acoustic characteristics of long calls emitted in different contexts.

The team monitored the responses between a calling male and a female who had heard the call but was not associated with the caller. Females with dependent offspring moved away from spontaneous calls whereas a small sample of sexually active females seem to approach the caller. When an aroused long call was heard females appeared to ignore the caller.

"This may be because in Borneo females with

offspring and rival males are not the target of the spontaneous long calls, but are eavesdroppers. However the cost to the caller goes up if there is a more dominant male eavesdropper who may respond," concluded Spillman.

"Long calls given in response to a disturbance are likely intended to repel rivals or potential predators, which accounts for the females' lack of reaction compared to spontaneous long calls. Females are able to tell the difference between the types of long call and they react accordingly.

Provided by Wiley

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