

Kong's calling card

by JASON BITTEL

- 1 Since King Kong first appeared on the silver screen in 1933, the fictional giant ape has exposed audiences all over the world to a very real gorilla behavior – chest-beating. “It is 21,” says Edward Wright, a primatologist at the Max Planck Institute for Evolutionary Anthropology in Germany. “It can be a bit frightening. You don’t want to get in the way.”
- 2 Mountain gorillas live in tight-knit family groups led by silverback males, whose authority is constantly being challenged by other males. By advertising their size, mating status, and fighting ability via sounds that can travel long distances through thick rainforests, the silverbacks are signaling would-be challengers that they better think again before starting a ruckus.
- 3 To study the behavior in never-before-seen detail, Wright and his colleagues spent more than 3,000 hours observing endangered mountain gorillas at Volcanoes National Park in Rwanda. While battling biting insects and navigating the park’s rugged, mountainous terrain, the scientists observed more than 500 chest beats from 25 different males between 2014 and 2016. They stayed at a safe distance from the animals, which have been accustomed to the presence of researchers but remain highly vulnerable to human diseases.
- 4 The results showed that the biggest mountain gorillas produced sounds with lower frequencies than smaller gorillas – possibly because bigger gorillas have larger air sacs near their larynx. This means that chest-beating isn’t just a visual display, but what the study calls an “honest signal of competitive ability”. Although previous studies showed that a gorilla’s body size is linked to dominance and reproductive success, the idea that chest-beating also communicates some of that information remained speculative. “We thought and suspected it, but there was no actual data to support this claim,” says Roberta Salmi, a primatologist and director of the Primate Behavioral Ecology Lab at the University of Georgia, who is unaffiliated with the research. “I was happy to finally see those results.”



- 5 Though chest-beating is common in movies and other pop culture portrayals, there's still plenty we get wrong about the behavior. For starters, real-life gorillas don't strike their chests with balled up fists. Rather, they cup their hands, which amplifies the sounds. By cupping their hands they ensure that the thumps can be heard more than half a mile away. Silverbacks beat their chests most often when females under their protection are most ready to mate. But it's not like males are banging on the drum all day, as they're often portrayed doing in movies.
- 6 Though gorillas are equipped with gigantic muscles and long canine teeth, the animals come to blows only rarely. Wright believes this is at least partly because chest-beating allows males to size each other up without getting physical. "Even if you're likely to win a fight, there is still quite a high-risk factor," he says. "These are large, powerful animals that can do a lot of damage." To smaller males, the sound of a silverback's chest-beat may discourage them from approaching. 27, a silverback may hear the beats made by a smaller male nearby and decide that he's too puny to bother with.
- 7 Because chest-beat peak frequency syncs up with body size – which is itself linked to dominance and reproductive success – female gorillas have plenty of reasons to listen in on the displays, too. Particularly impressive chest-beating might lure females away to a nearby group like a siren's song, though this has not yet been studied. Considering the new study's results, the next step is to see how other gorillas use the information encoded in chest-beating sounds, Salmi says. "It will be very interesting to see how hearing chest beats in their environments might affect their movements and decision-making as to which areas of their home range to use."

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