

# Sneeze to leave: how African wild dogs vote by sneezing

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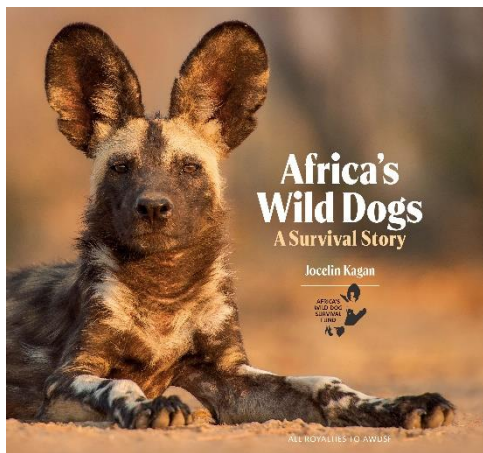
As the sun begins to dip toward the horizon, piles of sleeping African wild dogs start to stir. After resting in the shade throughout the heat of the day, a hungry dog attempts to rouse his pack mates to journey out to the bush and hunt. He rises from the sand in the stereotypical initiation posture – ears back, tail up, tongue rolling in his mouth – and stalks towards a pile of sleeping friends. Just as domestic dogs welcome their owners when they return from work, this wild cousin jumps, whines, and licks his pack mates in greeting. He encourages them to wake up, greet him in turn, and to depart the resting site in search of a nightly meal. If, however, his pack mates are not convinced to move, the initiator will return to rest and wait for a subsequent initiator to stir the pack's consensus to start a hunt. This nightly negotiation between an initiator and his pack is known as a 'rally'. Our team of researchers at the Botswana Predator Conservation Trust studied this complex social interaction and found that the success or failure of a pack to depart their resting site to hunt is mediated by both democracy and dominance.

We studied five packs of African wild dogs in the Moremi Game Reserve in the Okavango Delta, Botswana. We knew and recognised every individual by the distinct patterns of tan, black and white that decorate their coats. After finding packs by using radio signals transmitted by the dogs' VHF collars, we would sit and observe the pack from a vehicle and record their rallies on video. To better understand and describe how a pack reaches a consensus to leave a resting area, we identified which individual initiated a rally, quantified the proportion of the pack engaging in social greeting behaviour, and explored a potential means of communication individuals used to voice their support for departure. During preliminary observations of the packs over years before this study, researchers noticed abrupt, noisy nasal exhalations – sneezes – would erupt from members of the pack just before they headed out to hunt. In this study, we investigated whether those sneezes acted as votes to depart a resting site. We counted the number of sneezes that occurred in each rally and compared the frequency of voting in both successful and unsuccessful rallies.

After a year of observation, we evaluated our results. What we found confirmed our suspicions: the number of sneezes in a rally was directly related to whether the pack decided to hunt. Sneezes appear to function as a sort of vote – the more sneezes, the more likely the pack was to successfully depart their resting site. There were seven times the number of sneezes in successful rallies than in unsuccessful ones. Sneezes were also the most important factor that predicted rally success in a statistical analysis of our data. This included sneezes, the proportion of social activity, and the identity of the initiator as potential predictors of rally success. However, we also found that if one of the dominant pair – the alpha male and female – initiated a rally, the rally was more likely to be successful than if one of the lower status individuals initiated a rally. In other words, when the leader of the pack showed a desire to go hunting, the pack was likely to follow. After investigating this dynamic further, we discovered there was a shifting threshold for the number of votes

required to depart depending on the dominance level of the individual who initiated a rally. If a dominant dog initiated a rally, it only took three sneezes from the pack to guarantee rally success. If a sub-dominant initiated, however, it took more than ten sneezes to guarantee the pack's departure from their resting site.

Our study shines a light on the complexity and sophistication of African wild dogs' social lives. The more we study and understand about their behaviour, the more appreciation we have for the complex decision making and trade-offs these animals negotiate in their day to day lives.



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