

### Literature Review 3: Topic Summary

The spotted hyenas (*Crocuta crocuta*), also known as the laughing hyena, are the largest in the Hyaenidae family. They are social mammals that live in clans under a matriarchal rule and live mainly in the sub-Saharan regions of Africa. The objective of the studies was to study the influences on the feeding and hunting behaviour of spotted hyenas.

Traditionally spotted hyenas were believed to be carnivores who primarily scavenge for leftover meat from other predators such as lions. Gasaway (1991) observed and studied radio-collared spotted hyenas in Etosha National Park and recorded their hunting behaviour. They discovered that spotted hyenas prefer to hunt their food, where most of their diet is prey hunted themselves, preferring freshly hunted meat over desiccating carcasses (Gasaway et al., 1991). Henschel & Skinner (1990) replicated previous research in Kruger National Park with the use of scat analysis and observing radio-collared clans of spotted hyenas. They do engage in scavenging from predators such as lions and leopards but consume more meat when they hunt themselves (Henschel & Skinner, 1990). Essentially spotted hyenas primarily hunt their prey and occasionally engage in scavenging.

Spotted hyenas have a diverse prey preference where they are known as opportunistic hunters. It caused researchers to question what influenced the type of prey they hunted. Tilson (1980) studied the scat samples, prey hair samples and observed the prey type of spotted hyenas in the Namib Desert, where male and older prey are preferred. Cooper (1990) studied five clans in Chobe National Park, observing radiometry collared hyenas and analyzing scats and hair samples, determining that medium to large prey is preferred. Trinkel (2010) observed clans in Etosha Park of spotted hyenas, also recording the prey population density with Jacobs index. Spotted hyenas depend on the availability of prey, so a higher prey population was targeted, and

the size of prey affect the hunting clan sizes (Trinkel, 2010). Fester (2021) studied the prey density and the scats of spotted hyenas in Namibia, where spotted hyenas would choose prey depending on the hunting clan size due to reward gain. Yirga (2015) focused on human settlements effect on hunting behaviour with scat analysis, discovering that livestock and human waste are consumed in high quantities. Skinner (2006) investigated the left-over bones in dens of spotted hyenas to study the prey types mostly eaten and found that spotted hyenas would consume larger prey more. The main influences found on prey preference were prey abundance and its availability, the size of the prey compared to clan size and human disturbance.

As socially organized species, most of their behaviours are impacted by the social hierarchy. Researchers were interested in their social hierarchy and how it influences their feeding behaviour. Tilson & Hamilton III (1984) explored social hierarchy impact on feeding behaviour by setting out four carcasses and observing their feeding behaviour. It showed a linear relationship between social hierarchy and feeding, where females and their cubs would eat more (Tilson & Hamilton III, 1984). Holekamp (1997) studied how social rank influence the feeding behaviour of spotted hyenas in Kenya and discovered that high ranking females hunted more as well as consumed more high-quality meat, whereas males would consume more low-quality foods such as skin and bones. Social hierarchy in clans has a large impact on their feeding behaviour, where high-ranking females would consume more high-quality meat than the rest.

*Crocuta crocuta* is a species that are social opportunist hunters with influences on their feeding and hunting behaviour. The hunting behaviour is mostly hunting for food themselves, where preys chosen are based on the size of prey relative to the availability and hunting clan size, so increased hunting clans hunt larger ungulates. Social hierarchy influences their feeding behaviour, where high ranking females consume more quality food. It is unknown how the

hunting and feeding processes came to be in a neurological and genetic sense, such as what are hormones are used in these behaviours. Researchers do not know how these aspects evolved to become the majority. A possible future research route is observing the brains of spotted hyenas when they hunt alone versus when they hunt in clans and how it affects their success.

#### Literature Citations

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