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## SHORT COMMUNICATION

### Striped Hyaenas (*Hyaena hyaena*) in Grey Wolf (*Canis lupus*) packs: cooperation, commensalism or singular aberration?

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Non-antagonistic interspecific relationships among carnivores are poorly known and difficult to study. Many such relationships probably remain undiscovered, and even in better-known cases their nature is often unclear (see, for example, Lehner, 1981 vs. Minta, Minta, & Lott, 1992) as it is virtually impossible to quantify costs and benefits: do both species benefit from such a relationship, or just one, or none of them?

The behavioural ecology of the Striped Hyaena (*Hyaena hyaena*) is poorly known. It is believed to be a solitary forager, although multiple individuals can be present at a rich food source such as a large carcass, juveniles can accompany their mother on foraging trips, and small polyandric groups can share territories and daytime resting sites (Holekamp & Kolowski, 2009). It is not known to associate with other carnivore species during foraging. Striped Hyaenas kill dogs (*Canis familiaris*), including those of large, aggressive breeds (Heptner & Sludskij, 1992). Other hyena species are highly intolerant of other large carnivores and even members of other conspecific groups (Van Lawick & Goodall, 1970; Kruuk, 2014).

Grey Wolf (*Canis lupus*) is a highly social predator (Fox, 1971); however, there is no record of other carnivore species, except the closely related domestic dog, associating with wolf packs. Dogs are hunted and killed much more often than accepted, while Coyotes (*Canis latrans*) and Golden Jackals (*C. aureus*) are actively chased away from kills and often hunted (Fox, 1971).

The observations presented below show that Striped Hyaenas can closely associate with Grey Wolf packs, although the nature and duration of such association remain unknown.

On 15 March 1994, just before sunrise, VD found a trackway consisting of Grey Wolf and Striped Hyaena tracks at the bottom of Wadi Netafim near Eilat, Israel (29°34'N, 34°55'E, 241 m a. s. l.). VD had frequently found wolf and hyaena tracks in this area in previous months, but in poor state of preservation due to dry sand. This time, however, the bottom of the wadi was covered with a layer of fine, moist sand left by a small flash flood a few days earlier, so the footprints were well preserved. The trackway consisted of tracks of three Grey Wolves (hindfoot print lengths 12, 9, and 8 cm) and one Striped Hyaena (hindfoot print length 9 cm). VD followed the tracks upstream for approximately 400 m, at which point they disappeared on rocky terrain. Remarkably, in many places the hyaena tracks were on top of wolf tracks, but in other places the sequence was the opposite; the tracks of the three wolves also overlapped

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each other in all possible orders, indicating that the tracks of all four animals were left at the same time and that the hyaena was sometimes following the wolves and sometimes was being followed by at least some of them.

On 25 November 1998, approximately 1 h after sunset, while spotlighting from a jeep at Wadi Roded (29°35'N, 34°56'E, 175 m a. s. l., approximately 1300 m from the previous location), BE and two co-observers saw a group consisting of 4 adult and 3 subadult Grey Wolves and one Striped Hyaena. The animals were observed for 2-3 minutes as they climbed up the wadi slope, repeatedly stopping to look back at the car. The hyaena was not following the wolves, but moving in the middle of the pack. Next morning BE re-visited the site and found numerous hyena and wolf tracks, but no carrion or other possible food items in the vicinity.

Both Grey Wolves and Striped Hyaenas of southernmost Israel, where the observations took place, are known to be predators and scavengers, their food ranging from large ungulates to insects to crops to garbage (Hofer, 1998; Mendelssohn & Yom-Tov, 1999). Why would two species with such a large dietary overlap associate with each other instead of being antagonistic? There are at least three possibilities. First, it could be aberrant behaviour by a single hyaena. Although the two observations were four years apart, Striped Hyaenas are known to live in the wild for at least 12 years (Heptner & Sludskij, 1992). This explanation is supported by the fact that in many years of wolf research in Israel, no association of wolves with hyaenas other than being present at large carrion at the same time has been reported (Reuven Hepner, Israel Nature & Parks Authority, pers. comm. April 2015). It does, however, not explain the apparent tolerance of the wolves towards the hyaena. Second, the hyaenas might be the wolves' commensals or kleptoparasites, following them to feed on large bones and hide fragments, the typical leftovers of wolf kills (Sillero-Zubiri, 2009). Spotted Hyaenas (*Crocuta crocuta*) are known to follow packs of African Wild Dogs (*Lycaon pictus*) and take over their kills (Van Lawick & Goodall, 1970). Striped Hyaenas have been reported to feed on wolf kills (Toylyyev, 1970), and even to take over leopard (*Panthera pardus*) kills (Pocock, 1941). But if this is the case, why did the hyaenas move in the middle of the packs, and the wolves tolerate them? Third, the hyaenas and the wolves might be symbionts. Symbiotic partnerships are known among other carnivores (Minta et al., 1992). The hyaenas could benefit from the wolves' superior ability to hunt large, agile prey, while the wolves could benefit from the hyaenas' superior sense of smell (Mills, 1990) and their ability to break large bones, to locate and dig out fossorial animals such as tortoises (Holekamp & Kolowski, 2009), and to tear open discarded food containers such as tin cans (VD, pers. obs.).

Both the Grey Wolf and the Striped Hyaena are widely distributed in the Palaearctic region with a broad overlap of the ranges in particular the Middle East (AbiSaid & Dłoniak, 2015; Kasperek, Kasperek, Gözcelioğlu, Çolak, & Yiğit, 2004; Mech & Boitani, 2010). Southernmost Israel, where the observations took place, is one of the most arid places where Striped Hyaenas and Grey Wolves co-occur (Holekamp & Kolowski, 2009; Sillero-Zubiri, 2009), with average annual precipitation of just 29 mm (Orni & Efrat, 1971). Such extreme conditions could drive the two species into the unusual symbiosis. However, the possibility of wolf-hyaena symbiosis is not yet supported by any other data.

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No potential conflict of interest was reported by the authors.

**References**

- AbiSaid, M., & Dloniak, S. M. D. (2015): *Hyaena hyaena*. *The IUCN Red List of Threatened Species 2015*. www.iucnredlist.org [downloaded on 20 December 2015].
- Fox, M. W. (1971): *Behaviour of wolves, dogs and related canids*. Wenatchee, WA: Dogwise.
- Heptner, V. G., & Sludskii, A. A. (1992): *Mammals of the Soviet Union 2, Part 2. Carnivora: hyaenas and cats*. Leiden, Netherlands: Brill.
- Hofer, H. (1998): Striped hyaena *Hyaena (Hyaena) hyaena* (Linnaeus, 1758). Pp. 21–26. In: M. L. G. Mills, H. Hofer (Eds.), *Hyaenas. Status survey and conservation action plan*. Gland, Switzerland: IUCN/SSC Hyaena Specialist Group.
- Holekamp, K. E., & Kolowski, J. M. (2009): Family Hyaenidae (hyenas). In D. E. Wilson, R. A. Mittermeier (Eds.), *Handbook of mammals of the world* (vol. 1. Carnivores., pp. 234–261). Barcelona: Lynx Edicions.
- Kasperek, M., Kasperek, A., Gözcelioğlu, B., Çolak, E., Yiğit, N. (2004): On the status and distribution of Striped Hyaena, *Hyaena hyaena* in Turkey. *Zoology in the Middle East*, 33, 93–108.
- Kruuk, H. (2014): *The spotted hyena: a study of predation and social behavior*. Brattleboro, VT: Echo Point Books & Media.
- Mech, L. D., & Boitani, L. (2010): *Canis lupus*. *The IUCN Red List of Threatened Species 2010*. www.iucnredlist.org [downloaded on 20 December 2015].
- Mendelssohn, H., & Yom-Tov, Y. (1999): *Fauna Palaestina: Mammalia of Israel*. Jerusalem: Keterpress Enterprises.
- Mills, M. G. L. (1990): *Kalahari hyaenas: The comparative behavioral ecology of two species*. London: Unwin Hyman.
- Minta, S. C., Minta, K. A., & Lott, D. F. (1992): Hunting associations between badgers (*Taxidea taxus*) and coyotes (*Canis latrans*). *Journal of Mammalogy*, 73, 814–820.
- Orni, E., & Efrat, E. (1971): *Geography of Israel*. Jerusalem: Israel Universities Press.
- Pocock, R. I. (1941): *The fauna of British India including Ceylon and Burma (Mammalia Vol. II: Ailuroidae and Arctoidea)*. London: Taylor & Francis.
- Sillero-Zubiri, C. (2009): Family Canidae (dogs). Pp. 352–447. In: D. E. Wilson, R. A. Mittermeier (Eds.), *Handbook of mammals of the world. Vol. 1. Carnivores*. Barcelona, Spain: Lynx Edicions.
- Toylyyev, B. (1998): *Türkmenistan wagsyy* [Carnivores of Turkmenistan]. Ashgabat: Ylym.
- Van Lawick, H., & Goodall, J. (1970): *Innocent killers*. London: Collins.