

LIVESTOCK GUARDING DOGS IN EUROPE:

PAYING ATTENTION TO THE CONTEXT IS IMPORTANT WHEN MANAGING COMPLEX HUMAN - WOLF - DOG RELATIONSHIPS

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1. Introduction

In the European continent, the impacts of social and ecological changes during recent decades has led to a general trend for the “lowlands” to see an intensification of agriculture and increase in human populations and the “highlands” (and other marginal areas) to see a reduction in extensive agriculture and a decrease in human population (Meeus et al., 1990; MacDonald et al., 2000). The reduced human pressure on habitats has led to the reforestation of the landscape and the recovery of wildlife species – including highly symbolic species like wolves and bears (Linnell et al., 2008). These changes are also creating a wide range of challenges for rural populations, and what is often perceived as environmental “benefits” (mostly among the urban public) such as the recovery of wolf populations becomes the most contested symbols of “negative” change (mostly among the rural public).

There has been widespread resistance among rural people against accepting the presence of nature protection activities in general, notably the recovery of large carnivores, and adopting the technical measures

that accompany nature protection actions [e.g. introduction of Livestock Guarding Dogs (LGDs), electric fences, night-time enclosure of sheep]. This shows that there has been a failure to recognise and understand the importance of the socio-cultural aspects of human-wildlife conflicts. Indeed, while the ecological, economic and technical aspects of these conflicts have been widely studied across Europe, the social science toolkits have only been recently deployed. This is despite widespread recognition of the importance of non-economic social issues such as loss of identity and tradition in the face of change, the recognition of local knowledge and way of life, as well as the specific link between livestock breeders and domestic animals at work (Ingold, 2000; Höchtl et al., 2005; Porcher, 2006; Martin et al., 2013).

Environmental anthropology can potentially make a very important contribution to this topic and to understand the complex system in which people’s perceptions, knowledge and practices are embedded. By shedding light on the overall context, anthropology can explore the way people perceive their place in nature, the overall relationship between nature and

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culture, and especially the fundamental relationship between wild and domestic that lies at the heart of the modern conflicts in rural areas. In order to make a direct link to both anthropological conceptual models (nature vs. culture, domestic vs. wild) and concrete attempts to address material aspects of the conflict (adoption of protection measures) we have recently completed an ethnographic field study to understand how the domestic dog can modulate the human – wolf relationships.

We set out to explore the role of the dog in modulating the relationships between humans and wolves (Lescureux and Linnell, 2014) in three countries: the Republic of Macedonia, Poland, and Bulgaria. These countries have different practices in terms of hunting and sheep breeding, allowing us to compare different types of human – wolf relationships according to the way that hunting dogs and LGDs are used. Our main conclusions concern 1) the potential impact of LGDs on landscape in a context of rural abandonment, 2) the contrasting uses of LGDs in traditional and modern contexts, and 3) the surprising potential negative effect of LGDs in a context of shared landscape between livestock breeders and hunters. These conclusions allow us to draw some practical recommendations in terms of mitigation measures in carnivore conservation actions. We observed differences in sheep breeding practices and also differences in the way local people are using LGDs between Macedonia, Bulgaria and Eastern part of Polish Carpathians.

These differences are mainly due to the fact that while livestock breeding traditions, including the use of LGDs, have been kept in Macedonia, few traditional livestock breeders remain in the Polish East Carpathians. Most of our Polish informants were new livestock breeders also working with other agricultural and non-agricultural activities in parallel. The situation in the Pirin mountains of Bulgaria is somehow intermediate. Some livestock owners are breeding sheep as their main activity. They own a flock and have been traditionally keeping LGDs. Others just own a few sheep and flocks from several owners are cooperatively herded. These herders have only started to use LGDs in the last decade thanks to the combined actions of environmental and rural development NGOs (cf. Sedefchev, 2005).

2. LGDs and landscape in a context of rural abandonment

The differences between countries allowed us to observe the impact LGDs can have on livestock breeders' use of their landscape. Indeed, most Macedonian livestock breeders from the Sharr Mountains are still transhumant and migrate to alpine pastures during summer, grazing their sheep in open landscapes with the help of shepherds and LGDs. In a context of rural abandonment and shrub encroachment on alpine pastures, LGDs allow the maintenance of sheep grazing in places where it would be dangerous (from the point of view of depredation risk) to graze without dogs, i.e. in shrub covered places or even in the forest when temperatures are too hot for the flock to be in the open during the day. Dogs are constantly scanning the area when the flock is moving and especially emboldened by the shepherds when coming close to dangerous areas.

In the eastern Polish Carpathians, only a few of the livestock breeders we met were still transhumant. Many sheep breeders kept their sheep close to the village, inside fenced fields or fenced meadows with one or two livestock guarding dogs inside (cf. also Śmietana, 2005). There were no shepherds staying with the sheep, and they freely grazed inside their enclosures. In this context, LGDs do not help the flock graze in bushy places or in the forest. However, most of these fenced meadows are surrounded by forest and are potentially highly exposed to wolf attacks. Electric fences are only being used to protect sheep during the night in Poland. Therefore, in this situation the use of LGDs prevents the wolf from coming into the non-electrified enclosures, and allows livestock breeders to keep sheep without attending shepherds in meadows surrounded by forest and wolves.

Our investigations clearly show that LGDs have a potential (indirect) impact on the landscape, since they permit shepherds to avail of grazing sites close to and even inside the forest. Moreover, in a context of rural abandonment and bush encroachment like in the Balkans, LGDs can potentially slow down the vicious cycle of land abandonment leading to loss of grazing pastures and increased difficulties to maintain livestock breeding activities. Our results also show contrasting approaches to landscape and wolf presence in contrasting situations that we can analyse following

the ancient Roman classification of landscape. In the Balkans wolves have always been present and shepherds kept their traditional husbandry methods to protect the flock. They “fight” against the wolf which is conceptually viewed as crossing the perceived border between *silva* (forest) and *saltus* (grazing area) or *ager* (cultivated fields) (Lescureux and Linnell, 2010). Thus, LGDs are used to maintain borders (between the “domestic” flock – and the “wild” wolf) and also to cross it in the other direction, allowing herders to go into the forest (*silva*) with the sheep.

In the eastern Polish Carpathians, wolves have always been present too, and it is rather livestock breeding which is coming back and having to adapt to a difficult situation (meadows surrounded by forest). Breeders are adopting some of the traditional husbandry methods which are still in use in the Tatra Mountains (a mountain range in the western Carpathians on the Polish/Slovakian border), but are also adapting them to the context of village meadows close to the forest, not using shepherds but combining LGDs and electric fences. Thus, they can maintain the presence of *saltus* enclaves inside the *silva* landscape.

3. The importance of the shepherd – dog team in the traditional use of LGDs

During our investigations, we had the opportunity to meet three types of LGDs users:

1. Livestock breeders (LB) who are traditionally using LGDs;
2. LB who were using dogs other than LGD breeds, but had started to use LGDs for the first time;
3. LB who started this activity without familial traditions and started to use LGDs for the first time.

In the Balkans, where traditional use of LGDs has been retained, sheep are always grazed on unfenced pastures by one or several shepherds accompanied by several LGDs whereas in the eastern Polish Carpathians we met many people who left the sheep alone with one or two LGDs in an enclosure, but without an attendant shepherd. Even though LGDs are always considered as relatively independent animals,



Sheep flock with shepherd and livestock guarding dogs in open landscape in Macedonia. Photo: Nicolas Lescureux.



In Bieszczady area, many small flocks are kept on forest meadows, protected by a fence and one or two dogs, in the absence of shepherds (eastern Polish Carpathians). Photo: Nicolas Lescureux.



Hunting dog “Balkanec” from Macedonia. These dogs are used to hunt wild boars, hares, and foxes but can sometimes be killed or injured by wolves and in some areas it happens they are killed by livestock guarding dogs (Republic of Macedonia). Photo: Nicolas Lescureux.



Rural abandonment is highly visible in mountain villages from north western Macedonia. Photo: Nicolas Lescureux.

it appeared quite obvious that when shepherds are present on the Balkan pasture, dogs and shepherds acted as partners. Both shepherds and dogs observed each other looking for cues to know how to react. If dogs smelt something, shepherds would notice it and encourage them to search and eventually to attack the intruder if it was dangerous for the flock.

This partnership between LGDs and shepherds appears to be characteristic of their traditional use and has to be kept in mind in the different projects trying to reintroduce the use of LGDs in places where they have disappeared (e.g. the Alps), or have never been used (e.g. the Nordic countries). The danger is that dogs can show unwanted behaviour (e.g. chasing wildlife, attacking sheep, attacking hikers and pet dogs) and will not be corrected if used in the absence of a shepherd. The use of dogs without permanent shepherding can be a common feature where LGDs are being reintroduced in western Europe. Indeed, due to low agricultural income in sheep breeding, high labour cost and the lack of appropriate infrastructures (such as cabins), many livestock owners can't afford to hire shepherds. Using LGDs without shepherds may require a selection for very different traits (i.e. less aggression) than previously which may possibly reduce their effectiveness against large carnivores.

4. LGDs: a mitigation measure raising

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unexpected conflicts

In the Balkans, hunters traditionally hunt in groups, especially for wild boar, and use several free-ranging dogs which are released in the forest in order to drive the wild boar towards the hunters. The coexistence of this hunting method with wolf presence generates two types of conflicts. Firstly, there is a direct conflict between hunters and wolves since hunting dogs are sometimes killed by wolves. Almost all hunters we met in Macedonia reported they had experienced having dogs injured or killed by wolves. A second conflict occurs when dogs are lost for several days. Looking for food, they go out of the forest and end-up in the mountain pastures. Even if they do not attack the flocks, they can be killed by LGDs who are protecting the sheep against intruders. Therefore, some conflicts emerged between hunters and livestock breeders and there have been cases when hunters have killed LGDs in retaliation. Such conflicts didn't appear to exist in the eastern Polish Carpathians since the hunts are operated in a different way and hunting dogs are rarely lost in the forest, and also rarely killed by wolves. No conflicts appeared to exist there between hunters and livestock breeders about LGDs killing hunting dogs.

The first interesting conclusion that can be drawn from these conflicts is that behind an apparently ho-

mogenous rural response to an agent like the wolf, there can be internal divisions and conflicts between different traditional practices related to wolf management occurring in the same landscape. The second conclusion is that some conservation actions aiming at mitigating conflict, like the introduction of LGDs in places they were absent or from where they disappeared can cause unexpected new conflicts. Similar unexpected conflicts have also been reported from western Europe with LGDs threatening or attacking hikers and their pet dogs. Therefore it is important to pay attention to the social and ecological context in places where LGDs are still in use and to facilitate a trans-European transfer of knowledge between traditional and new users of LGDs in order to properly implement their introduction, in accordance with the other existing practices in the landscape like hunting or tourism.

Human – wolf – dog relationships are very complex and can vary according to social, ecological, and even individual context (Savalois et al., 2013; Gompper, 2014). In the face of expanding wolf populations, LGDs have been presented as a very efficient tool to mitigate conflicts between livestock breeding activities and the presence of large carnivores. As we have shown, on the one hand LGDs can certainly play a role in maintaining livestock breeding activities, and thereby grazing dependent cultural landscapes that are rich in biodiversity. On the other hand, they can also generate conflicts with other landscape users like hunters. It is important to keep in mind that LGDs have been used from centuries, have proven to be efficient, but were originally part of a complex pastoral system implying the constant presence of numerous shepherds. Therefore their direct transfer to modern multi-use landscape in Western Europe will not automatically be efficient or without problems. There is a strong need for a better understanding of the traditional use of LGDs as well as the different way to adapt them to modern contexts.

5. Conclusions

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