CHAPTER 9

LAOTIAN MAHOUTS AND ELEPHANTS

Glimpses into a multispecies system of medicine and care

Nicolas Lainé

EXPLORING HUMAN AND ELEPHANT KNOWLEDGE IN LAOS

Drawing on ethnographic data gathered among the Tai-Lue in north-western Laos, this chapter focuses on medicinal practices and care of working elephants. As part of a comparative anthropological project on pathogens (Keck et al., 2021), where I inquired into local perceptions of elephant diseases (Lainé, 2018), my informants insisted that village elephants have a rich knowledge of forest plants that they consume when they are sick. That is to say, mahouts are aware that when provided the plants necessary for a healthy diet, sick or infected elephants will supplement this diet by searching for specific plant species and parts of plants (bark, leaves or roots) that may be medicinal. In villages, contrary to elephant management in tourist or conservation centres, mahouts and elephant owners do not claim to control all aspects of animal feeding and care. For them, the forest is the equivalent of a pharmacy (*hank ka ya*) where elephants can choose from a diverse abundance of

vegetation and encounter a selection of medicines on their own. When a village elephant appears to be sick, the mahout voluntarily leaves the animal alone in the forest for a few days so that the elephant becomes healthy (*sabai*) again.

From a local standpoint, an ethnoveterinary analysis of practises of health and care for elephants in this region must include an additional and essential more-than-human element. That is, respect for the knowledge of the elephants themselves and their capacities for self-medication. Thus, the scope of my ethno-veterinary research was expanded to look at the diet of village elephants while searching for any possible converging utilisation of plants across humans and animals (Lainé, 2020 a). For data collection in the field, I mobilised two methods. First, the tools of ethnographic inquiry, which involve immersion with the population concerned, repeated observation of practises and their variants, and the observation and conduct of semi-structured interviews and life stories. Second, I mobilised the tools and methods of ethnoscience, including ethnobotany and ethnozoology (Hunn, 2012). A total of 36 mahouts and elephant owners were interviewed in northern Sayaboury province, primarily in the villages surrounding the town of Hongsa, between June and August 2016.

Drawing on my mahout-elephant ethnography, I will first report on a set of ethnoveterinary practices observed among mahouts and elephant-health specialists. These observations will highlight the similarities in human and elephant treatment, both in terms of rituals and medicinal remedies. Then, based on observations of the elephant diet, I will focus on specific specimens of plants to forward the hypotheses that medicinal knowledge is co-constructed and shared between humans and elephants. The conclusion highlights the existence of a multispecies system of medicine and care among Laotian mahouts and their elephants. This concept of multispecies medicine, in connection with other mahout/elephant research in Asia, will help open a broader reflection on the intimate and reciprocal influences of elephants and local populations. Considering their long cohabitation over several millennia and in the same environment, I will argue that the mutual attachment of humans and elephants constitute a multispecies culture based on sharing a set of practices and knowledge through imitation or interspecies borrowing.

LOCAL KNOWLEDGE OF ELEPHANTS

In Laos, village elephants benefit from a management and care system that involves the mahouts and the animal's owner. Moreover, depending on the nature of the symptoms exhibited by the animals, they can call upon specialists: the *mo*. In Laos, but more generally in the Thai language, the term *mo* refers to anyone endowed with a specific talent, knowledge or power, in particular doctors, magicians, astrologers or fortune tellers (Pottier, 1973). Some of these specialists—the *mo phi*—carry out their treatments via incantation; other specialists—the *mo ya*—by the use of plants. In order to distinguish between these two aspects of therapeutic treatment in Laos, I relied on the distinction made between ritual medicine performed by the *mo phi*, and remedial (plants) medicine by the *mo ya* (Pottier, 2007).

RITUAL MEDICINE

In Laos, the everyday relationship between elephants and their mahouts is highly ritualised. As spirits (*phi*) are believed to be omnipresent in everyday life, elephants, like humans, must be sure to live in harmony with them in their daily routines. For example, every evening, when the mahouts leave their elephants in the forest after a day's work, the mahout must inform the spirit of the forest (*phi pa*) and the god of the soil and land of the specific territory (*chao don chao dee*) of the presence of the animal on their place, and ask them to take care of and protect the animal in case of attack by other animals, and also by evil spirits (*phi phai*).

The ritual specialists, *mo phi*, intervene throughout the life of the animals. When elephant capture was still in practice in Laos, these specialists were indispensable for the smooth running of operations. According to the pit trap method (*khoum xang*) used in the northwestern part of the country, *mo phi* were first responsible for bringing the captured animal back to the village and ensuring that it was not followed by the animal's mother or by malicious spirits. These specialists were then in charge of training the captured animal through a ceremony that bonds the elephant to the household of its owner. In the village, each elephant belongs to its owner's household, of which he is considered as a true family member. Thus, each

village elephant lives under the protection of the spirit of the house, the *phi huean*. For example, whenever an owner leaves his home for several days to work with the animal in the forest or for any other purpose, he has to inform his *phi huean* and ask for protection for both himself and the animal in the form of prayer. In addition to their protective role, the *phi huean* has the ability to act directly on the health or behaviour of the elephants, depending on the state of social relations between people. An intervention of a *mo phi* is often called to mediate the relations between humans, elephants and the *phi huean*. Animal owners also have to call upon these specialists if they want to sell their elephant, as well as when the animal dies. In this case, the *mo phi* carries out the ritual of detachment to assure the elephant's family that its spirit will not return to disturb them and that any bad omens are discarded.

In Laos, on the occasion of the New Year (*pi mai*), elephants celebrate in the *baci* ceremony (Figure 1). This ceremony aims to gather the vital force (*kwaan*) present in the animal body. This belief, and the related ceremony, concerns other large mammals such as buffalos. The *baci* ceremony takes place in three stages and is usually held in the enclosure

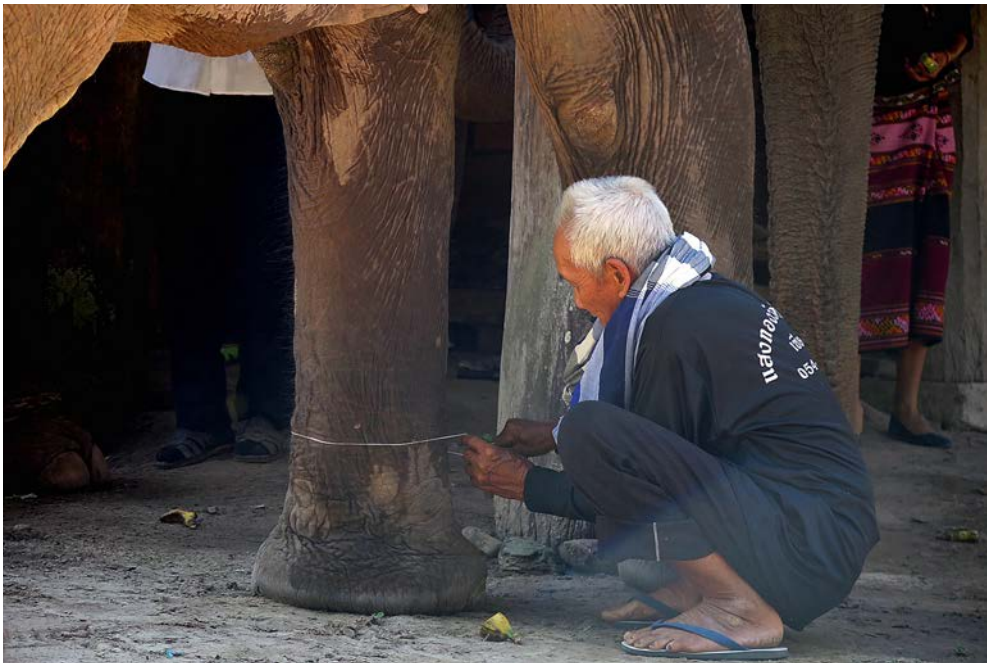

Figure 1 | A *baci* ceremony observed in Viengkeo.

of the elephant owner's household. The first step is to chase away evil spirits from the elephant's body, then to call back and gather the *kwaan*, which is done using white thread tied to the animal's legs, ears and trunk. Each member of the household is then invited to go and attach a white string to the elephant's ears, feet and trunk. These strings are connected to each other and held by the *mo phi,* who will first ask the *kwaan* to remain in the body. He will then feed them and make wishes, in particular for the animal's good health.

The *baci* ceremony I observed during fieldwork refers to the soul-calling ceremony found in many other places in Southeast Asia. For example, a similar practice, known as *giju*, is found among the Karen of northern Thailand (Greene, 2021). The *baci* ceremony is very common in Laos. Since humans are also believed to possess *kwaan* in their bodies, the ceremony is also held for them. This last point and the others presented above underline that in Laos, there is a correspondence between the ritual treatment of humans and elephants.

THE MEDICINE OF PLANTS

In the village, the *mo ya* heals people and animals with the help of remedies composed of plants. Regarding therapeutic practises in Laos, French ethnobotanist Jules Vidal, who conducted extensive botanical exploration in French Indochina, reminds us that "9/10ths of the substances used in the art of healing are of plant origin" (Vidal, 1961: 602).

Mo ya use therapeutic codices called *Thamla ya*, literally "treatise on plants". Apart from elephants, the recipes may apply to several animals, such as horses or buffaloes. Each treatise describes a set of compositions of plants for daily care, with generally one or more variants if the first does not work. There are, for example, compositions to combat constipation; others are for if the animals have sore legs, a blocked jaw, skin irritation, loss of appetite, sore throat, or when the animal shows signs of weakness or low blood pressure. For example, to treat abscesses caused by the rubbing together of the different ropes needed to manage elephants working in the forest, it is prescribed to first boil some *nam hanh* (*Acacia concinna*) roots and then wash the elephant's skin with it. Then, the abscesses are rubbed with mango bark, *mak kok* (*Spondias pinnata*), and left to dry. This operation must be repeated daily until the abscess deflates and heals.

In the village of Viengkeo, I collected and analysed a specific *Thamla,* which includes the preparation of vitamins for elephants: *ya bam loung* (literally "ball of plant vitamins"). A preparation of *ya bam loung* consists of a mixture of a dozen (according to some variations) different ingredients. These vitamin balls are prepared in large quantities, more than 40 balls at a time, enough to fill a bag of rice for storage. They are given to elephants especially when the animals are involved in heavy work such as logging, operations that take place over several days or even weeks. The vitamin balls are an indispensable food supplement taken into the forest with all the other working equipment. Different preparations serve different purposes. For example, when an animal appears too strong or dangerous to humans, as with excitable male elephants in the period of musth *(gnoi nya),* mahouts intend to calm and weaken them by giving elephants *mak phak,* made from the fruit of a vine plant known as the wax gourd or winter melon (*Benincasa hispida*).

Drawing on their immediate environment, and taking into account the health condition of the animals, mahouts from northwestern Laos have developed unique forms of ethnoveterinary knowledge and practices. However, while the information presented so far indicates a local system of care regarding the primary day-to-day needs of village elephants, another aspect of this system includes the ability of the elephants to maintain their own health. Based on an exploration of the diet of elephants *in situ*, i.e. in the village and the surrounding forests, the following section reports on the ability of elephants to select and consume particular plants on specific occasions.

AN ELEPHANTINE KNOWLEDGE?

During fieldwork, I explored the elephant diet via an ethno-ethological approach (Brunois, 2005). Access to the elephants' knowledge and understanding of their environment was obtained through the mahouts' mediation, particularly how they perceived the elephant's behaviour. I first questioned the mahouts about their knowledge of the plants consumed by elephants and also went out into the forest with them and the animal. I directly observed which species and plant parts (root, branch, fruit, leaf, liana, bark) elephants consumed. Fieldwork outings occurred

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Figure 2 | A mahout observes his elephant feeding in the forest.

in the morning, accompanying the mahout as they went to fetch the animal or following the mahout and elephant during their daily activities at work (Figure 2).

GLIMPSES INTO THE WORKING ELEPHANT DIET

As a large herbivorous mammal, an elephant can consume up to 250 kg of vegetation per day (Sukumar, 1993). Elephants spend a significant part of the day eating or searching for food, and their diet varies considerably depending on the environment. My examination allowed me to highlight general information on the elephant's diet and to note important variations in the plants consumed throughout the year. For example, during the dry season (*ladou leng*), elephants consume more

bamboo shoots (*nor mai bon*) and bananas (*kwai*). Interpretations provided by mahouts suggest that these foodstuffs contain large amounts of water. However, also according to mahouts, elephants do not have much choice in the dry season and must eat whatever they find. This is not the case during the monsoon season (*ladou phone*), when they have more choices and can diversify their diet. Elephants prefer the leaves from a variety of bamboo sprouting during this period (*may bon/may lai* of at least 8 varieties). During this period of heavy rainfall, elephants eat fewer bananas, eating only banana flowers instead (*douak kwai*).

At first sight, it was difficult for mahouts to list all the plants eaten by their elephants, which could span more than a thousand species, according to some. Nevertheless, some with whom I decided to conduct fieldwork were able to distinguish between plants consumed strictly as part of the diet, called *ahan xang*, and those indicated as part of the medical diet, i.e. medicinal plants called *ya pua xang*. Based on this distinction, and drawing on mahout observations, I systematically categorised types of elephant symptoms (fatigue, diarrhoea or digestive problems, injuries, etc.) as well as the corresponding plant species that elephants were said to consume in order to maintain themselves in good health or for treatment. The mahouts, who have accumulated knowledge about elephant feeding habits over generations, have thus been able to "be attentive to the ingestion of unusual material", as Gillet and Pujol pointed out back in 1969 (Gillet & Pujol, 1969), and as Krief and Hoste remind us when they present the conditions to detect self-medication behaviour in animals (Krief & Hoste, 2014).

Among the plants repeatedly said to be consumed for treatment, two, in particular, caught my attention: the first because it may provide an example of elephant self-medication and the second as a potential example of the sharing of medicinal knowledge with humans.

ELEPHANT SELF-MEDICATION AND CONVERGENCE OF MEDICINAL-PLANT USE BETWEEN HUMANS AND ELEPHANTS

The first of these plants is a liana, called *kheua nam nê* (*Mucuna pruriens*). The owner was quite clear on the reasons why his elephant

consumed this plant. Although available throughout the year and in abundance, his elephant consumed it only once a year and always during the same period (generally in January). The animal only took about ten bites each time. For the rest of the mahouts interviewed, this liana is not part of the regular diet of elephants. Discussion with the owner led to the hypothesis that this liana plays a deworming role. Moreover, as the owner indicated, this elephant had subsequently been rented out to a tourist camp, where it had undergone deworming by injections. Since then, he has no longer observed his elephant consuming this liana. Several in vivo and in vitro chemical analyses do indeed point to a deworming role for the leaves of this vine (Thyaga et al., 2017; Vasudeva Rao & Shanpru, 1991).

The same applies to the roots (*hak*) of *mak khunta* (*Harrisonia perforata* - Rutaceae), which have proven virtues against diarrhoea (*ya tai thong*). Several ethnobotanical studies, and in particular those of Jules Vidal for Indochina, suggest the roots have antimicrobial, anti-oxidant, but also anti-malarial and anti-inflammatory properties (Vidal, 1961). In 2015 in the village of Ban Ha, 82-year-old Chanty Vanadee, a former elephant owner, shared an anecdote with me. He recalled an afternoon in the forest with his elephant when he noticed that the elephant's belly was particularly swollen. Despite his commands, the animal did not want to go straight back to the village and did not listen to him. The elephant seemed to be looking for something in the forest, which he found when he saw the *thun khunta* tree. At that moment, Chanty even had to climb down from the neck of the animal, which literally uprooted the tree to consume its roots. Soon after, Chanty remembers that his animal was defecating in large quantities, more than usual. When he returned to the village, the animal's belly was no longer as swollen and appeared healthy. Recent research linking elephant self-medication practices and human pharmacopoeia elsewhere in Laos (Dubost et al., 2019) and in Thailand (Greene et al., 2020) have shown similar results regarding such species.

Mak hunta is also well known to the mahouts and the owners I met during the survey. On several occasions, the plant was mentioned as one of the remedies given to elephants in case of diarrhoea or dysentery. Mahouts are familiar with the leaves of this shrub because they are also boiled and eaten as an herbal tea in case of acute diarrhoea in humans.

MEDICINE AND CARE AS PART OF HUMAN-ELEPHANT MULTISPECIES CULTURES

In Laos, the ethnographic survey revealed a similarity in the ritual treatment of humans and animals (i.e., protection by the same domestic spirit or the collective *baci* ceremony). On the other hand, information collected on elephant diets revealed a possible convergence of plants used for medicinal purposes between humans and animals. Such is the case regarding *mak khunta*. In the village, the leaves of this bush are boiled and consumed as herbal tea. From the animal's point of view, it is the root that is eaten and not the leaves. This points to what Jules Vidal had already noted, humans and animals can consume the same essences, but if animals consume the raw materials, humans transform them (Vidal, 1958). Such convergence, which deserves to be deepened and extended to the entire elephant diet, reminds us of what Hubert Gillet wrote in 1969 in his ethnobotany course at the National Museum of Natural History in Paris about human-animal cohabitation and the feeding behaviour of wild animals: "It is possible that the observation, made by some natives, of the occasional removal of certain bark from trees in the African savannah may have drawn their attention to these trees as medicinal plants" (Gillet & Pujol, 1969: 19-20).

From a local point of view, there is no doubt that elephants possess an intimate and detailed knowledge about their environment. Mahouts and elephant owners, who are engaged on a daily basis with them, clearly understand the skills and capacity of elephants and mobilise this elephantine knowledge in a variety of situations. In Laos, for example, elephant knowledge of their environment was exploited by elephant catchers, who dug capture pits on migration routes in mineral-rich soil called *pong,* which is well known and sought after by wild elephants (Lainé, 2017).

To some extent, the Laotian human-elephant system of medicine and care can be considered as one aspect of a broader multispecies human-elephant culture, as shown by anthropologist Alexander Greene among the Karen and elephants in Thailand (Greene, 2021). In my recent book (Lainé, 2020 b) on the relationships between the Khamti and elephants in Northeast India, I also touched upon the idea of the existence of an elephantine culture at the village level. This was reflected in the implication of individual animals approaching wild herds in the forest or

during the socialisation process of newly-caught elephants. Both these operations are made possible only thanks to the active participation of *konkie,* or adult village-elephants. Later on, when the animal is put to work, there is no specific elephant training. Instead, as soon as they reach their adult size, elephants are taken along in the forest in order to observe their congeners and learn from them. It is indeed by imitation that they learn how to achieve the requested tasks in the forest. Clearly, the present Laotian case on medicine and care for working elephants not only expands the role of social transmission of practices between elephants regarding plants, it also opens possibilities of shared and co-produced medical knowledge with humans.

Be it in Laos in the present case, or Thailand, Northeast India or elsewhere in Asia, the daily engagement of humans and elephants have led to a mutually beneficial sharing of affects, meaning, and a distinct knowledge of the environment, which could be considered as a unique multispecies culture. Within this continent especially, the long-term shared life (Lestel & Taylor, 2013) between local humans populations and elephants offer those in the animal's charge access to the "world" of elephants, to observe them and include some part of it in their own practices to enrich their knowledge. Elephants can remind us that we, as humans, are not the sole repositories of knowledge when it comes to biodiversity. On the contrary, we must learn to collaborate with nonhuman animals and consider them as co-producers of knowledge. That elephant-keeping cultures in South and Southeast Asia have integrated elephantine knowledge into the understanding of their environment undoubtedly represents a crucial starting point for learning new ways of living in an endangered planet.

REFERENCES

Brunois F., 2005 – Pour une approche interactive des savoirs locaux : l'ethnoéthologie. *Journal de la Société des Océanistes,* (120-121): 31-40.

Dubost J.-M., Lamxay V., Krief S., Falshaw M., Manithip C., Deharo E., 2019 – From plant selection by elephants to human and veterinary pharmacopeia of mahouts in Laos. *Journal of Ethnopharmacology,* 244: e112157. https://doi.org/10.1016/j.jep.2019.112157

Gillet H., Pujol R., 1969 – *Cours d'ethnozoologie (1969-1970), 3e cycle.* Paris, Muséum national d'Histoire naturelle, 65 p.

Greene A., 2021 – Speaking with an upside-down tongue: Reflections on human-elephant multispecies culture in northern Thailand. *Gajah*, 53: 4-19.

Greene A., Panyadee P., Inta A., Huffman M., 2020 – Asian elephant self-medication as a source of ethnoveterinary knowledge among Karen mahouts in northern Thailand. *Journal of Ethnopharmacology*, 259: e112823. https://doi.org/10.1016/j.jep.2020.112823

Hunn E., 2012 – « Ethnozoology ». *In* Anderson E. N., Pearsall D., Hunn E., Turner N. (eds.): *Ethnobiology*, Hoboken, John Wiley and Sons: 83-96.

Keck F., Lainé N., Morvan A., Ruhlmann S., 2021 – Social representations of animal diseases: anthropological approaches to pathogens crossing species barriers. *Parasite,* 28: 35. https://doi.org/10.1051/parasite/2021032

Krief S., Hoste H., 2014 – « Les animaux pratiquent-ils la médecine par les plantes ? ». *In* Morand S., Moutou F., Richomme C. (eds.): *Faune sauvage, biodiversité et santé : Quels défis ?* Versailles, Quae: 75-89.

Lainé N., 2017 – Bo mee xang pa kor bo mee xang *(Sans éléphant de forêt, il n'y a plus d'éléphant)*. *Péninsule*, 75 (2): 73-99.

Lainé N., 2018 – Elephant tuberculosis as a reverse zoonosis. Postcolonial scenes of compassion, conservation, and public health in Laos and France. *Medicine Anthropology Theory*, 3 (5): 157-176. https://doi.org/10.17157/mat.5.3.379

Lainé N., 2020 a – Pratiques ethno-vétérinaires sur les éléphants au Laos : un savoir co-construit avec les animaux ? *Revue d'Ethnoécologie,* 17. https://doi.org/10.4000/ethnoecologie.5917

Lainé N., 2020 b – *Living and working with giants: a multispecies ethnography of the Khamti and elephants in Northeast India*. Paris, Muséum national d'Histoire naturelle, 272 p. https://doi.org/10.5852/nes02

Lestel D., Taylor H., 2013 – Shared life: An introduction. *Social Science Information*, 52 (2):183-186. https://doi.org/10.1177/0539018413477335

Pottier R., 1973 – Note sur les chamanes et médiums de quelques groupes Thai. *Asie du Sud-Est et Monde Insulindien*, 4 (1): 99-109.

Pottier R., 2007 – Yû dî mî hèng, *être bien avoir de la force. Essai sur les pratiques thérapeutiques lao*. Paris, EFEO, 544 p.

Sukumar R., 1993 – *The Asian Elephant: Ecology and Management*. Cambridge, Cambridge University Press, 255 p.

Thyaga R., Divya B. J., Suman B., Venkataswamy M., 2017 – The Traditional uses and Pharmacological Activities of *Mucuna Pruriens* (L) DC: A Comprehensive Review. *Indo American Journal of Pharmaceutical Research*, 7 (01): 7517-7525. https://doi.org/10.5281/zenodo.1007255

Vasudeva Rao M. K., Shanpru R., 1991 – « Some plants in the life of the Garos of Meghalaya ». *In* Jain S. K. (ed.): *Contribution to Ethnobotany of India,* Jodhpur, Scientific Publishers: 179-186.

Vidal J., 1958 – La Thérapeutique par les plantes au Laos. *JATBA*, 5 (10): 601-616.

Vidal J., 1961 – Les plantes utiles du Laos (Suite). *JATBA*, 8 (12): 693-702.

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Cover: © Paul G. Keil
The mahout, Oupe, caringly hand-feeding the sub-adult female, Rohila, before she returns to the forest for the evening (Kamrup, Assam, 2014).

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Paper ISBN: 978-2-7099-2993-6
PDF ISBN: 978-2-7099-2994-3
Epub ISBN: 978-2-7099-2995-0