

HOW MONGOLIAN PASTORALISTS MANAGE THEIR HERDS OF SHEEP AND GOATS: HERD FORMATION AND CONTROL IN ARKHANGAI PROVINCE, MONGOLIA

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Abstract.

Goats and sheep are the oldest domestic gregarious herbivores. Day-trip herding of sheep and goats can be considered a man-animal interaction that forms the basis of the domestication process. Quantitative studies of man-animal interactions during day-trip herding have been conducted in Africa, where herds of domestic sheep and goats with fixed membership have two unique behavioral characteristics (Ohta 1982; Shikano 1984, 1999; Hazama 2002). One characteristic is that herds do not mingle with each other when they happen to come in proximity during day-trip herding. If they accidentally join, they separate by themselves. The other is that they have the ability to learn the route of the day-trip and repeat it autonomously with little intervention by the herders. It is thought that these characteristics are acquired with the herders' repeated interventions during day-trip herding (Tani 1976, Ohta 1982, Shikano 1984, 1999). However, I observed different results in Mongolia. Herds of sheep and goats mingled frequently, and on all such occasions, the herders struggled to restore them to the original herds as quickly as possible. The differences between Mongolia and other areas appear to stem from differences in socio-economic factors such as the social organization involved in animal management, the folk knowledge of animal behavior, the concepts of animal management, and the influences of the natural and social backgrounds, as well as technical factors like herding skills.

This article clarifies how herds of sheep and goats are managed in Mongolia from a socio-cultural perspective.

ABOUT THE RESEARCH

The research was carried out in Bayan-Khairkhan *bag*¹, Chuluut District, Arkhangai Province, for 240 days from May to November 1997, February to April 1998, and March to April 1999. Hereafter, the research area is referred to simply as "Bayan-Khairkhan". The population of Bayan-Khairkhan are Khalkha-Mongols, who engage in nomadic pastoralism as a subsistence economy, keeping sheep, goats, horses, cattle, and yaks. While staying with nomadic families in Bayan-Khairkhan, I made observations and conducted interviews to examine the social and

¹ A *bag* is the smallest administrative unit of Mongolia since the 1990s.

environmental background of their subsistence economy and way of life, and to explore the indigenous concepts of animal management and the practice of day-trip herding.

RESIDENTIAL GROUPS AND HERD FORMATION

In the modern Mongolian pastoral system, a nuclear family forms a household, which is the basic unit for the ownership and consumption of domestic animals and also a residential unit, as they live together in one mobile residence, called a *ger*. The household is also responsible for decisions about seasonal movements, such as when and where to move, in order to utilize pastureland appropriately in accordance with each household's herding plan (Kazato 1999). Households are self-sustaining in possession, consumption and nomadic movements. However, in the sphere of production, households cooperate, forming residential groups at seasonal campsites. A residential group is a temporary group of households, whose *ger* are placed 5 to 50 meters apart. In Bayan-Khairkhan, the residential groups consisted of one to seven households and persisted for several weeks or months. The households that belong to a temporary residential group combine their goats and sheep in a single herd and share the work of day-trip herding in turn to lighten and manage the work of each household more efficiently.

Both the locations of campsites and the compositions of residential groups change every few weeks or months with the seasonal movements of each household. In addition, the pastoralists often visit *bag*, district, and provincial centers, or even the capital city, for reasons of health or education. On such occasions, they entrust their domestic animals to other households, in the same or different residential groups, for a few weeks or months (Kazato 1999, 2002). Consequently, the membership of a herd often changes owing to changes in the composition of residential groups and entrustment of animals, both of which are the result of the fission and fusion of these nomadic pastoralists.

The herd formation system in Mongolia has two characteristics; one is that herds for day-trip herding consist of several groups of animals that are owned by different households, and the second is that the arrangement of such groups, in other words, the membership of the herds,

changes frequently.

In the study area, the herds consisted of sheep and goats, and 70-90% of the animals were sheep. People recognize behavioral and biological differences between these two species and take care of sheep and goats in different ways, especially during the birth season in spring and the milking season in summer. In autumn and winter, the herdsmen deal with sheep and goats in a similar manner during day-trip herding. Indeed, the herds rarely separate by species while they are walking or grazing, and no particular species or individual animal leads a herd.

ECOLOGICAL AND SOCIAL ENVIRONMENT OF DAY-TRIP HERDING

The vegetation in the study area is forest-steppe. While the slopes in the south are forested, the remaining area is grassland suitable for herds. A river and streams run through the pasture, varying the terrain.

The campsites vary seasonally: the open basin of the Khanui River is preferred in summer, while the narrow valleys of its branches are used from autumn to spring. Most households have one or two candidate campsites for each season. The places considered for summer and autumn are areas several kilometers in diameter, whereas the winter campsites are small areas with fixed animal pens. Some households also have fixed animal pens at the spring campsites. Households generally have annual movement plans to pass through such candidate campsites, although the plans are often changed and unplanned places are then chosen for social reasons or in response to changes in the weather.

The natural environment of day-trip herding varies seasonally. The summer pasture is open with good visibility, so the herdsmen can watch their herds from the campsites. By contrast, the pastures used during the other seasons are on steep slopes and have limited visibility, so the herdsmen accompany their herds most of the time. For water, the animals drink from streams in summer and autumn and eat snow in winter and spring.

Residential groups usually use pastures within seven kilometers of their campsites, and

the pastures of different residential groups overlap, as the campsites are often only hundreds or thousands of meters apart along basins or valleys. Consequently, the herds of different residential groups often come close to each other during day-trip herding.

During day-trip herding, the animals can be threatened by thieves or wolves, and the herdsmen must guard against such threats so as not to lose their property. As the herdsmen consider it possible that they may also lose animals when two different herds mix, they try to retrieve all of their animals as quickly as possible if herds mingle during day-trip herding. They consider it risky to leave their animals in the herd of another residential group, because the members of the other group may not mention that the animals are in their herds, unless asked about them. If a herdsman realizes that an animal is missing and may be in another herd, they visit neighboring households to ask about the lost animal as soon as they can afford a day off from the work of day-trip herding, in case any of the households suddenly move away and separate their own animals from those of the residential group.

It is significant that when herds do mingle, almost all of the members of the different households that own the animals in each residential group come and work together to restore their herds. Normally, women in different residential groups seldom meet, since they usually remain near the campsites, while the men travel around the steppe with the herds and sometimes visit the campsites of other residential groups. Therefore, when mingling of herds does occur, it stimulates a social interaction among the scattered people that inhabit the steppe.

HERDSMEN'S CONTROL OVER THE HERDS

Herdsmen believe that without their management, the herds of sheep and goats would lose their way and not return to the campsites, be stolen, or be eaten by wolves. Moreover, two or three herds might mingle. This suggests that people think that domestic animals are not dependable. This view relates to their idea that the herdsman's intervention is indispensable during day-trip herding.

This concept of day-trip herding has developed over history. For example, "The Teachings of To Wan" (Hagihara 1999), the well-known text of the 19th century feudal lord of Mongolia, illustrates the concept that herdsman should control the behavior of animals at pasture. The text also outlines the indigenous methodology that has developed for using grassland and for fattening animals efficiently.

I observed how herdsman controlled a herd of 86 goats and 185 sheep during day-trip herding for 12 days in autumn, 1997. The herd consisted of animals owned by three households. The herd was lead in turn by two herdsman, ages 16 and 26, on alternate days. Each morning, the herdsman decided when and where to let the animals graze, walk, rest, and drink. The older herdsman made his own plan, while the younger herdsman acted on his father's instructions. In both cases, they followed their day-trip herding plan carefully in terms of both route and schedule (Kazato 1999).

My observations showed that herdsman intervened in their herds repeatedly throughout day-trip herding in Bayan-Khairkhan, in contrast to East Africa, where most intervention occurs within half-an-hour of departing from or arriving at campsites (Ohta 1982, Hazama 2000). In addition, the total intervention time was much greater than that reported for studies in Kenya. In my study area, the proportion of time spent in intervention acts during day-trip herding was 23.5% on October 5 and 26.3% on October 9, 1997, in contrast to 15.9% for the Turkana people in Kenya (Ohta 1982).

Furthermore, Mongolian herdsman usually ride horses for mobility during day-trip herding. The horses increase the herdsman's mobility considerably. Nevertheless, most of the interventions with the herd occurred after the herdsman dismounted, especially those that involved collecting animals together. The effect of intervention was more obvious when a herdsman was on foot rather than on horseback, as the animals began to run more quickly when a herdsman approached the herd on foot rather than on horseback.

Of note, although the herdsman's interventions involved little physical compulsion, the

herdsmen succeeded in controlling the animals. According to Shikano (1999), the animals learned to anticipate the meanings of the herdsmen's actions, and thus interactions consisting of the herdsmen's intervention and the reaction of the sheep and goats form several fixed patterns.

CONCLUSION

Nomadic pastoralists such as the Mongols maintain their domestic animals by grazing and do not rely on hay for feeding. This requires the efficient, sustainable use of pastureland to prevent overgrazing. This study showed that the pastoralists in Bayan-Khairkhan have detailed plans for the annual movement of campsites, as well as daily plans to cover a herd's route and activities. Both types of plans are designed to allow animals to graze efficiently.

Special features distinguish the pastoral system of Mongolia from those of other areas in terms of herd management such as: (1) the herding techniques used to control herd activity during day-trip herding, and (2) herd formation for day-trip herding.

The herding techniques used are distinctive, in that there is repeated intervention by the herdsmen during day-trip herding. This is because the animals are not considered reliable in terms of autonomous movement. Indeed, herds easily lose their way and mingle during day-trip herding. Consequently, there is no herd cohesiveness in Mongolia; herdsmen intervene much more than in Kenya. This is based on the Mongols' strong notion that the herdsmen's control is indispensable for day-trip herding.

During, the herds of sheep and goats involved in day-trip herding characteristically change members frequently because the animals belonging to the groups vary according to the social context of the nomads. The groups of animals owned by each household are the primary units. These units remain intact in all circumstances, such as during the seasonal movements of households and when entrusting animals to the care of another household. The membership of a primary unit is almost completely fixed, except for minor changes owing to reproduction, consumption, and exchange. The secondary units are a mixture of primary units. Each secondary

unit consists of animals owned by several households that form a temporary residential group for weeks or months. Furthermore, primary units belonging to other households are often added to secondary units for a short period, even when their owners do not join the residential group. Such secondary units are treated as one herd; they are forced to keep together each day during day-trip herding and are enclosed in one pen at night. However, the membership of such secondary units changes frequently with the fission and fusion of the households that make up the residential group and with the short-term care of animals belonging to other households.

Characteristically, when the herds of Mongols mingle during day-trip herding, the residential groups, fueled by their anxiety that they are at risk of losing their animals, struggle to separate the herds into the original groups as soon as possible. Such socio-cultural factors exaggerate the meaning of mingling herds, when the owners struggle to restore their herds, as a rare gathering of people who otherwise seldom meet. Perhaps the mingling of herds is not a mere technical problem of managing domestic animals, but is a practice that embodies the entire socio-economic life of pastoral Mongols.

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Abstract in Mongolian

Энэ сэдвэвт Монгол улсын Архангай аймагийн малын бэлчээрт хонь, ямаан сүрэг хэрхэн бэлчээрлэж байгааг маллагааны арга ухаан болон нийгэм, соёлын талаас нь задлан шинжлэх замаар судлав.

Зүүн Африкийн мал аж ахуйн жишээнээс хонь, ямаан сүрэг бэлчээрлэж байхдаа өөр мал сүрэгтэй нийлдэггүйгээс гадна хүний оролцоогүйгээр өөрсдөө бэлчээрлэдэг болохыг харж болно.

Харин Монголд малчдын ойлголтоор бэлчээрт байгаа хонь, ямаан сүрэг хүний оролцоо байхгүй бол төөрөх, өөр мал сүрэгтэй нийлэх, чононд идүүлэх, хулгайлагдах зэрэг эрсдэл өндөр байдаг. Мал сүрэг хоорондоо нийлэх явдал бодит байдал дээр их гардаг. Иймд бэлчээрийн мал сүрэгт их хэмжээний маллалгаа арчилгаа шаардагддаг.

Бэлчээрийн мал сүрэг хоорондоо нийлдэг нь монголд мал сүргийн бүтэц амархан өөрчлөгддөгтэй холбоотой. Энэ нь хэд хэдэн малчин өрх нэгдэн хот айлын зохион байгуулалтанд орж мал сүргээ нийлүүлж нэг сүрэг болгон хүч хавсран маллах замаар хамтын бүтээлч хөдөлмөр эрхлэдэгтэй холбоотой. Улирал солигдох бүрт малчин өрхүүд тус тусдаа бие даасан сонголт хийдэг тул хот айлын бүтэц хэдэн долоо хоногоос хэдэн сар тутамд өөрчлөгдөж байдаг. Мөн малчид хүүхдээ сургуульд сургах зорилгоор хэдэн долоо хоног, хэдэн сараар төв суурин газар оршин суухдаа малаа бусдаар харуулах явдал их байдаг.

Өөрөөр хэлбэл хот айл нэгдэх задрах процесс нь мал сүргийн бүтцийг мөн адил хувьсамтгай болгож хэдэн долоон хоногоос хэдэн сар тутамд өөрчилдөг. Энэ мэтчилэн энд тэндээс цуглуулж нийлүүлсэн мал сүрэг нь нэг сүрэг болж тогтолгүй, нэг өдөртөө нийлж салдаг тул малчин хүнээс нарийн малалгаа их шаардагддаг.

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