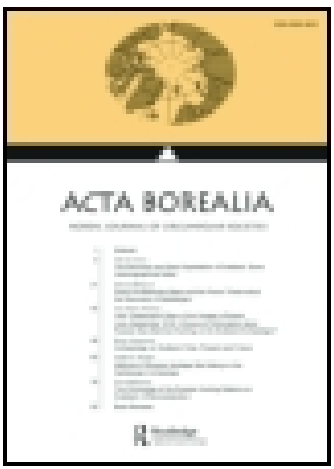

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A Self-triggered Device to Catch Elk as Early as the Neolithic: a Study from an Archaeological and Ethnological Point of View

Anders Huggert

The paper deals with equipment and methods used by Stone Age man in hunting elk in the extensive woodlands of interior Norrland, northern Sweden. The prevailing division into active hunting and trapping is applied. Ethnological source material is used to exemplify various ways of hunting elk. The methods discussed are: (1) active hunting on skis in winter, (2) driving the animal into an enclosure on bare ground, (3) catching in a pitfall, (4) snaring, and (5) trapping by a self-triggered spear/arrow. A rock carving at Nämforsen, Angermanland, northern Sweden, is evidence that a self-triggered device to catch elk with a spear or arrow was in use even in the Neolithic. It is generally known that the elk was a very important prey for Stone Age man in the forests of Norrland. This is evident from figural portrayals and food remains alike. It is easy to suspect other uses for elk, but they are difficult to prove. Occasionally, however, parts of tools made from elk antler and bone have been found.

Active hunting

Active hunting is clearly seen in the large number of arrowheads and spearheads, mostly made of quartzite, but also of other kinds of rock, mainly slate. From Övre Akulla in Bygdea parish in Västerbotten there is a complete preserved spear shaft. It has been dated by pollen analysis to the Epineolithic/ Bronze Age (Anonymous 1942; Oldeberg 1974–1976, 1: 385). Carved zigzag lines are visible on the shaft, of a type also found on slate objects.

The active hunting of elk was presumably carried on mainly in the winter, when the snow was deep and covered with a hard frozen crust, which could carry the hunter on skis while simultaneously curbing the mobility of the prey. The well-known hunting scene on the Zalavruga carving in Russian Karelia (Fig. 1) shows how it was done. The hunter is equipped with skis, a combined spear and ski pole, and a bow (Savvateev 1970; Huggert 2002). Skis from

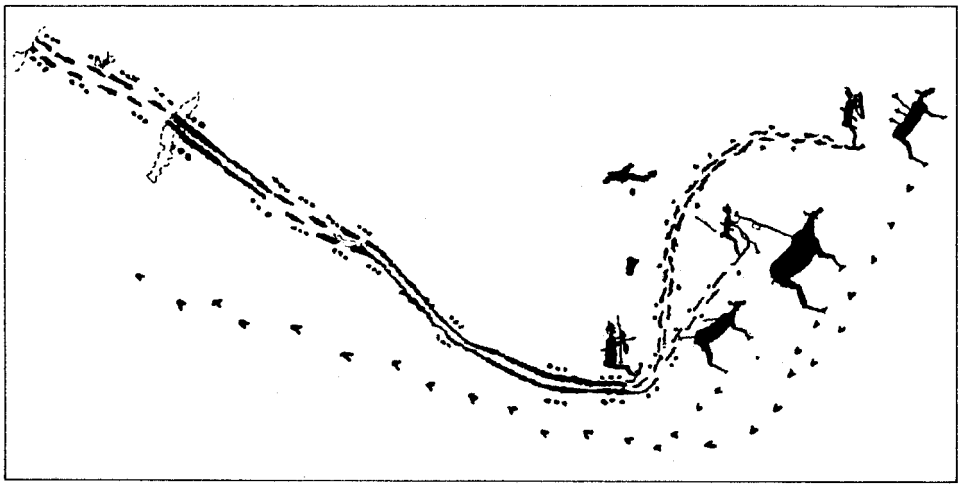

Fig. 1. Hunting scene on the Zalavruga carving in Vyg, Russian Karelia. After Savvateev (1970).

prehistoric times are known through finds in bogs. A pair of skis with an accompanying pole from Kalvträsk in Burträsk parish, Västerbotten, is by far the oldest; according to calibrated ^{14}C values the skis are from around 3200 BC (Aström 1993).

Another form of active hunting is depicted among some rock carvings at Bergbukten, Alta, north Norway. Reindeer, as well as occasional elk, are being driven together into an enclosure where they are killed with a spear. The carving has been dated to 4200–3600 BC (Helskog 1988: figures pp. 2–3, 104–105). It is possible that this kind of hunting also occurred in the forests of Norrland.

Trapping

The method of trapping large mammals in pitfalls has left clear traces in the terrain which survive through time. The pitfall can be in an isolated location at a strategic point in the terrain, or it can be part of a system of pits and fences blocking off a particular section of the terrain; for example, a valley or the slope between a mountain and a river. Thanks to ^{14}C dating it was possible to demonstrate that the method was in use as early as the Stone Age. It is also attested from the Middle Ages in legal regulations, both in the Law of Hälsingland from 1320–1340 (Svenska landskapslagar 1940) and in the National Law of Magnus Eriksson, which came into force in 1442. In Norrland, trapping in pitfalls was carried on well into modern times, not being prohibited

in law until 1864. The National Law refers particularly to elk among the game animals (Drapamalsbalken II: VI). Early topographical literature shows that pitfalls were also dug to catch reindeer, and that in both cases this activity was mainly pursued in the winter. Our idea of the design and function of pitfalls in the Stone Age essentially proceeds from what is known from more modern accounts. A map of Näs in Fjällsjö parish, Angermanland, from 1695 actually shows a system in use at the time, with *Elggrafwar* (elk pits) and fences with diagonal rails (Berg 1971: figure p. 75; Spang 1981: figure p. 286).

The movements of present-day stock of elk over the year follow a habitual pattern. During the winter, several animals live together within a certain area where they are fairly stationary. In May the elk begin their long lone migrations, through which they are spread out over a larger area by the summer. They tend to migrate along the major watercourses, which means that in Norrland they basically move in a northwesterly direction. Humans quickly adapted to the habits of the game animals. Between 4500 and 2500 BC there was a special settlement pattern in the forested regions, whereby the family group moved between the summer habitation and a winter village shared by several such groups, located in an area where elk tended to converge because of the topographical conditions. Remains of winter villages with semi-subterranian houses – known by the ramparts of fire-cracked stone they left after them – have been observed to be located close to large pitfall systems (Lundberg 1997: 148ff.).

Pitfalls cannot have been the only method for catching elk in the Stone Age. From the medieval and modern periods we know of some other approaches. The difference between them and the pitfalls, however, is that they do not leave any lasting traces in the terrain. It is therefore only in special circumstances that it is possible to prove their assumed existence in the Stone Age.

Snares and self-triggered devices in the medieval and early modern periods

Without referring to any particular species, the method of "setting a snare" (*sätta snara*) in the forest is mentioned in the Law of Hälsingland (Manhelgdsbalken III: §1). This is obviously a question of snaring large animals, as the statute is about manslaughter through "handless misadventure". In the corresponding content in the National Law this is referred to as "making a trap with a snare" (*göra giller med snara*) (Drapamalsbalken II: VI). It is known through documentation from modern times that elk were caught with a snare which was set at head height between two trees where the animal was wont to pass. To lead the elk in the right direction, the hunter could close off

the sides of the path with dry branches (Ekman 1910: 49f.; Henriksson 1978: 34f.). The only thing that could survive of a trapping device like this would be the actual snare, if it was made of metal.

The self-triggering device is a technically more advanced implement which was evidently widespread at the time of the Law of Hälsingland. The expression used in the law is *sätta självskott*, literally "to set a self-shot", in the forest (Manhelgdsbalken III: §1). In the wording of the National Law it is called *göra giller med spjut*, literally, "making a trap with a spear" (Drapamalsbalken II: VI). The method of setting up elk spears (*sätta upp älgspjut*) was only permitted in Dalsland, Värmland, Dalarna, Gästrikland, and Hälsingland, and it was totally prohibited from the start of Lent until St Olaf's Day, 29 July (Bygningabalken XVIII: §4), the reason being that the peasant's livestock was then grazing in the forests. In Olaus Magnus' *Historia de gentibus septentrionalibus*, printed in 1555, the hunter catches the elk wandering in the extensive wildernesses by means of "cunningly placed spears". A picture shows how the elk triggers the trap and is struck in the withers at the same instant by the spear (18: 2).

Documentation from modern times records several different technical solutions for the design of the self-triggering device placed in the path of the elk (*älgled* or *älgdrag*). The motive force of the device consisted of a sufficiently pliable, resilient pole from a really dry spruce or aspen, the root end of which was firmly attached in the horizontal position to a couple of trees while the top end was arched and fixed in position, ready to be sprung. A point could be attached to the top end at right angles to the longitudinal axis of the pole, so that when the trap was sprung the point immediately hit the passing animal on the side. Usually, however, the top end of the pole was directly touching the back end of a stout arrow or spear (*älgudd*), which was fixed in a position aiming at the estimated point of impact on the animal (Figs. 2 and 3). The self-triggering device was set up with great care beside a path known to be taken by elk. To ensure that the animal really passed at the right spot, it could be necessary to fence the path sparsely with old dry sticks and branches. The thread which triggered the device was stretched across the passage. It could be kept more or less slack, depending on where the hunter envisaged that the arrow/spear would hit; either in the shoulder/breast, so that the heart and lungs were injured, or in the groin, which was totally unprotected by skeletal parts (Ekman 1910: 45ff.; Henriksson 1978: 35f.).

The part of the self-triggering device that is most likely to survive is the iron point of the arrow or spear. It is tricky, however, to determine whether a point discovered in modern times was once used in this particular way. If the point has a protracted tang and is bent at the end, it seems possible that it could be a type of projectile from a self-triggering device of this kind. Interesting finds have been made at several places in the forests of Norrland.

Fig. 2. Self-triggering device with a spear in Stugun, Jämtland. Copy made in 1908 by an old trapper who knew from personal experience how such devices were designed. Drawing from a photograph, Ekman (1910).

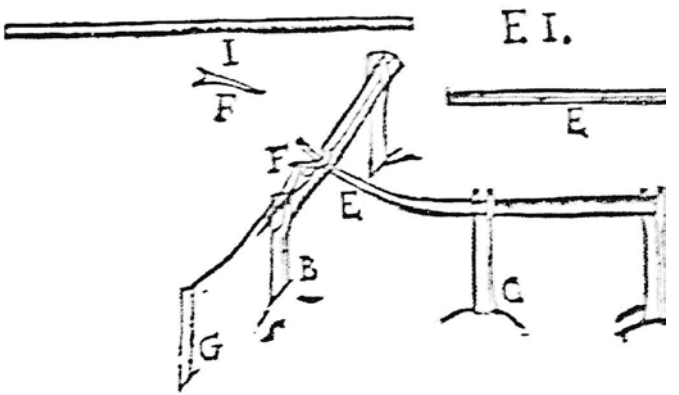

Fig. 3. Self-triggering device with a spear, or rather an arrow, according to an illustration and detailed description in a treatise by Æschill Nordholm of Jämtland from 1749: the bow is held in place by posts A and C. The movable end of the pole is set in a notch in log E, held in place by wedge F. The short spear lies in a groove on E with the stout rear end just beside the outer end of the arched bow. There is a deep score on the rear end of the projectile. The triggering thread is attached to the neatly fitting wedge F and in post G, which is on the other side of the estimated passage of the elk.

Self-triggering devices in the Stone Age

A self-triggering device was perfectly possible in technical terms as early as the Stone Age. It is quite simply the same principle as the bow: the force is stored in an arched strip of wood, to be released at the calculated moment to propel an arrow towards the target. The fundamental difference between the bow and the self-triggering device is that, with a bow and arrow a person actively shoots the elk, whereas with the self-triggering device the elk shoots itself.

Is there anything to suggest that humans used such self-triggering devices in the Stone Age? The point of the triggered spear or arrow was presumably of the same kind as on a javelin. This means that it is not likely to be possible to demonstrate any physical remains of Stone Age self-triggering devices.

As it happens, however, there is testimony of quite a different kind, namely, a carving from Neolithic times at Laxön in Nämforsen, Ångermanland. The picture shows an elk which has been hit in the shoulder/breast by a very thick arrow or a disproportionately short spear (Fig. 4). The projectile is also special in that the back end is more stout than the rest of the shaft. Judging by photographs, there is a noticeable groove in the back end. Everything suggests that the shaft end of the projectile was given this shape so that it would lie in good contact with the bow of the self-triggering device. The spearhead in the

Fig. 4. An elk struck in the breast by a stout projectile from a self-triggered device. Rock carving at Laxön in Nämforsen, Ångermanland. After Baudou (1992).

carving strongly resembles certain stout slate points: those with a tang, a central ridge and substantial barbs.

It is thus possible to adduce evidence that self-triggering devices occurred as early as the Stone Age, by interpreting a unique motif in a rock carving on the basis of ethnological source material.

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