

Hunting

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In Oxford Encyclopedia of Economic History 2003

Hunting has probably been an important economic activity since the time of early hominins. Chimpanzees regularly hunt and kill other primates and their hunting becomes more frequent and successful whenever and wherever male chimpanzees forage in larger parties (Mitani & Watts 2001). Hominins show marked gut reduction and brain expansion relative to chimpanzees beginning around 2 million years ago and at the same time animal remains become much more common in the hominin archeological sites (Aiello 1998). Gut reduction indicates increased reliance on nutrient dense low fiber foods, and brain expansion requires an ample supply of essential fatty acids found mainly in animal foods. Thus, the coincidence of these traits in time seems to strongly indicate an increased reliance on meat rather than plant foods in the diet of our ancestors during the period of early Homo.

In the late Homo erectus period and continuing on in the Neanderthals and early Homo sapiens, archeological sites show tremendous quantities of animal remains from mammalian megafauna leaving little doubt that our ancestors were highly dependent on hunted food for a long period of evolutionary history (Gaudzinski 1999). Not until the end of the pleistocene, with drastic climate changes and megafaunal extinctions do we see a shift toward increased reliance on collected foods in hunter-gatherer diets.

Although early Homo probably hunted with hand held weapons, clubs, or thrusting spears, by about 400,000 years ago our ancestors had developed throwing spears that were used to kill large game. Later, spear throwers provided leverage necessary to hurl spears and darts at high velocity and with a good deal of accuracy. The bow and arrow may have been invented independently two or three times in human history and this technology replaced spear throwers in most places where both were present. But, hunters on the continent of Australia never obtained bow and arrow technology and still used spears and spear throwers up to the time of European contact. In some areas of the world alternative hunting technology was also developed such as blowguns in Amazonia, or harpoons used by coastal natives in many areas of the world.

Hunter-gatherers that have been observed in modern times use a tremendous variety of methods and technologies to obtain game. Most of these fall into the categories of: 1) mobile encounter-based hunting, 2) sit-and-wait ambush hunting, or 3) game drives. Mobile encounter-based hunting consists of walking through an area suspected to be rich in game and hoping to encounter prey, stalk and kill it before it has a chance to employ an effective escape tactic. This may also include the use of game calls when there is a strong indication that a target species is near. Some prey swiftly flee long distances but many hide in thickets, burrows, bodies of water, or climb trees. Human hunters are very opportunistic about the tactics they use to obtain such hidden prey and a variety of special tools and techniques have been developed by hunters around the world. Killing the prey usually consists of shooting projectiles, stabbing with a sharp instrument,

breaking the neck, clubbing, or suffocating. Ambush hunting consists of hiding along game trails or near feeding and drinking areas and dispatching prey that come within effective range. Many types of blinds are constructed by hunters in order to better camouflage their hiding spot. Game drives generally consist of hunters surrounding prey and spooking them toward each other, or leaving a subset of hunters in a good ambush location while others attempt to frighten prey in their direction. Many game drives include environmental modification that forces game to move through a narrow area where hunters are waiting. In most ethnographically described cases, mobile and ambush hunting are accomplished by solitary men who sometimes leave camp as a group but split up before beginning pursuit of prey. Groups of solitary hunters sometimes cooperate to hunt social living animals after they are encountered, and in such circumstances hunters may communicate by long distance calls and signals. The majority of well known modern hunter gatherers were solitary hunters (eg. Kung, Hadza, Agta, Punan, Ona, Eskimos, Australian aborigenes.). A few modern groups were more oriented towards cooperative hunting (eg. Ache, BaMbuti, Hiwi, Plains Indians.)

In general medium to large sized mammals are the most important prey items for human hunters around the world, with reptiles and birds being considerably less important in total biomass obtained. The largest animals hunted in recent times were whales (American N.W. Coast Indians) and elephants (BaMbuti), whereas the smallest animals hunted (not trapped) were probably small birds (everywhere), small rodents that were extracted from burrows (Ona, Shoshone) and small reptiles (desert Australia). A recent survey of all hunter-gatherer groups for whom we have quantitative dietary data suggests that from 30% to 80% of the energy in the diet in such groups comes from game animals (Kaplan et al 2001). Another cross cultural survey based on estimates of economic patterns shows that 73% of all hunter-gatherer groups probably derived more than 50% of their daily energy intake from animal foods (Cordain et al 2000)

The returns from hunting (including search time) have only been measured for groups that were studied in the late 20th century. In general the group mean for adult male hunters obtain ranges between about 0.2 kg. (Gwi, Efe, Mbuti) to 2.5 kg. (Hiwi) meat (live weight) per hunter hour in the bush (mean 0.63 kg./hour in 15 studies) using traditional weapons among foraging societies that have been studied in the late 20th century. Variation in hunting returns between men in foraging societies can be considerable. For example, Among the Ache there is more than a 10 fold difference in return rate between the best and worst adult male hunter in a sample of 24 men that were observed over a long time period (Hill and Hurtado 1996: 333). Mean hours hunted per day in groups without agriculture or domestic animals ranges from only 1.5 hours per day by the Hiwi of Venezuela (Hurtado and Hill 1987: 177) to about 9 hours per day by Canadian Chippeweyan hunters (Irimoto 1981) with the average about 4.9 hours per day in 25 studies.

One of the most notable things about hunting is the long period of learning required for attaining expertise. In many groups men don't reach peak hunting skill until their mid 40s or later, and young men at the peak of their strength often obtain hunting returns much lower than older more experienced men (Walker et al 2002). This observation in

combination with the fact that acculturated youths are often poor hunters suggests that hunting is a complex skill that requires a long period of learning. Tracking skills of hunters are reported to be astounding by those who have observed them (eg. see Bridges 1947: 306, 328-330 for examples of Ona tracking skills). Likewise the ability to know where to search for game, when to ignore unimportant signs of game or when to follow up on promising leads, and how to extract game when it burrows, climbs, submerges, or otherwise makes itself inaccessible, seems to be a complex learned skill that requires years to master.

Word count: 1185

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