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Changes in Male Hunting Returns

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Synonyms

Production

Definition

Variation in the amount of game produced or efficiency in hunting by men.

Introduction

Research on changes in male hunting among hunter-gatherers addresses two important issues in early human evolution: the nature of the family and trade-offs in mating and parenting effort as well as the development of embodied capital. In the hunter-gatherer literature, there is a debate about the function of male hunting that has implications for understanding the role males play in the evolution of the pair bond. The traditional model argues that male hunting and other economic activities are forms of male provisioning or parenting effort designed to enhance a man's fitness through his wife's reproduction and the survivorship of their common children. Thus, it is a component of the traditional division of labor and a foundation for marriage and family. The costly signaling hypothesis (or, "show off") is an alternative to the provisioning model. It is proposed by Hawkes and colleagues who argue that men often seek large and difficult-to-acquire game animals that they widely distribute to camp members. As such, it represents mating effort by demonstrating a hunter's phenotypic quality as a potential mate and/or ally. A number of studies have been published to test the provisioning and signaling hypotheses by examining changes in male hunting returns.

Tests of Variation in Male Hunting Production

The provisioning hypothesis is relatively easy to test, but this is untrue for the costly signaling hypothesis (Hawkes et al. 1997). The provisioning model makes at least three predictions: (1) if a woman's productivity declines as a consequence of her pregnancy or lactation and the associated burden of caretaking an infant, her husband's productivity

should increase to compensate for her lowered productivity; (2) the amount of time a man spends hunting or in overall food production should increase with the number of his dependent children; and (3) where males commonly share portions of their hunts, the greatest share of a hunter's catch should go to his own family.

The first prediction of the provisioning hypotheses was tested by Frank Marlowe (2003) on the hunting and gathering Hadza. He showed that men with wives who had nurslings increased their labor effort and food production in response to the lower productivity of their wives. He critically notes that these husbands switched to food resources such as honey which are not widely shared to better provide for their families. Among Ache and Hiwi hunter-gatherers (Hurtado et al. 1992) research shows daily food acquisition of a woman's spouse is negatively related to female foraging effort among the Hiwi, and it is negatively related to foraging time and daily food acquisition among the Ache. Finally, in another Hadza study (Wood and Marlowe 2013, p. 280) male productivity was shown to be associated with marital status such that "On average, single men brought food to camp on 28% of days, married men without children at home on 31% of days, and married men with children at home on 42% of days." Furthermore, the total caloric value of food resources brought back to camp by these three classes of men showed the same statistically significant pattern (Wood and Marlowe 2013, p. 307) of increased production for men with children.

The second hypothesis regarding changes in men's food production was tested a bit indirectly among the Hadza. Marlowe (1999) compared the foraging efforts of men married to women who had their biological children compared to women who had the men's stepchildren. Men with biological children produced more food than men with stepchildren.

The third hypothesis on food sharing has been thoroughly investigated by Wood and Marlowe (2013) for the Hadza. Like many hunter-gatherers and other egalitarian people, food, especially game, is widely shared among coresidents. A prediction of the signaling hypothesis is that males who distribute their resources to other families disadvantage their own families. Such distributions are argued to represent mating effort through costly signaling. Detailed research by Wood and Marlowe (2013, p. 297) show this may not be the case. Their data show that successful hunters retain 42% of all the game they take, or 3.8 times the amount that other families receive from their kills. Similar patterns emerged when men shared small game or nongame food such as honey. While it is clear that sharing outside the family leads to increased stature for successful hunters and provides some evidence for the signaling model, alternative explanations for sharing as a form of food security through risk reduction is widely documented among foraging societies and horticultural groups where hunting is important. Finally, this is not to say that productive hunters who share widely are not more martially and reproductively successful: they clearly are (Smith 2004). However, evidence also indicates that the families of good hunters receive social and economic benefits not afforded to poor

hunters for the Ache (Hill and Hurtado 1996) and in other societies where male hunting is important.

Crucial tests of the signaling hypothesis have not been forthcoming. Returning to the welldocumented association between hunting ability and reproductive success among a sample of foragers (Smith 2004), it is clear that young and unmarried hunters demonstrate their abilities as good hunters by advertising their hunting successes and by sharing widely. There is evidence that such males marry early to young and fecund females. But after marriage, most of the evidence to date indicates that high hunting productivity leads to further investment in wife and offspring, is responsive to family needs, leads to the better treatment of one's family by coresidents, and it is sometimes associated with the acquisition of another wife or extra-pair copulations (Wood and Marlowe 2014).

Finally, there are also age-related changes in male hunting independent of family demand and are based on the long-term development of skills necessary to become a good hunter. For example, "… among Ache foragers of Paraguay, men's strength peaks at around 25 years of age but both meat acquired and hunting return rates (amount acquired per hour spent hunting) peak between 40 and 50 years of age" (Kaplan et al. 2010). Research by Walker et al. (2002, pp. 1–2) on seven hunting and gathering and foraging horticultural societies shows that peak hunting efficiency is not achieved until the late 30s to early 40s in most groups and remains relatively stable for about 15 years before declining. While rates of return measure skill and potential productivity, actual productivity (daily calories produced) is more important as an effective measure of family provisioning. To this end, research by Hill and Hurtado (2009, p. 3866, Fig. 2) show that total foraging productivity (largely but not exclusively hunting) peaks between the age of 45 and 50 for the hunting and gathering Ache and Hiwi.

Conclusion

Empirical research shows increases in male hunting are most reliably associated with increased familial requirements as the number and needs of dependent children increases and the productivity of a wife decreases as a consequence of pregnancy, lactation, and childcare. Changes in male hunting are most consistently viewed as paternal effort.

Cross-References

- Costly Signaling
- Division of Labor
- Food Sharing
- Hunting
- Mating Effort
- Parental Investment

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