

Prestige or Provisioning? A Test of Foraging Goals among the Hadza

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Tests of hypotheses concerning the foraging goals of Hadza men and women using an interview involving a hypothetical instance of foraging group formation show that most Hadza men and all Hadza women prefer to join foraging groups that ensure the greatest household provisioning advantages. Men with dependent offspring are no more likely to choose a strategy beneficial for household provisioning than men without dependent offspring. These results suggest that most Hadza men agree with women's camp preferences and value family provisioning more than broadcasting signals of their hunting ability when deciding with whom to live.

In most human societies that subsist on wild resources, hunting is a male specialization, while women acquire most gathered foods (Kelly 1995). Among chimpanzees, hunting is almost exclusively a male activity (Stanford 2001). A male hunting specialty is probably an ancient characteristic of our species. Much anthropological research has been directed toward identifying what selected for and maintained this specialization (e.g., Washburn and Lancaster 1968; Hawkes, O'Connell, and Blurton Jones 1991; Kaplan et al. 2000; Hawkes and Bliege Bird 2002).

The traditional explanation for this pattern was summarized by Washburn and Lancaster (1968), who contended that increased hunting and family provisioning by males led to the evolution of pair bonds and many other social, technological, and cognitive changes in our genus. This interpretation and more recent accounts (Kaplan et al. 2000) view men's hunting and provisioning as important for the evolution of many distinctively human traits and portray hunting among foraging populations as a profitable form of family provisioning.

Since the late 1960s, several debates have arisen concerning the role of hunting in human evolution. In particular, the family provisioning value of hunting has been questioned (Hawkes 1990, 1991; Hawkes, O'Connell, and Blurton Jones 2001a). Behavioral ecologists studying forager populations have found that hunting has a higher daily risk of failure than gathering and that meat is transferred away from the acquirer's household to a greater degree than gathered foods (Kaplan and Hill 1985; Hawkes, O'Connell, and Blurton Jones (2001b). These facts and others are argued to undermine the

family provisioning value of hunting. Recently, two alternative explanations that may account for why men hunt have been proposed: the showoff hypothesis (Hawkes 1990, 1991) and a hypothesis based on costly-signaling theory (Smith and Bliege Bird 2000; Bliege Bird, Smith, and Bird 2001).

The showoff hypothesis, developed by Hawkes (1990, 1991) using data gathered among the Ache as well as the Hadza, proposes that men's hunting is best understood as camp provisioning that is repaid with social attention including increased mating opportunities. In the showoff account, men target large game because it can be shared widely and exchanged for fitness benefits including mating opportunities. Hadza men are said to pursue the showoff strategy at the expense of more dependable forms of family provisioning such as gathering or the hunting of small game (Hawkes, O'Connell, and Blurton Jones 1991).

The costly-signaling hypothesis, presented by Smith and Bliege Bird (2000), Bliege Bird, Smith, and Bird (2001), and Smith, Bliege Bird, and Bird (2003) using data gathered among Meriam Islanders, draws from signaling theory developed by Zahavi (1975, 1977). This framework proposes that men may be motivated to hunt as a means to broadcast information that is of interest to others. Establishing status as a good hunter is seen as a way for a man to advertise genotypic or phenotypic qualities and promote mutually beneficial arrangements. This hypothesis proposes that higher-status hunters display inherent qualities that make them sought as mates, preferred as allies, and avoided as competitors.

The showoff hypothesis and the costly-signaling hypothesis describe different processes whereby hunting provides fitness benefits to men,¹ but they agree that ethnographically recorded forms of hunting are poor examples of family provisioning (Hawkes 1991; Hawkes, O'Connell, and Blurton Jones 1991; Bliege Bird, Smith, and Bird 2001). In both accounts, hunting is undertaken for mating benefits that accrue to high-status hunters, not for its family provisioning value. In both accounts, men are primarily motivated by the benefits of prestige earned through hunting.

In a previous study (Wood and Hill 2000) Ache hunters were presented with a hypothetical scenario of foraging group formation in which their responses reflected a preference for either increased relative hunting status or increased family provisioning. While the study was designed to test a prediction of the showoff hypothesis, it was also an appropriate test of the costly-signaling hypothesis because both accounts propose

1. For discussion of the differences between the two hypotheses, see Smith and Bliege Bird (2000). Recently, Hawkes, O'Connell, and Blurton Jones (2001a, 2001b) have applied the term "showoff" to actors engaged in costly signaling. While the showoff hypothesis and the costly-signaling hypothesis share some important points of reference (Hawkes and Bliege Bird 2002), they are distinct explanations for men's work with theoretical differences (Smith and Bliege Bird 2000, 257). The term "showoff" is used here in its original (Hawkes 1990, 1991) meaning.

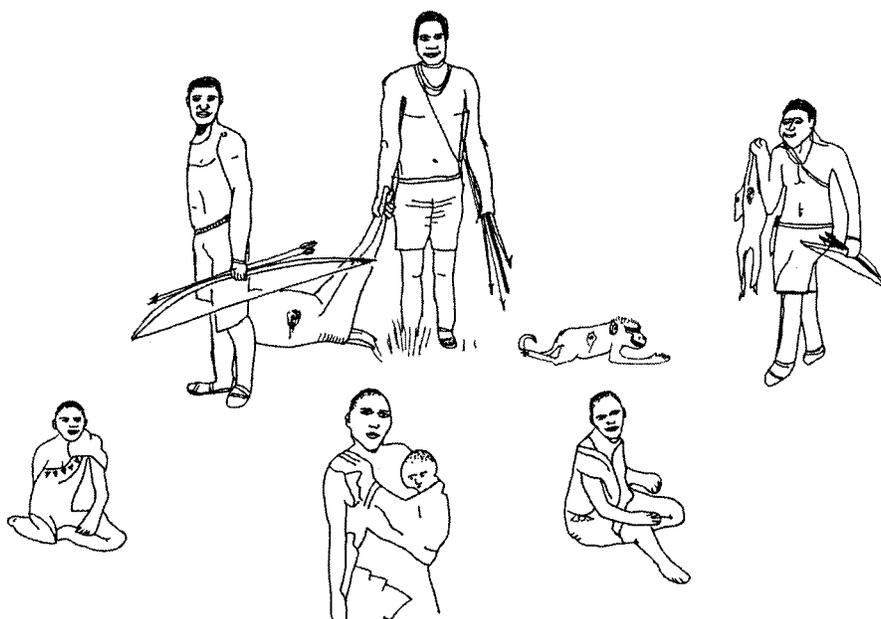


Fig. 1. The camp of skilled hunters (Camp A).

that prestige rather than provisioning is the hunter's primary motivation. Herein, both hypotheses will be referred to as prestige hypotheses. The Ache research revealed that men without dependent offspring tended to exhibit a preference for increased relative hunting status, while men with dependent offspring were more likely to choose the provisioning strategy. We suggested that this pattern was due to men's shifting between mating effort and parenting effort in the course of their reproductive careers on the basis of the presence or absence of dependent offspring.

In the present study, a similar interview was administered to Hadza foragers of northern Tanzania in an attempt to test the two prestige hypotheses and to see if men with dependent offspring would, as did the Ache, favor a provisioning strategy. Additionally, interviews with Hadza women were included in an effort to examine sex differences in foraging-group preferences.

Methods

The format of the interview was similar to that used with the Ache, with culturally appropriate changes made in some details. Respondents were shown hand-drawn storyboards that depicted two camps of Hadza and given accompanying information in Swahili. Each camp consisted of three adult men, one married adult woman with a child, and two young adult unmarried women without children. The camps differed in one important regard: the hunting ability of the men. The hunters in camp A were skilled hunters, while those in camp B were poor hunters. This was depicted on the storyboards

with a scene that showed the hunters of camp A returning to camp with an impala, a baboon, and dik-dik (fig. 1) while those in camp B returned with only a dik-dik (fig. 2). The men of camp A were described as "men who bring in lots of meat" while those of camp B were said to be "men who don't bring in much meat."

Respondents were given drawings of themselves and of their spouses and children if they had any. They were then asked to choose the camp they would rather live in for a two-month period and to place their drawings in the chosen camp. Respondents were then asked to explain their decision. Men and women were interviewed in identical ways.

The respondents' marital status and children's approximate ages were recorded prior to each interview. This information was cross-checked with separate camp censuses conducted during the same fieldwork period and those previously conducted by Frank Marlowe. In order to analyze the effect of dependent offspring on men's responses, children were categorized as dependent if they were less than ten years old—a conservative estimate of the age after which Hadza children can acquire at least 50% of their daily calories on their own (Blurton Jones, Hawkes, and O'Connell 1989).

Predictions

For male Hadza, the hunting ability of the men in the two prospective camps creates a choice between greater relative hunting status and increased family provisioning. While each camp presents excellent mating opportunities, the differing hunting abilities of the men already in the two camps allows

men to determine the strength with which their own hunting ability will be displayed.

The provisioning hypothesis predicts that a man will join the camp of good hunters, where successful hunting and food sharing between camp residents can be expected to provide more nutrients to his household even though his hunting ability will be signaled less strongly than in the camp of poor hunters.

The two prestige hypotheses predict that a man will join the camp of poor hunters, where his kills will make up a greater fraction of the group's overall consumption and his hunting ability will be more strongly signaled but where campwide food sharing will provide fewer nutrients to his household. Joining a camp of poor hunters corresponds well to the showoff portrayal of men seeking to "increa[se] their disproportionate contribution to others' consumption" (Hawkes 1991, 49) and the costly-signaling hypothesis, in which "a successful hunter benefits from creating a public arena to broadcast signals of his success, which supplies an immediate boost to his status over that of his competitors" (Smith and Bliege Bird 2000, 258).

Female Hadza are predicted to show no interest in joining the camp of poor hunters. The showoff, costly-signaling, and provisioning hypotheses portray women as effective provisioners and thus predict that women will choose the camp of good hunters because of the greater availability of meat or because of nonnutritional benefits of living with good hunters.

Table 1. Camp Selection and Offspring Dependency among Men

Group	Chose Camp A	Chose Camp B	Total
Men with dependent offspring	18	4	22
Men without dependent offspring	8	4	12

$$\chi^2 = 0.991; p = 0.32$$

Results

Of the 34 Hadza men interviewed, 26 (76%) opted to join the camp of good hunters. In contrast to the Ache situation, the presence of dependent offspring had no effect on men's responses (table 1). Each of the 4 unmarried men interviewed chose to join the camp of good hunters. Every one of the 28 women interviewed opted to join the camp of good hunters.

Discussion

The provisioning hypothesis best predicts the interview results among all Hadza men. In contrast to Ache men, Hadza without dependent offspring did not show a greater tendency to choose the status-maximizing strategy. Among Hadza women, the universal choice to join the camp of good hunters was as expected. When asked why they chose the camp of good hunters, women universally responded "because of the meat,"



Fig. 2. The camp of poor hunters (Camp B).

and in fact they often placed the drawings of themselves directly in front of the impala in the camp of good hunters.

To the degree to which these results reflect real foraging-group preferences among Hadza, this study supports the idea that, given a choice, most Hadza men would select a strategy that enabled increased household provisioning over one that produced higher relative hunting status. In a similar vein, Marlowe (2003) has found that Hadza men increased production levels when their wives were supporting young nurslings. This evidence for important parental investment by men is in contrast to previous research that gave primacy to status competition as motivating men's work among the Hadza.

This study does not, of course, propose that prestige is unimportant for understanding men's behavior among the Hadza. Rather, it should be taken as a decision situation in which most men value the material benefits of living with good hunters over the costs suffered to their own hunting reputation by comparison with such company. In this particular instance, men and women's responses are mostly in harmony and produce outcomes beneficial for household provisioning. Such mutually advantageous situations promote the persistence of pair bonds.

The reasons men gave for choosing the camp of poor hunters are listed in table 2, along with their marital status. Interestingly, the only two polygynously married men in the study sample were among those who chose the camp of poor hunters. One of these men unambiguously revealed a desire to showcase his talents ("I will go there to teach them how to hunt"), while the other indicated a desire to assist a camp in need ("The camp right now needs lots of help"). Both of these statements reveal a strong self-evaluation of the individuals' own hunting talents and, coupled with their marital status, indicate an interest in mating effort and the showcasing of their performance as hunters.

In terms of signaling theory, these results support the idea that hunting ability and especially its material consequences are strong audience attractors (Smith and Bliege Bird 2000; Hawkes and Bliege Bird 2002). Most respondents wanted to join the camp of good hunters and, when asked why, said something similar to "I want to go there for lots of meat." Consequently, we can reasonably assume that good hunters find themselves in large camps more often than poor hunters. While this may be beneficial for signaling purposes per se, it is worth considering the drawbacks of such audiences. One man who chose to join the camp of poor hunters stated: "Camps with lots of meat have lots of noise and fighting," while another said that in the camp of poor hunters "They will like me and there is less noise and bickering." These responses articulate some the costs which would be imposed on good hunters more frequently than others. This study does not allow one to determine whether large and demanding audiences bring any net advantage to good hunters, but it does caution against thinking that social attention earned through meat is always beneficial.

Table 2. Reasons for Joining the Camp of Poor Hunters and Marital Status

Respondent	Reason	Number of Wives
1	He will teach them how to hunt.	2
2	The camp right now needs lots of help.	2
3	They'll like him, and there is less noise and bickering.	1
4	—	1
5	Other camp already has enough meat.	1
6	Camps with lots of meat have lots of noise and fighting.	1
7	He will bring food for the camp.	1
8	—	1

Conclusion

Joining a camp of poor hunters might allow a Hadza hunter to increase his status and mating opportunities, but most men would rather join a camp of good hunters, lowering their relative status but producing a better flow of nutrients to their households. Likewise, Hadza women prefer to join camps of good hunters. In contrast to the Ache situation, the prestige-enhancing strategy is not favored by Hadza men without dependent offspring or unmarried hunters. The provisioning preference is in contrast to previous characterizations of Hadza male behavior and hunting in particular as motivated by status competition. This realistic decision situation shows little evidence for a conflict of interest between the sexes.

Acknowledgments

This work was supported by NSF grant 0242455 to Frank Marlowe. I thank Marlowe and three anonymous reviewers for helpful critiques of earlier drafts.

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