Marriage among foragers

- General Polygyny (>20%): N=18 (60%)
- Monogamy: N=3 (10%)
- Slightly Polygynous (1-20%): N=9 (30%)

Legend:
- Green: General Polygyny (>20%)
- Purple: Monogamy
- Red: Slightly Polygynous (1-20%)
General Trends in Forager Marriage Patterns

- Polygyny rates increase as male contribution to the diet decreases
- Polygyny rates increase as pathogen stress increases
- Polygyny is positively associated with arranged marriages
- Polygyny is positively associated with assault frequency
Male Contribution to Subsistence as a Determinant of Polygyny

Rsq = 0.1746
Male Contribution to Subsistence and Percent of Polygynously Married Women

Rsq = 0.2249
Pathogen Stress and Polygyny

\[ \text{Rsq} = 0.2057 \]
Arranged Marriages and Polygyny

\[ \text{Rsq} = 0.2444 \]
Violence and Polygyny

Assault frequency

% of polygynously married women

Rsq = 0.4270
The Show-Off Hypothesis

- Hawkes argues that male hunting is designed to permit them to “show off” to others.
- Because game brought in by males is distributed to all camp members, hunting cannot be seen as a form of family provisioning.
- Successful hunters have greater RS through marrying more fit women, marrying polygynously, or more extra-pair sex.
- Therefore, hunting is a kind of mating and not reproductive effort.
Marlowe’s Hadza Evidence

- In previous slides using an HRAF sample Marlowe shows that male foraging is crucial to female fertility which suggests that males make important contribution to their own families.

- Recent analysis of Hadza material (next slides) shows how males respond when their wives have dependent children.
Marlowe argues that male food production is in large part reproductive effort

- As male production increases, female reproduction increases.
- A mother’s foraging efficiency declines when she is encumbered by dependent children.
- Fathers work harder when their wives and encumbered by highly dependent children.
- The greater a father’s contribution to the diet the earlier children are weaned.
Male Contribution and TFR

**Figure 1.** Total fertility rate as a function of male contribution to diet ($\beta = .497, p = .010, \text{d.f.} = 24$).
Mother’s return rate as a function of age of youngest child: young dependent children reduce a mother’s efficiency

Fig. 1. Foraging return rate, as measured by daily Kcal of food taken back to camp by women per hour of foraging time, by the age of a woman’s youngest offspring \( (r = .629, P = .009, n = 16) \). The data show a newborn lowers a woman’s foraging efficiency.
Father’s response to wife’s caretaking & reduced foraging efficiency: fathers produce more food when wife’s efficiency is reduced

Fig. 2. Foraging returns, as measured by daily Kcal that a woman takes back to camp, minus the daily Kcal that her husband takes back to camp, for couples (age 18–65) with, and without, a child under 1 year old who is the offspring of the husband. The presence of an offspring under 1 year old predicts a greater amount of food brought back by a husband relative to his wife ($\beta = -.387, P = .030, df = 30$, controlled for the woman’s age). Lines inside boxes show medians, box boundaries show quartiles, and T’s show extremes.
Weaning and Male Contribution to Diet


FIG. 2. Age at weaning as a function of male contribution to diet, controlling for primary biomass of habitat ($\beta = .437, p = 0.028$, d.f. = 26).