

Mothers and Fathers

Parenting (review)

- **Why do we love our children?:**
 - the parents that invested more
 - had higher reproductive success.
- **Why Mothers more than Fathers?**
- **The Paternity Uncertainty Hypothesis**
- **The Abandonability Hypothesis**
- **The Mating Opportunity Cost Hypothesis**



Parental Investment vs. Mating

- In terms of Life History Theory, the effort directed towards parenting cannot be allocated towards mating.
- There is a finite amount of energy.
- Cost/Benefit analysis
 - Aka data (Hewlett)
 - fathers who invest heavily in offspring have higher reproductive success and status.

What Should Motivate Parental Care?

- **Genetic Relatedness to offspring**
- **Ability of offspring to convert parental care into fitness:** highest risk of infanticide of sick.
- **Alternative uses of the resources that might be available to invest in offspring:** will my investment be best spent investing in my children or additional mating.

- **Review of Kin Selection and Inclusive Fitness**
- **Kin Selection in Terms of Parental Investment:** Inclusive fitness is high if you invest in your offspring to make sure that they survive to reproduce..
- **Life History Theory in Terms of Parental Investment:** you must give up other activities to invest in your children to make sure that reproductive success and inclusive fitness are high.

Preparation for Reproduction

- **Fat deposits**
 - before puberty boys and girls fat deposits are equal
 - 2 yrs after menarche fat proportion increases 214% in girls
- Breasts enlarge
- Onset of menarche



Birth

- **Stages of Labor**
 - Bloody show
 - waters breaking
 - cervical dilation
 - contractions
 - pushing the baby out
 - birth of the placenta
 - Involution of the uterus
- Outside the US women give birth at home attended by a midwife.
- In the US 95% of women give birth in a hospital.
- The birth process is a normal event: for a normal, healthy woman, 92-95% of births are normal.



Lactation and Breastfeeding

- most expensive phase of reproduction.
 - Ache foragers: approx. 10-13 million calories provisioning costs for 1 child.
- longer in primates than other animals.
- primates feed and carry offspring.
- in primates parental investment continues after weaning.



Milk Production

- Prolactin causes milk production
- Oxytocin causes milk let-down
- Nipple stimulation causes oxytocin release, which causes milk let-down
- Nipple stimulation causes prolactin release, which causes milk production
- Intensity of suckling adjusts milk supply of the demand from the offspring.



Human Milk



- the best food for babies.
- Provides the right balance of nutrition.
- Adapts to the baby's changing requirements.
- Strengthens baby's resistance to infections and disease: antibodies passed from mom to child.
- Breast fed babies have fewer problems with allergies, constipation, indigestion, skin disorders, colic
- It is cheap

- Human Milk (cont.)
- composed of 88% water and 3-4% fat
- other primates and humans carry their babies and nurse them a few minutes several times an hour and nurse for a long time
- Infant mortality increases when women bottlefeed instead of breastfeed.
- Colostrum
 - produced in first 2 days after child is born.
 - has fewer calories than breastmilk but has many antibodies.



Prolactin: “the parenting hormone”

- causes milk production.
- encourages parental attachment and bonding with child.
- elevated levels in moms and alloparents
 - physical contact with infant increases levels.
 - Higher chance of infanticide by mothers if no physical contact or not breastfeeding.
- can males have high levels of prolactin?
 - yes, when the father is around infants.
 - the higher prolactin levels in males the better father he is.



Oxytocin

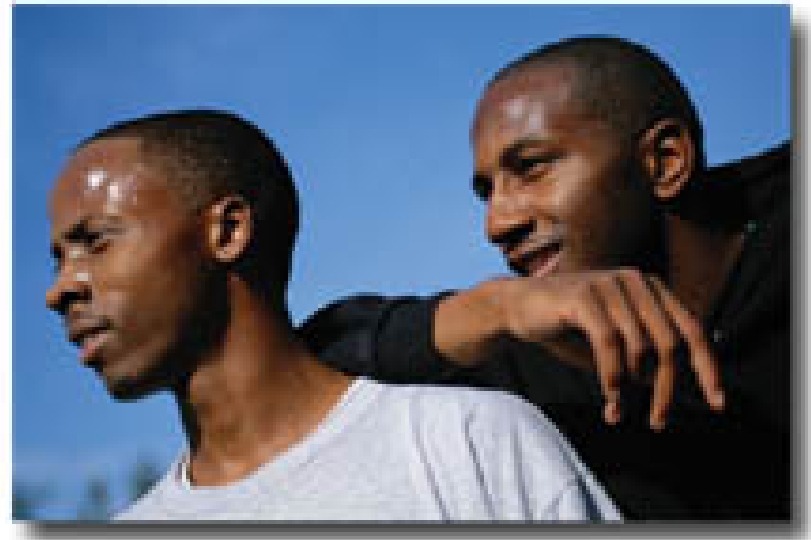


- starts the birthing process
- Let-down reflex allowing milk to flow from the breast.
- encourages bonding
 - mom passes it through the breastmilk to child.
 - decreases infanticide.

Fathering and Childcare

Male Preparation for Fatherhood

- physical changes occur between 9-18 yrs are related to increased levels of testosterone and include:
 - size
 - get more body hair
 - sex organs grow and mature
 - begin sperm production



Male Hormones

- **Testosterone- “the masculinity hormone”**
- primary male sex hormone
- human males have higher levels when they compete and have sex.
- levels drop in men after the birth of their child.
- fathers have higher estrogen levels
- Lower testosterone levels increases caregiving by males.
-respond to infant cries



Prolactin: “the hormone of paternity”

- found in all mammals
- plays a role in fathering in species where they show caregiving behavior.
- caregiving behavior includes feeding, warming, playing, etc.
- higher prolactin levels and being an experienced father make men better fathers.



Factors Affecting Degree of Human Paternal Care

- Male status:
- Time spent in proximity:
- Division of Labor:
- Degree of relatedness



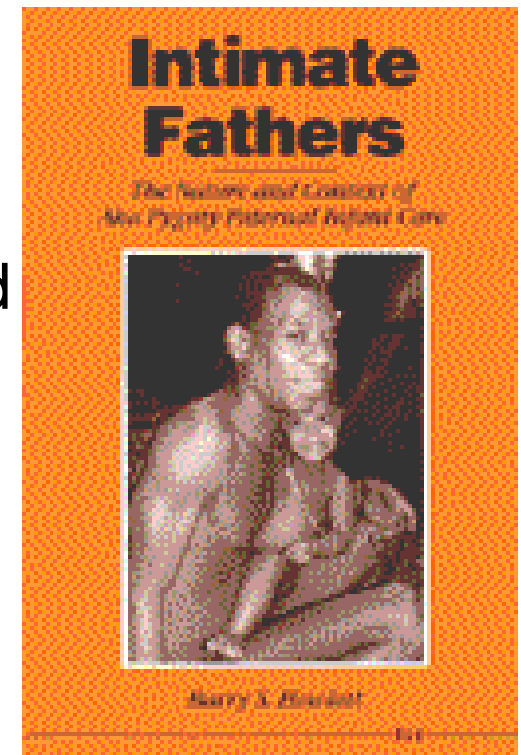
Intercultural Variability among Fathers

- the degree of care between fathers in different cultures varies.
- **Dad vs. Cads:** Aka are high investing fathers but the Ache are low investing fathers.



Barry Hewlett Data on Aka Fathering

- Compares high investing Aka fathering to US fathering.
- Aka of Central African Republic
 - Patrilineal
 - high fertility but high infant and child mortality rates.
 - equal contributions to the diet by men and women
 - Net-hunters
 - women gather and men hunt
 - egalitarian
 - Prestige avoidance
- Aka Infant care very high.



Contexts of Father Caregiving- Aka

- Aka fathers are the highest caregivers of children in the world.
- 4 times as much in camp than in the forest.
- Hold their infants for an hour during daylight hours versus 10-20 minutes per day for American dads.
- Sleep with their infants.

Why difference between Aka and US fathers

- **When male contributions are secondary**
- **No accumulable resources**
- **Subsistence activities**
- **Husbands and wives are within sight of each other**

Other differences

- **Frequency of holding leads to intimacy (attachment)**
- **Knowledge of infant caregiving practices leads to style**
- **Degree of relatedness**
- **Cultural Values**

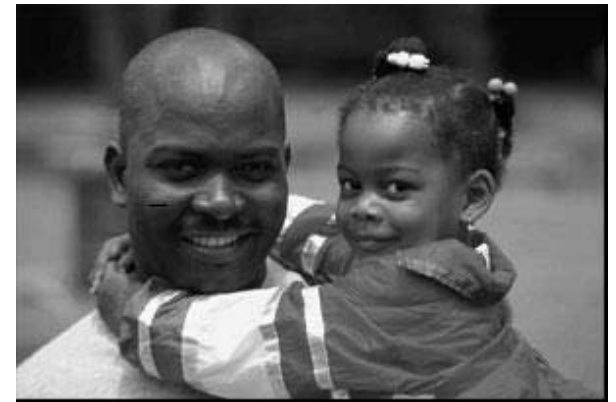
Different Goals

- Aka have high infant mortality rate so infant survival is the main goal.
- US has low infant mortality rate so they don't need to be as attentive.



The New American Dad

- New dads stay home to care for children more.
 - 1 out of 4 men will stay home to care for preschoolers.
 - > 2 million kids are raised by a primary care father.
 - fathers 1/4 more child care than 30 yrs ago.



The Ache “Show-off Hypothesis” (Cads?)



- Ache maximize reproduction not investment in offspring.
- males focus on big game hunting but is not productive.
- big game meat is dispersed, so you're not really feeding your family.
- Big game hunting is prestigious.
- men who are good hunters have higher reproductive success through higher mating opportunities with other women.
- May or may not be supported.