

investment (among females generally and "K-strategy," "Dad" males) tends to reduce the number of offspring and also the variance in numerical reproductive success. The exclusive use of number of offspring as *the* measure of fitness makes it harder to understand what women are doing, because the laws of statistics dictate that it will always be easier to find a significant relationship between any independent variable and a dependent variable that has a greater variance in males than it does in females. Such measures of fitness also seem to assume that all men are following the "Cad" or "r-strategy" of maximizing *numbers* of offspring, when theory and observation show that many men may maximize fitness by maximizing parenting effort – in part, perhaps, by preferring to marry women in their mid- to late 20s, or older, who are more likely to bear children with higher ORV.

Buss's work is an important step in our understanding of human mate selection in an evolutionary context, but future research should include awareness of alternate reproductive strategies and both quantitative and qualitative measures (ORV) of the fitness effects of these alternative strategies.

NOTE

1. Species with adaptations for early maturity, short interbirth interval, and large litter size with low parental investment are said to be "r-selected," or following an "r-strategy." Species with adaptations for delayed maturity, long interbirth intervals, and small litter size with high parental investment are said to be "K-selected," or following a "K-strategy." High-mating-effort, r-strategy females are frequently referred to as "fast," with r-strategy males being "cads." High-parenting-effort, K-strategy females, on the other hand, are frequently called "coy," with K-strategy males being "dads."

Author's Response

Mate selection for good parenting skills

David M. Buss

Department of Psychology, University of Michigan, Ann Arbor, MI 48109-1346

Electronic mail: davidbuss@um.cc.umich.edu

Chisholm astutely points out the potential importance of parenting skills and offspring reproductive value in mate choice. This topic was neglected in the original target article (Buss 1989), in subsequent commentary, and indeed it has been largely neglected in empirical research on human mating. Cues to good parenting skills as possible mate choice criteria are well worth exploring both conceptually and empirically. In this Response, I elaborate on several of the issues raised by this set of considerations.

Cues to good parenting skills. One of the key issues centers on which characteristics provide, or have provided over human evolutionary history, reliable cues to good parenting skills. Age, as Chisholm notes, is undoubtedly an important one. Infant mortality and infanticide currently exist in greater numbers among teenage mothers compared with those in their 20s, and this may have been true during human evolutionary history. Age is only one cue, however, and possibly not the most important.

Extensive cross-cultural study of mate preferences may

Table 1. Potential cues to good parenting skills

1. Kind and understanding
2. Intelligent
3. Emotionally stable and mature
4. Dependable character
5. Pleasing disposition
6. Healthy
7. Likes or wants children
8. Good cook and housekeeper

Source: Taken from Buss et al. (1990).

provide some clues to these cues (Buss et al. 1990). Table 1 lists the mate preferences revealed by that study, other than those discussed in the target article (Buss 1989), which were seen as important by nearly all of the 37 cultures sampled. These may be regarded as candidates for reliable cues to good parenting skills.

Kindness and understanding may be important because they signal disposition toward empathy (e.g., being able to understand what the child is feeling and needing) and benevolence when caring for children. Emotional maturity and dependable character may signal parental care that is reliably provided, rather than being erratic and unpredictable. Intelligence may signal, in part, the ability to exercise good parental judgment, good coping skills in times of stress and trauma, and flexibility in meeting the various complex demands of group living (see Barkow 1989). Good health of the parent may be essential for the good health of the children. Unhealthy parents may be hampered in their ability to exercise good parenting practices, provisioning, and protecting, and may also pass on diseases to their children that lower their survival. Such domestic skills as cooking and housekeeping may seem irrelevant in modern industrial times, but they may have made a critical difference during human ancestral conditions. Finally, a person's desire for children and cues to liking children may signal a greater proclivity to channel reproductive effort toward raising children rather than toward additional mating opportunities. These speculations all require empirical scrutiny.

Men and women value kindness, emotional maturity, intelligence, health, desire for children, and dependability about equally in nearly all 37 of the societies studied. This raises a point that Chisholm does not mention but which is a logical extension of his argument – women, as well as men, should select mates in part based on their potential parenting skills. Indeed, it may be even more important from a woman's perspective because the *variance* in men's parenting inclination and skill may be greater than the variance for women. Perhaps it is not by chance that male politicians are often seen cooing over and kissing babies during their campaigns. Little is known about what mate qualities are linked with good parenting skills in either sex, but it is a worthy topic for research.

Parenting skills in short-term and long-term mating contexts. A second issue pertains to the relevance of attending to cues to parenting abilities when pursuing short-

term opportunistic matings versus long-term high investment matings (what Chisholm refers to as "Cad" versus "Dad" strategies, which is perhaps misleading in the sense of implying that men pursue either one or the other; evidence indicates that many men pursue both, sometimes simultaneously). I disagree with the implication that parenting skills are mainly important when men pursue long-term mateships. In contexts where men mate but then do not stay to invest in offspring, selection for good parenting skills may be crucial, especially in light of Hill's (1989) findings that children without investing fathers have higher mortality and illness rates, at least among the Ache.

Of course, on theoretical grounds, one would expect men to relax their standards across the board when pursuing a short-term mating strategy (Buss & Schmitt, under review), and this would apply to cues to parenting skills as well as to other attributes. Nonetheless, when standards are imposed, cues to parenting skills should be important to men in both short-term and long-term contexts.

Chisholm expects that men who pursue a strategy that involves maximizing parental effort may prefer to marry older women – those in their mid- to late 20s, or older – because their greater parenting skills might lead to offspring with greater reproductive value (ORV). Three considerations suggest that this is unlikely. First, older women are of lower reproductive value themselves, and hence the man would be monopolizing only a fraction of the woman's reproductive capacity. Second, the age at marriage is nearly always younger than the age of bearing children; a man who marries a woman in her late teens, for example, may not produce children until the woman is in her early 20s or later – closer to the time that Chisholm cites as being optimal for parenting abilities.

Third, the human ancestral conditions in which these mate preferences evolved must be considered. Most women would have had kin around – mother, aunts, siblings – to help with the raising, protecting, and provisioning of the children. Furthermore, if a man waited until a woman was in her mid- to late 20s to secure a wife, he would likely have been left with women of low mate value that others did not want, or with women who already had children with another man – both of which would reduce the reproductive return on his mating investment. In contemporary tribal societies, for example, most women have had two or three children by the age of 25 (Symons 1989).

Finally, the empirical data show that young women are highly valued as wives cross-culturally. In the Kipsigis and many other cultures, women in their teens carry a higher bride-price than women in their mid- to late 20s (Borgerhoff Mulder 1988). Cross-culturally, men seem to seek the young women as wives, perhaps because it maximized their monopolization of a larger share of their reproductive span and capacity, regardless of the possibility of paying some temporary costs in the form of lower parenting abilities. Good cross-cultural data are clearly needed on the age preferences of men in short-term when contrasted with long-term mating contexts.

Measures of fitness and evidence of adaptation. A final point should be made about Chisholm's argument that number of offspring should not be used as the sole

measure of fitness, but rather the offspring's reproductive value should also be used. The problem I see is: used for what purpose? Recent theoretical arguments make it clear that correlating attributes with any measures of fitness is a poor and potentially misleading source of information about adaptation. Studies that do so imply, usually implicitly, that humans (and other organisms) have evolved mechanisms that function as domain-general fitness maximizers (Symons 1990; in press; Tooby & Cosmides 1990). Humans are "adaptation executors" not "fitness strivers" (Tooby & Cosmides 1990). Evidence for adaptation is better seen in complex special design features for particular adaptive problems that could not have arisen by change alone (Williams 1966) rather than in current correlation with any measure of fitness, whether based on simple offspring number or on the offspring's reproductive value.

In summary, Chisholm has pointed to an extremely important and largely neglected topic in the evolution of human mating strategies – parental skills and offspring reproductive value. The theoretical issues raised by this topic deserve theoretical and empirical scrutiny in both short-term and long-term mating contexts.

References

- Barkow, J. (1989) *Darwin, sex, and status: Biological approaches to mind and culture*. University of Toronto Press. [DMB]
- Borgerhoff Mulder, M. (1988) Kipsigis bridewealth payments. In: *Human reproductive behavior: A Darwinian perspective*, ed. L. Betzig, M. Borgerhoff Mulder & P. Turke. Cambridge University Press. [DMB]
- Buss, D. M. (1989) Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences* 12:1–49. [DMB]
- Buss, D. M., & Schmitt, D. (under review) *Sexual strategies theory: A contextual evolutionary analysis of human mating*. [DMB]
- Buss, D. M., et al. (1990) International preferences in selecting mates: A study of 37 cultures. *Journal of Cross-Cultural Psychology* 21:5–47. [DMB]
- Draper, P. & Harpending, H. (1982) Father absence and reproductive strategy: An evolutionary perspective. *Journal of Anthropological Research* 38:255–73. [JSC]
- (1988) A sociobiological perspective on the development of human reproductive strategies. In: *Sociobiological perspectives on human development*, ed. K. MacDonald. Spring-Verlag. [JSC]
- Hill, K. (1989) *Evolution of the termination of female reproduction in Homo sapiens*. Paper presented to the Evolution and Human Behavior Program, University of Michigan, Ann Arbor, Michigan. [DMB]
- Lancaster, J. & Hamburg, B., eds. (1986) *School-age pregnancy and parenthood*. Aldine de Gruyter. [JSC]
- Nortman, D. (1974) Parental age as a factor in pregnancy outcome and child development. *Reports on Population/Family Planning* 16:1–51. [JSC]
- Symons, D. (1989) The psychology of human mate preferences. *Behavioral and Brain Sciences* 12:34–35.
- (in press) On the use and misuse of Darwinism in the study of human behavior. In: *The adapted mind: Evolutionary psychology and the generation of culture*, ed. J. Barkow, L. Cosmides, & J. Tooby. Oxford University Press. [DMB]
- Tooby, J. & Cosmides, L. (1990) The past explains the present: Emotional adaptations and the structure of ancestral environments. *Ethology and Sociobiology* 11:375–424. [DMB]
- Williams, G. C. (1966) *Adaptation and natural selection*. Princeton University Press. [DMB]
- Winikoff, B. (1983) The effect of birth spacing on child and maternal health. *Studies in Family Planning* 14(10):231–45. [JSC]