

GRAY MATTER

Evolution and Bad Boyfriends

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Published: October 11, 2013

THROUGHOUT history and in societies all over the world, parents have tried to influence the love lives of their children — with mixed success. Parents and children frequently don't see eye to eye on what makes a suitable partner, as studies across cultures have confirmed.



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Whenever a pattern of human behavior is widespread, there is reason to suspect that it might have something to do with our evolutionary history. (Think of the fear of snakes, or the incest taboo.) You think your daughter's boyfriend isn't good enough? It may be evolution's fault.

But how could evolution have led to such an awkward situation as parent-child conflict over mates? In [a recent paper](#) in the journal *Evolution and Human Behavior*, we and two colleagues, the biologist Franjo Weissing and the social psychologist Bram Buunk, showed how it could work.

When thinking about mate choice, the natural starting point is the theory of sexual selection. This theory, which focuses not on the struggle for existence but on the competition to attract sexual partners, has been hugely successful in explaining the diverse courtship behaviors and mating patterns in the animal kingdom, from the peacock's flamboyant tail to the chirping calls of male crickets.

Modern mathematical versions of this theory show how female mating preferences and male characteristics will evolve together. But when you try to apply the theory to humans, you hit a snag. In humans, there is an extra preference involved — that of the parents.

At first sight, it might seem surprising that parents and their children should evolve to have any conflict at all. After all, they share many of the same genes, and both have an evolutionary interest in having those genes persist through the generations. Shouldn't the preferences of parents and their children be perfectly aligned?

Well, no — not completely. Parents each pass on half of their genes to each of their children, so from a genetic point of view, all children are equally valuable to them. It is in parents' evolutionary interests to distribute their resources — money, support, etc. — in such a way that leads to as many surviving grandchildren as possible, regardless of which of their children provide them.

Children, by contrast, have a stronger genetic interest in their own reproduction than in that of their siblings, so each child should try to secure more than his or her fair share of parental resources. It is this conflict over parental resources that can lead to a conflict over mate choice.

In our study, we built a computer model to simulate the evolutionary process. We generated a large virtual population of males and females, the males all differing genetically in their ability to invest resources in raising children. The females had a genetically determined preference for this male quality, which meant that females with a strong preference were more likely to end up with a male who invested more.

The males and females that paired up in our model then mated and produced offspring, who inherited (with a small chance of mutation) the investing qualities and mating preferences of their parents. We ran our model over thousands of generations, observing which genetic traits thrived and which didn't.

Evolutionary biologists had built this kind of model before to understand mating preferences in other animals, but we added some new ingredients. First, we allowed a female's parents to interfere with her choice of a male. Second, we allowed parents to distribute their resources among their children.

We found that over time, parents in our model evolved to invest more resources in daughters who chose mates with few resources. This unequal investment was in the parents' best interests, because a daughter with an unsupportive partner would profit more from extra help than her more fortunate sisters (the principle of diminishing returns on investment). By helping their needier daughters, parents maximized their total number of surviving grandchildren.

But this unequal investment created an incentive for daughters to “exploit” their parents’ generosity by choosing a partner who was less supportive. A daughter who was less picky than her sisters would accept a less helpful partner, but since her parents picked up the slack she ended up with a similar amount of support, while sparing herself the costs of holding out for the perfect man.

As a result, the choosiness of females gradually declined over evolutionary time. To counterbalance this, the parental preference for caring sons-in-law increased. Hence the conflict.

We’re not suggesting that the person you choose as a partner comes down entirely to your genes. Cultural factors, personal development and chance events presumably have a far greater influence. But given the prevalence of mate-choice conflict, it seems likely that evolution has played an important role.

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A version of this op-ed appears in print on October 13, 2013, on page SR12 of the New York edition with the headline: Evolution and Bad Boyfriends.