

Family Relationships

An Evolutionary Perspective

Edited by
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7 Parent–Offspring Conflict

Catherine A. Salmon

At first glance, the relationship between parent and child seems to begin in perfect harmony. The image of parents' devotion to their infant is one that has been depicted in art for thousands of years. It often seems like a sharp contrast to the modern image of the typical adolescent–parent relationship, usually portrayed as full of strife. But is either really accurate? What factors shape the degree of conflict between parent and child? And are there particular stages in the life of a child or a parent that attenuate or exaggerate the degree of conflict? An evolutionary perspective on the family provides useful insights.

PARENT–OFFSPRING CONFLICT THEORY

From a genetic standpoint, our children are all-important. They are our genetic passport into the future. So one might, on the surface, predict that parents would never come into conflict with their children; they would sacrifice all for their well-being. And under some circumstances, parents do just that, giving their time and resources to better equip their own children to be successful and have children of their own.

But conflicts do occur for various reasons, a primary one being that parental best interests and the best interests of any particular child may not exactly coincide. From the parental perspective, each child is equally genetically related to them by the degree 0.5 (i.e., they share 50% of their genes, on average). But among a sibship of children, each child is related to any sibling

by 0.5 but to themselves by 1.0 (the special case of identical twins, siblings related by 1.0, is discussed in a later chapter). As a result, children might be expected to care more about themselves than about their siblings, whereas parents might care equally about their children and invest accordingly. Such differing opinions about the allocation of resources among siblings are a primary source of parent-child conflict. Who has not heard themselves or heard stories about children accusing a parent of loving another child more than them or treating another child better? "Sally got a bigger piece of cake; not fair!" "You love Billy best!" This often spills into conflict between the siblings, either verbal or physical. And yet, the early stages of parent-child conflict are set and played out even before birth.

MATERNAL-FETAL CONFLICT

Although the majority of paternal investment in children occurs after the child is born, mothers begin to invest long before birth. For 9 months, the mother's body will provide all the nutrients for the baby's development in addition to a safe environment in which to grow. At this stage, it would appear that the fetus and mother have identical interests, the safety and growth of the fetus. But their genetic interests are not identical. Because the fetus is more closely related to itself than to either its mother or any future siblings, pregnancy becomes a sensitive balance between the developing fetus's attempts to secure as large a share of maternal resources as possible and the mother's attempts to preserve some resources for herself and future offspring. Fetal genes will be selected to increase the transfer of nutrients to the fetus, whereas maternal genes will be selected to limit any transfers that would be in excess of the optimum, from the mother's perspective. Often, this balancing act results in a variety of unpleasant symptoms for the mother and occasionally generates serious pregnancy complications. Haig (1993, 1998) has analyzed pregnancy complications from a maternal-fetus conflict perspective, suggesting that such conflicts are responsible for some puzzling aspects of pregnancy and its complications.

One of these complications involves gestational diabetes. Pregnancy alters the regulation of maternal blood-glucose levels, with fasting blood-sugar levels falling during early pregnancy and then stabilizing at a new lower level at the end of the first trimester and remaining there until the baby is born (Lind & Aspillaga 1988). However, fasting insulin levels remain the same during the first two trimesters, rising in the third along with the growth of the fetus. For a non-pregnant woman, blood-glucose levels rise after a meal but rapidly return to fasting levels in response to insulin release. For a woman in the later stages of pregnancy, maternal blood glucose and insulin

both reach higher levels and remain elevated for a longer duration. This occurs because the placental hormone, human placental lactogen (hPL) acts on maternal prolactin receptors to increase maternal resistance to insulin. If there is no opposition, hPL will maintain higher blood-glucose levels for longer periods after eating. However, this usually is opposed by increased maternal production of insulin. So, in the third trimester, the same meal will produce an exaggerated insulin response, which is less effective at reducing blood-glucose levels (Buchanan, Metzger, Freinkel, & Bergman 1990; Catalano, Tyzbit, Roman, Amini, & Sims 1991).

This occurs because the mother is attempting to restrict fetal access to blood glucose. Haig (1993) thought to ask two important questions: "Why should a mother restrict fetal access to glucose, and why should she increase her production of insulin at the same time as she is becoming resistant to its effects?" The partial answer is that if fetal demands for glucose go unopposed, the fetus may remove more glucose from maternal blood than is in the mother's interests to give up. For most of our evolutionary history, food was not in abundant supply, and so from both the fetus's and the mother's perspectives, resources are in high demand. After each meal, there is conflict over the share of blood glucose each will receive, and the longer the mother takes to reduce blood-sugar levels, the greater the share obtained by the fetus. Thus, the insulin resistance of late pregnancy is caused by placental hormones increasing blood-glucose levels and a corresponding increased production of insulin by the mother (Haig 1993). For pregnant women (without preexisting diabetes), the birth weight of the child has been positively correlated with maternal glucose levels two hours after a meal (Tallarigo et al. 1986). But the benefit of increased maternal glucose levels for the fetus can be gained at some cost to the mother's health. If blood-glucose levels remain elevated, gestational diabetes can develop. This condition occurs when the mother is unable to increase her insulin production sufficiently to match the insulin resistance that developed during the pregnancy.

Another arena in which maternal-fetal conflict occurs is maternal blood pressure. Blood pressure can be thought of in terms of two components, the cardiac output (or flow rate) and resistance, which is influenced by the size of the structures the blood flows through. During pregnancy, the fetus depends on the mother's circulatory system for all its needs. Conflict can arise over the relative flow of blood to the uteroplacental circulation (from which the fetus obtains its nutrients) versus the nonplacental remainder. Theoretically, the fetus can increase its share of the cardiac output by decreasing resistance in the uteroplacental circulatory subsystem or by increasing resistance in the nonplacental subsystem. The mother can reduce the fetal share of the output by doing the opposite, increasing uteroplacental resistance or decreasing nonplacental resistance (Haig 1993). As a result, placental factors

will act to increase maternal blood pressure, and maternal factors will act to decrease maternal blood pressure.

A fetus benefits from increases in maternal blood pressure. And, in fact, gestational hypertension typically results in a positive fetal outcome. Hypertensive pregnancies have lower perinatal mortality than normotensive pregnancies (Symonds 1980). For white American women, birth weight is correlated positively with maternal blood pressure for mothers with low pre-pregnancy weight and low weight gain during pregnancy (Naeye 1981). And studies suggest that chronic hypertension is associated with higher birth weights, and chronic hypotension is associated with lower birth weights (Ng and Walters, 1992; Salafia, Xenophon, Vintzileos, Lerer, & Silberman 1990). However, there are risks associated with pregnancy-induced hypertension when it is extreme and occurs along with proteinuria (excessive protein in maternal urine). This condition is called preeclampsia and can result in maternal and fetal death.

WEANING CONFLICT

The dispute over weaning in mammals is a clear example of parent-offspring conflict. Parents are selected to continue to invest in their offspring up to the point at which the cost, in terms of reduced reproductive success (the more parents invest in current offspring, the less they have to invest in future offspring), outweighs the benefits of increased survival for the current offspring. In other words, as soon as the costs begin to exceed the benefits ($B/C < 1$, where B = benefit of parental actions to an offspring's survival and C = cost to the parents' ability to invest in other offspring), parents should stop investing in the current offspring and start to work on the next (Trivers 1974). One can imagine a dog with a litter of puppies. From the mother's perspective, at a certain point, it is time to stop nursing. The puppies rarely agree at first, and they often have to be physically dislodged from the mother, sometimes being dragged, unwilling to relinquish the teat, as the mother gets up and moves away.

At this point, an offspring would prefer investment continue, being more closely related to itself than to any future siblings; it has been selected to demand investment until the cost-benefit ratio drops below 0.5. After that point, continued demands for investment would lead to a reduction in indirect fitness because the parent would produce fewer siblings with whom the offspring would share genes. In other words, we expect the mother to encourage altruistic acts among offspring when the benefits to one offspring are greater than the costs to another (Hrdy 1999). In turn, we expect that the offspring forced to give up benefits will agree only if the benefits to its

current or future sibling are twice the costs to itself. An offspring will be expected to stop attempting to extract more from its mother when the costs to the mother (in terms of her survival or ability to invest in future or other offspring) are more than twice the benefits that the offspring receives from the investment.

In this type of conflict, children are at a disadvantage. They are smaller and, to a certain extent, at the mercy of their parents. Physical force is not going to be a typical strategy of offspring to coerce more parental investment. The image of a mare kicking at her colt to get him to stop trying to nurse demonstrates the futility of children's trying to force parental cooperation. The tactics children use are quite different, temper tantrums being one example of behavior designed to manipulate parents into acquiescing to the child's will. In general, when parental investment is threatened, perhaps by the birth of a new sibling, children will often try to exaggerate their own need, acting younger (wanting to nurse and engaging in behaviors they had previously abandoned) or pretending distress to receive more parental care. This has been documented in other primates, such as chimpanzees (Hrdy 1999), and is familiar to anyone who has witnessed the behavior of young children who are either being weaned or dealing with a new baby in the family.

ADOLESCENT CONFLICT

Adolescence is often viewed as a time of conflict between parent and child. As children mature sexually and begin to form a sense of who they are, they remain socially dependent on their parents. For a minority of parents and their children, the conflict can be significantly stressful (Steinberg & Morris 2001), but for most, the conflict is relatively mild. One U.S. Gallup poll (Carroll 2002) reported that, according to the teenagers themselves, 97% of teenagers got along either fairly well or very well with their parents. Hardly the level of angst often portrayed in the media.

A typical conflict of the teenage years is unsurprising from an evolutionary perspective. Children are the vehicles of their parents' fitness and, as a result, parents have a keen interest in their children's reproductive activities and, in particular, their choice of a long-term mate or sexual partner. In societies with formally arranged marriages, parents have a significant amount of control over their child's mating partner. In societies in which people are, in principle, free to choose as mates whomever they want, parents still show a keen interest and express their approval or disapproval of these choices. In a sense, they have their own genetic interests at heart, although these interests may often coincide with those of their children.

FACTORS INFLUENCING PARENTAL INVESTMENT IN CHILDREN

Many factors can influence the amount of investment parents channel to any particular child. These factors tend to exacerbate, at times, the level of conflict between parent and child. In general, they fall into three categories: factors that influence the costs of investment to parents, factors that influence the benefits of such investments to parents, and the relatedness between parent and child.

Costs to Parents

Factors that influence the costs of investment to parents include parental age, the number of children they already have, and their own access to resources. With increasing parental age, the fitness value of any offspring of any given age and quality increases relative to the parents' residual reproductive value (or expected future reproductive value) (Fisher 1930). For any species in which expected future reproduction is a declining function of parental age, older parents will have been selected to invest more in offspring than will younger parents (Pugesek 1995, Salmon & Daly 1998, Volland & Gabler 1994). Evidence from many species suggests that this is the case (Clark, Moghaddas, & Galef 2002; Clutton-Brock 1984). There are also relevant human data. Studies of infanticide, for example, indicate that the age of the mother is a significant factor in the likelihood of her perpetrating infanticide. Young women—those likely to have many future opportunities to reproduce—might be expected to be more willing to sacrifice a current child. Women close to the end of their reproductive years who pass up the opportunity to have a baby may never have that chance again. As the likelihood of future reproduction decreases, the cost of delaying childbirth becomes expensive from a fitness perspective. As a result, we expect natural selection to favor older women who invest immediately and to a significant extent in children rather than delaying investment. The dramatic decrease observed cross-culturally in the rate of maternally perpetrated infanticide as a function of maternal age is a reflection of the change over time of the weight the maternal psyche places on a current offspring versus possible future offspring (Daly & Wilson 1995; Lee & George 1999; Overpeck, Brenner, Trumble, Trifiletti, & Berendes 1998).

The number of children parents have at any one time also is expected to have an impact on parental investment (and levels of conflict). Parental investment is a limited resource (whether measured in food, time, money, or other resources) that must be allocated among offspring, and most parental

resources will be in shorter supply when there are multiple children (not necessarily all the same age) at the same time. More children means fewer resources for any individual child. This is one reason that existing children are often so resistant to adding another child to the household, not being keen on sharing their parents with a sibling. Michalski addresses sibling relationships in his chapter in this volume, but it is clear that not only do parent and child disagree at times over the allocation of resources among siblings (Kennedy 1989, Salmon & Daly 1998) but also that sibling conflict is a reflection of these disagreements and conflicts.

The amount of resources available to parents is also expected to have an impact on parental investment. When resources are scarce or difficult to acquire, any parental investment is more costly from the parental perspective, as opposed to when resources are easy to acquire. Modeling studies of parental investment in the Western bluebird (Davis & Todd 1999; Davis, Todd, & Bullock 1999) demonstrated that the success of various parental decision-making rules depends on the amount of resources available to parents. The fewer resources parents have available, the more biased they should be in their investments. Parents with few resources ought to invest more in a single child, ignoring the others, giving at least that one child a decent chance at success. As resources become more abundant, more-egalitarian strategies are best, from the parental perspective. In other words, the degree to which parents divide current investment unequally among their children may be a function of the amount of resources available to them.

Benefits to Parents

Two factors that influence the benefits to parents of parental investment are the age of the child and the child's expected future prospects. In terms of the age of the child, we expect a greater fitness payoff from investing in older children. An individual's expected contribution to parental fitness is mainly in his or her reproductive value or expected future reproduction. This quantity increases with age until puberty, making an older, immature offspring more valuable from the parental perspective than a younger one (Montgomerie & Weatherhead 1988). This increase is due primarily to the degree of childhood mortality in developing societies. The average teenager has a higher reproductive value than the average infant because some infants do not survive to their teenage years. Surviving to puberty was more difficult over most of human evolutionary history, when rates of infant mortality were higher. But it is also true that, on average, the older a particular child gets, the less valuable parental investment, especially certain kinds of investment, will be in terms of the child's ability to use it when compared to its utility to other,

younger children. A great deal of parental investment is critical to the survival and reproductive future of young children.

Parents respond to the changing needs and abilities of their children. Infants require more time, perhaps teenagers more money. But when times are very tough, and one child must be sacrificed so that others can be saved, it is a cross-cultural universal that the youngest is the likeliest victim (Daly & Wilson 1984). Studies of Canadian homicides also suggest a greater valuation of older children. Daly and Wilson (1988) have studied familial homicide for more than 20 years. When they examined the risk of homicide of a child by a genetic parent in relation to the child's age, infants were at a much higher risk of being killed than any other group of children. After 1 year of age, the rates drop dramatically until they reach close to zero at 17 years of age. Lest the reader supposes this is because it is easier to kill a baby than a teenager, consider this: The risk of a child being killed by a non-relative shows a rather different pattern, with 1 year olds more likely to be killed than infants, and teenagers the most likely to be killed.

A child's future prospects will also be expected to play a role in the benefit to parents of parental investment. The survival and reproductive success of the child are factors that define the benefit to parents. If it were unlikely that there would be a fitness return on investment, natural selection would be unlikely to favor mechanisms that direct investment toward such a child. Like age, the child's expected future prospects are related to his or her ability to convert parental investment into fitness. As a result, we expect parental solicitude to be sensitive to cues of child "quality" or ability to convert parental care into future reproductive success. For example, children who are disabled in some way, all else equal, are likely to have lesser future reproductive success than children who are healthy (Daly & Wilson 1984).

Poor infant quality affects parental investment. Children born with a severe physical deformity are more likely than non-deformed infants to be the victims of infanticide, especially in societies where institutional care of the disabled is not available (Daly & Wilson 1984, 1988). Hill and Ball (1996) examined the ethnographic literature for the reasons given cross-culturally for infanticide. Most involved abnormal circumstances surrounding the birth, but they noted that many of the characteristics were associated with conditions that increase infant or childhood morbidity. The increased level of care such children require for a lower evolutionary payoff (they are less likely to reproduce even if they do survive) means that parents are better off if they terminate investment early and begin to invest in a new child. Even in North America, children with physical disabilities are at greater risk of abuse and more likely to suffer injuries that require a hospital visit at the hands of their parents than are healthy children (Daly & Wilson 1984).

Abuse, neglect, and filicide are not the only phenomena that reveal the importance of a child's future prospects as predictors of parental investment. Trivers and Willard (1973) argued that when one sex has a greater variance in lifetime reproductive success than the other and when parents (particularly mothers) vary in their physical condition or access to resources in a way that influences children's success, differences in preferences for children of one or the other sex are likely to evolve. If male reproductive success depends on the individual's condition, mothers in good condition who are able to invest heavily will be able to influence the reproductive success of their sons more successfully than will mothers in poor condition. They should prefer to have sons, or to invest more in their sons than in their daughters (Bercoitch, Widdig, & Nurnberg 2000; Trivers & Willard 1973). Mothers in poor condition should prefer daughters because daughters are less of a reproductive risk (women have lower variance in reproductive success than do men). This is known as the Trivers-Willard effect, and it has been demonstrated in non-human species such as horses (Cameron & Linklater 2000) and other ungulates (Sheldon & West 2004).

In humans, several studies have demonstrated the Trivers-Willard effect (Gaulin & Robbins 1991, Hopcroft 2005, Kanazawa 2005), but others have found no evidence for sex-biased investment (Freese & Powell 1999; Keller, Nesse, & Hofferth 2001; Sieff 1990). Dickemann's (1979) review of infanticide in the Indian caste system reveals that infanticide was common in high-caste families before the 20th century. The victims were overwhelmingly female. The problem was that there were very few marriage options for high-caste daughters because they could marry only within their own caste, not into a lower one. For high-caste families, investment in sons (who could marry women from their own or lower castes) paid larger dividends in terms of grandchildren. As a result, parents biased their investment heavily toward boys (Gupta 1987). At the lower end of the social scale, the tendency for men to marry down meant daughters out-reproduced sons, and low-caste parents biased their investment toward daughters. This can be seen in a much lower rate of female infanticide among the lower castes. Studies in the United States (Gaulin & Robbins 1991) and Kenya (Cronk 1989) indicate that female infants from low-income families are nursed more than are infant boys.

Berezkei and Dunbar's (1997, 2002) studies of Hungarian Gypsy populations are informative. When compared to native Hungarians, Gypsies have many more daughters than sons. Like the lower caste Indians, the Gypsies are low in social status. Gypsy women, like their low-caste Indian counterparts, are much more likely to marry up the social scale than are men, and typically out-reproduce their Gypsy brothers. In the process, they also tend to have healthier babies than do those Gypsy women who marry within their own

group. Like the low-caste Indians, Gypsy parents invest more heavily in their daughters than in their sons. Bereczkei and Dunbar (1997) also found that compared to native Hungarians, Gypsy women spent more time nursing their firstborn daughters than nursing their sons, and provided more education for their daughters than for their sons (their education was not free and came at a significant cost to the parents).

But there are times when investment may favor sons over daughters. In societies where the possession of resources has a significant impact on male reproductive success (such as in India), a preference for sons, or for investing heavily in them, will be seen among the affluent. This was also the case in 18th-century northern German villages (Volland 1998) and has been noted in the records of probated wills among Canadians living in British Columbia (Smith, Kish, & Crawford 1987).

Relatedness

From a genetic perspective, the degree of relatedness will influence investment. Three factors that influence relatedness in a parent-child context are paternity certainty, stepparenting, and adoption.

Paternity certainty is one of several reasons women typically invest more in parenting than do men. From a genetic perspective, men should invest only if they are sure the child is their own. For human (and other mammalian) females with internal fertilization and gestation, maternity has never been in doubt. Men do not have that degree of certainty ("Momma's baby, Papa's maybe") and therefore should be alert to cues of paternity, tending to invest only when such cues are present. This is well documented in birds (Green 2002, Osorio-Beristain & Drummond 2001), and there are numerous studies that suggest that paternity uncertainty has an impact on human paternal investment. Daly and Wilson's (1982) study of the comments made by Canadian parents and grandparents after the birth of a child suggests that mothers and maternal grandparents make many more comments about paternal resemblance in the baby's face than about any maternal resemblance. Similar results were found in a Mexican replication of the Daly and Wilson study (Regalski & Gaulin 1993). Maternal kin seem to go out of their way to present the image of the baby as a little version of the father—especially if the "father" is around to hear these comments.

Stepparenting influences relatedness in that the stepparent is not genetically related to any of his or her stepchildren. In this case, paternity (or maternity) or the lack of it is clear, and we would predict that mechanisms that motivate the allocation of parental investment will be sensitive to whether or not a child is a person's genetic child, with the result that resources are

directed away from stepchildren and toward genetic children. This can also cause conflict between parents over the allocation of resources. For example, a woman with children from both a previous union and a current union is equally related to all her children and might desire to allocate her investment equally, whereas her partner might desire to allocate resources preferentially toward the children that are the product of their union only and not her previous one (Hofferth & Anderson 2003). In turn, siblings who are stepsiblings are related through one parent, not two, and thus will be expected to value themselves even higher in relation to their stepsiblings than they do in relation to their genetic siblings, increasing the degree of conflict they experience over parental resources.

Daly and Wilson (1984, 1988, 2001) have spent many years studying the dynamics of discriminative parental solicitude, often focusing on stepparenting in humans. If we view parental care along a continuum, self-sacrifice might be found at one end (parents who sacrifice not only their own wants but in some cases their health and even their lives), whereas at the other end are acts that inflict costs on the child, including child neglect, abuse, and homicide. Inclusive fitness theory would suggest that genetic relatedness to a child is one predictor of the willingness to invest. The less genetically related the adult is to the child, the lower the likelihood of investment and the higher the risk of infanticide. Daly and Wilson tested this proposal in their study (Daly & Wilson 1988) of child abuse in Hamilton, Ontario. The results indicated that children living with one genetic parent and one stepparent are about 40 times more likely to be physically abused than are children living with both genetic parents. This occurs even when controlling for poverty and socioeconomic status. It is necessary to control for these because poverty and socioeconomic status are associated with higher rates of child abuse.

A similar pattern is seen in cases of children killed by a parent. The perpetration rates of infanticide are far higher for stepparents than for genetic parents, and the risk is highest for the very young, especially those under 2 years of age. Daly and Wilson (1988) found that the risk of a preschool-aged child being killed ranged from 40 to 100 times higher for stepchildren than for children living with two genetic parents. In many cases, it is not so much that the stepparent actively desires to kill the child but that he or she is not as careful or caring as a genetic parent might be, and so often the child dies from indifference or intolerance rather than specific enmity. And, of course, not all stepparents are dangerous to their stepchildren; many are very good and caring parents. But even many of those good stepparents report that their affection for their stepchildren is not as great as that for their own biological children (Ganong & Coleman 1986, Hobart 1988; 1989).

A less extreme example of discriminative parental solicitude involves the degree of investment, rather than the decision to maintain or terminate

investment. Stepfathers invest fewer financial resources in their stepchildren than in their biological children. In a study of Albuquerque, New Mexico, men, Anderson, Kaplan, and Lancaster (1999) reported that genetic children were 5.5 times more likely to receive money for college than were stepchildren. In fact, genetic children received, on average, \$15,500 more for college and had 65% more of their college expenses paid for than did stepchildren. Some researchers have also proposed that when stepparental investment is seen, it may reflect mating effort on the part of men (intended to make themselves more attractive to their new mate) rather than parental effort per se (Anderson et al. 1999; Hofferth & Anderson 2003; Rohwer, Herron, & Daly 1999).

Adoption also changes the degree of relatedness, and it can do so to varying degrees. The adoption of related children changes relatedness but does not eliminate it. When unrelated children are adopted, there is no genetic relatedness at all. With one's own children, relatedness is 0.5. The adoption of other genetically related kin (e.g., niece, cousin's child) would entail a lesser degree of relatedness, but there would still be some genetic common interest. As a result, we would expect a lesser degree of parental investment in adopted related children than in their own genetic children (Silk 1980). But from this perspective, we expect little to no parental investment in an unrelated adopted child because there is no genetic link. With stepparent situations, at least one parent is the genetic parent; in unrelated adoptive situations, there is no genetic parent present.

It seems unlikely, however, that the adoption of unrelated individuals has occurred with any significant frequency over most of our evolutionary history. Non-human primates, who often live in kin groups like humans do, tend not to adopt orphaned young (Silk 1990). In most species, especially in ones where parents come into contact with many young to whom they are not related, such as in colonially nesting birds (Medvin & Beecher 1986) or bats (McCracken 1993), parents recognize their own offspring. In species in which parents are solitary or their offspring tend to remain in the nest or den where they are born (e.g., some cliff-nesting birds) (Medvin, Stoddard, & Beecher 1993), parental recognition is less accurate (for example, a bird might feed any baby bird that was in its nest), and accidental adoptions occur, in which the adopted bird is treated as if it is the genetic offspring of the parent (Knudsen & Evans 1986, Medvin, Stoddard, & Beecher 1993).

The majority of information about historical accounts of human adoption and adoption practices in traditional societies has focused on the adoption of genetically related individuals. Individuals who cannot have their own genetic children sometimes adopt a sibling's child when that sibling has an excess of children (Pennington & Harpending 1993, Silk 1980, 1987).

Stack's (1974) study of an urban black community indicated that most of the fostered children were with their mother's genetic kin, typically older sisters, aunts, or grandmothers. There is no theoretical reason to expect a mechanism designed specifically to deal with the adoption of genetically unrelated individuals because the historical evidence suggests it rarely occurred. It may be that in our current human environment, strong parental and cultural desires lead some individuals to adopt unrelated children. Indeed, the relationship between adopted children and parents in the modern Western world typically functions in the same way as that between genetic parents and children, particularly when the adoption is of infants. In such cases, the majority of parent-child relations mimic those of a biological parent-child unit in that, other than childbirth and breastfeeding, the early care and rearing are similar to that of a biological child. It would be interesting to compare the bonding process for adoptive mothers and fathers. Is it easier for adoptive fathers because they have always had to learn that a child is their own than for mothers, who are missing the pregnancy and birthing that is part of the natural process? Greater levels of conflict are more often found when the child is adopted at an older age (Barth & Berry 1988, Stolley 1993). Such children may have suffered from abuse, neglect, and abandonment and have difficulty accepting or trusting their new parental figures. The new parents may also experience difficulty supporting and bonding to their new children; in some cases this is exacerbated by the special needs of some of these children (Groze 1986). More evolutionarily informed studies of the dynamics of adoption might help identify the factors that assist in easing or exacerbating the conflicts experienced in the adoption of unrelated children, such as resemblance, "quality" of the child, and so on.

CONCLUSIONS

Many aspects of the relationship between parent and child show remarkable consistency throughout history and between cultures. As a result, we expect psychological mechanisms to have evolved that are designed to manage these relationships, mechanisms that are sensitive to the many social and ecological variables that influence such relationships, including the various costs and benefits of investment from both parents' and children's perspectives. Although parent and child have shared genetic interests, they are not identical interests, and this fact can lead to various forms of conflict from maternal-fetal, to weaning, to conflicts over which child gets what, to conflicts over friends and sex. The better we understand the psychology behind such conflicts, the better able we will be to understand not only our own behavior but that of our children.

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