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CHAPTER 5

STEPARENTHOOD AND THE EVOLVED PSYCHOLOGY OF DISCRIMINATIVE PARENTAL SOLICITUDE

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Quand la femme se remarie ayant enfants

Elle leur fait un ennemi pour parent

— 16th century French proverb (Segalen, 1981)

One need not know anything about 16th century France to find the idea expressed by this proverb familiar: A new stepfather constitutes a threat to children. An even more prevalent and menacing figure in Western lore is the malevolent stepmother. Consider the stories of Cinderella and Snow White, or (less familiar to anglophone readers) la Maratré, who cooked and served to her unwitting husband the child of his former marriage. So pervasive is this image that steprelationships have become a conventional metaphor for the absence of genuine commitment: If I complain that behavioral biology is the “stepchild” of a federal agency funding scientific research, my meaning is immediately understood.

Negative characterizations of stepparents are not peculiar to European traditions. Consult an encyclopedic source such as the *Motif-index of folk literature* (Thompson, 1955), for example, and you will encounter evil stepmothers from around the world. As for stepfathers, Thompson divides his entries, for the sake of convenience, into two categories: folktales about “cruel stepfathers” and those about “justful stepfathers”. Hunter-gatherer

or horticulturalist, tribesman or city-dweller, the stepparent is the villain of every piece.

Negative images of stepparental relationships persist in the contemporary American populace (*e.g.* Bryan *et al.*, 1986; Fine, 1986). The social scientists who have documented these negative images typically refer to them as "myths" and "stereotypes". The implication of these terms (presumably an intended implication; see, *e.g.* Harding, 1968) is that worries about possible risks to stepchildren are unfounded. However, the researchers who have documented the existence of these "myths" and "stereotypes", and who have then decried their pernicious influences, have consistently ignored or obfuscated a crucial question: What, if anything, is their basis in reality?

OWN VERSUS ALIEN

To the Darwinian imagination, the hypothesis that stepparenthood entails genuine risk to children is immediately plausible and deserving of empirical investigation. The reason is as follows. Parental investment ("PI", *sensu* Trivers, 1972) is a precious resource, such that those parental phenotypes which somehow succeed in channeling PI to genetic relatives necessarily enjoy a selective advantage over alternative phenotypes which disperse the benefits of their efforts less discriminatively. This theoretical expectation has been upheld in numerous empirical studies: Animals have evolved diverse discriminatory mechanisms that function to identify own offspring and to direct parental nurture selectively to them (see Daly and Wilson, 1988a). Moreover, comparative studies indicate that parents' recognition of their own young and attendant favoritism are best developed in those species and at those life stages in which there is significant selective pressure in the form of risk that PI will be misdirected (*e.g.* Beecher *et al.*, 1986).

The ubiquity and importance of discriminative parental preferences for own versus alien young were long overlooked by comparative psychologists. This neglect is apparently attributable to an unfortunate happenstance: the fact that the physiological controls of maternal behavior have been investigated primarily with the convenient laboratory rat and mouse. It so happens that these burrow-dwelling rodents are scarcely affected by the own-alien distinction, blithely mothering whatever young they encounter in their nests, including even pups of other species, and because of this peculiarity, mammalian mothering has come to be conceptualized as a motivational state of the mother rather than as an

individualized relationship. Experimenters assess levels of activation of this "maternal state" by measuring responses to "standard stimulus pups", and the physiological and behavioral determinants and manifestations of this maternal state provide seemingly inexhaustible material for experimental investigation (see, *e.g.* various papers in Krasnegor and Bridges, 1990). The reason that this is unfortunate is that a rat-like state of diffused maternal responsiveness is by no means the mammalian norm. In species in which the young are ordinarily nursed in social situations and unrelated same-age young can therefore mingle, mothers form individualized bonds with their own infants in the immediate postpartum; such mothers will attack and even kill aspiring milk thieves despite being fully "maternal" (*e.g.* LeBoeuf and Briggs, 1977 *re* seals; Gubernick, 1981 *re* goats). Burrow-dwelling or hole-nesting species with immobile altricial young, by contrast, have experienced no selection pressure for such early discrimination, with the result that experimenters who transfer pups between nests find the mothers unperturbed. In effect, the nest site and her own odors have become the cues by which a mother rat "recognizes" her young. But in species in which the young become sufficiently mobile to intermingle before they are fully weaned, then even among burrow-dwelling rodents, mothers develop an individualized recognition of their pups and begin to discriminate in their favor at about the time when pup mobility promises an imminent risk that maternal care will be misdirected to alien pups. (It is also worth mentioning here that laboratory rats and mice have undergone intense selection for successful weaning of pups in the presence of an abnormal density of olfactory, auditory and other stimuli of conspecific origin, both in colony rooms and in communal nursing cages.)

The general point is that mammalian motherhood is not typically a generalized state of nurturant inclination toward just any little beggar who happens to present the sign stimuli of a conspecific youngster. Mothers love, nurture, and risk their lives on behalf of those *particular* youngsters who present the mothers with evolutionarily reliable cues that they are *their* youngsters.

NON-HUMAN STEPPARENTING

Non-human animals often find themselves caring "parentally" for young who are not their own progeny. Many such cases represent instances of "brood parasitism" in which the mechanisms of discriminating own from alien young have been circumvented, whether by conspecifics (Rohwer and Freeman, 1989) or by parasitic specialists like the European cuckoo

(Davies and Brooke, 1991). Many others are instances of "cuckoldry" in which the young in question are indeed those of their ostensible mother but have been sired by someone other than their ostensible father (Westneat, Sherman and Morton, 1990); this state of affairs may be no more evident to the cuckolded male than to the human observer.

Paradoxically, although the victims of brood parasitism and cuckoldry regularly make maladaptive investments of parental effort in nonrelatives, it is where these phenomena occur that we find some of the best evidence that selection favors discriminative allocation of PI in favor of own young. In what has been called a "co-evolutionary arms race", species with a long history of victimization by particular brood parasites have often evolved to be more discriminating than unparasitized species, and the brood parasites have often evolved further tactics, such as egg and chick mimicry, and rapid, surreptitious egg deposition, to counter host discrimination (Davies and Brooke, 1991). Similarly, males of species with an evolutionary history of cuckoldry manifest evolved defenses against this recurring threat to fitness, such as mate-guarding specifically confined to the mate's fertile periods and modulation of subsequent paternal effort in relation to the thoroughness of mate surveillance at the time when the young might have been conceived (Møller, 1988; Burke *et al.*, 1989).

Neither brood parasitism nor cuckoldry is closely analogous to stepparenthood, however, because both are cases in which the pseudoparent is in effect "deceived" about parenthood. The misdirected PI in both cases depends upon the alien young's intruding undetected into a situation in which the unrelated adult is prepared to invest in its own young. A closer analogy to stepparenthood would be one in which the investing individual has reliable cues of nonparenthood, but plays parent to a new mate's young from a prior union nonetheless.

Post-zygotic care in many substrate-spawning fishes is provided by the male alone, who may invite multiple females to spawn in his nest. In such cases, eggs already in the nest may be attractive to females, inspiring males to steal eggs or usurp nests as courtship devices. In the process, the usurper assumes the paternal role of guarding and perhaps aerating eggs sired by other males. Sargent (1989) showed that such adopted eggs were less well cared for by male fathead minnows than the usurpers' own and that they suffered higher mortality. This is a nice demonstration of own-alien discrimination, but Sargent's titular claim that "stepparents discriminate against their adopted eggs" may not be the best way to describe it. To be a "stepparent" is to assume paternal status by virtue of replacing the genetic father as the genetic mother's mate. The fathead minnow "stepparent"

apparently uses unrelated eggs as courtship lures, but he does not mate with those unrelated eggs' mother. A much closer analogue comes from Yanagisawa and Ochi's (1986) study of pair-forming anemonefish, in which the disappearance of one member of a pair leads to the appearance of replacement mates who sometimes help care for their predecessors' fry. In this case, suitable breeding situations are scarce, and Yanagisawa and Ochi argue that stepparental effort constitutes mating effort, a price paid for future reproduction with the surviving genetic parent of the present brood.

The situation is similar in many biparental birds. Rohwer (1986) has reviewed a large number of observations of avian mate replacement and subsequent behavior. He distinguishes three possible responses to the still dependent young of a predecessor: active elimination (infanticide), ignoring them, and the assumption of parental duties. Each of these three responses has been observed in several species, and all three may even be the responses of different individuals within a single species, but there are large species differences in what is typical. Rohwer adopts the adaptationist expectation that typical responses in this situation will be fitness-promoting decisions shaped by past selection, and derives a number of comparative predictions from this view, concerning the expected associations of the three alternatives with such factors as the species' adult sex ratio and its reneating and dispersal practices. The evidence runs mostly in the direction of Rohwer's hypotheses, but he notes many anomalies and a paucity of good evidence on several questions. One idea that seems not to have been systematically tested is that even when they "adopt", stepparents might have different thresholds of tolerable cost than genetic parents in such domains as the defense of the brood against predators.

Underlying Rohwer's analysis is essentially the same argument as Yanagisawa and Ochi's (1986) explanation for stepparental efforts in anemonefish: that where stepparental adoption is prevalent, it represents an investment in the courtship of the genetic parent, elevating the probability and/or the effectiveness of subsequent breeding with the assisted mate. Smuts (1985) invoked much the same explanation for the observation that male baboons indulge infants and juveniles they cannot have sired; certainly, male baboons' behavior is far from universally benign, including considerable intolerance and occasional infanticide, and a male's kindness to a select youngster is part and parcel of his cultivating a "friendship" with the mother. We suggest that human willingness to enter into situations of stepparental obligation is similarly to be explained as a component of courtship of the genetic parent.

HUMAN STEPPARENTING

Substitute parenting in the human animal presents some obvious difficulties as regards the Darwinian prediction of discriminative parental solicitude in relation to cues of relatedness. People regularly undertake the parenting of children under circumstances in which they have reliable cues that those children are not their own. And whereas we may wonder if a nonhuman animal has correctly processed available cues of nonparenthood or has instead been "deceived", there is little question that human beings know that they are not the genetic parents of their adopted or stepchildren; they can tell you so. Must we conclude that human beings lack the discriminative parental solicitude characteristic of most other mammals? And, if so, why?

In this chapter, we shall consider the issues only with respect to step-parenting: the acquisition of pseudoparental obligation as an incidental cost associated with the establishment of a new relationship. Adoption of children unrelated to either "parent" is a different matter, an effort to simulate the genetic nuclear family experience for its own sake rather than as an incidental consequence or attendant cost of the pursuit of other social goals. Such "adoption by stranger" is beyond our present scope (but see Daly and Wilson, 1980; Silk, 1990).

One possible hypothesis to account for stepparental investment might be that human parental solicitude is vulnerable to parasitism by unrelated young because our ancestral circumstances, like those of burrow-dwelling rodents, placed no selective premium on discrimination. Perhaps, during millennia of human evolutionary history, stepparenthood was simply not the sort of recurring adaptive problem that would have inspired the evolution of psychological defenses against it. Nonnutritive saccharine, an evolutionarily unforeseen component of novel environments, tickles our evolved system for the recognition of nutritive sugars. Might stepparenthood constitute a sort of novel social environment: an evolutionarily unforeseen circumstance in which the evolved psychology of parenthood is activated maladaptively?

Such an hypothesis appears to gain plausibility when one turns to the social scientific literature on stepparental relationships. Cherlin (1978) proposed that stepparenthood is a novel "role" or status whose ground rules have yet to be established, and that difficulties attend stepparental relationships because of this "incomplete institutionalization" and attendant "role ambiguity". Many writers have embraced and elaborated upon this sort of interpretation (e.g. Kompara, 1980; Giles-Sims, 1984; Keshet, 1990), which is in effect a novel social environments argument, albeit a non-Darwinian one. (This "novel

social role" argument has not been articulated in an evolutionarily sophisticated form. An implicit premise of the conceptual framework of its proponents is that social influences and expectations impact upon all roles and relationships in qualitatively similar ways, so that the characterization of the essential distinguishing features of, say, peer *versus* mating *versus* filial *versus* sibling relationships and their respective psychologies is not even part of the analytic agenda. Reconciling this implicit premise that all relationships are essentially alike with elementary principles of social evolution would be difficult if not impossible, but the social scientists who adhere to this premise have not perceived the problems facing their domain-general conception of sociality, let alone confronted them.)

Of course, the fact that the novel social role argument is non-Darwinian does not mean it must be wrong. But even in its own terms, this popular analysis is ahistorical, ethnocentric, and counterfactual. Stepparenthood is *not* a novel circumstance. The mortality levels incurred by tribal hunter-gatherers guarantee that remarriage and stepparenthood have been common for as long as people have formed marital bonds with biparental care; moreover, the ethnographies of recent and contemporary hunter-gatherers abound with anecdotal information on both the prevalence of stepparental relationships and their predictable conflicts (e.g. Shostak, 1981; Hill and Kaplan, 1988). Nor is stepparenthood even newly prevalent in "our society". Historical records indicate that stepparental relationships, consequent upon both widowhood and divorce, have been numerous for centuries in the western world (e.g. Dupâquier *et al.*, 1981). Moreover, European historical archives show that having a stepparent was associated with mortality risk in fact and not just in fairy tale (Voland, 1988).

A defender of Cherlin's "incomplete institutionalization" argument might protest that it was offered only as a description and explanation of the most recent American trends. It has become a platitude to claim that stepparental relationships were recently rare, but that escalating divorce and remarriage are now making it more the norm than the exception. But in fact, Cherlin and his followers have not demonstrated that the allegedly novel and burgeoning phenomenon of stepparenthood was ever very much rarer in American life than it is now. More importantly, their attempt to account for stepparental relationships in terms of the peculiarities of rapid social change in the contemporary U.S.A. is superfluous: All available evidence suggests that stepparental relationships are more conflictual than the corresponding genetic relationships in *all* societies, regardless of whether stepparental relationships are rare or common and regardless of their degree of "institutionalization".

The cross-cultural ubiquity of Cinderella stories reflects certain basic, recurring tensions which have always characterized human society. If a widowed or forsaken parent of dependent children wished to forge a new marital career, then the fate of the children became problematic. A common solution to the dilemma created by stepparents' disinclination to raise the children of their predecessors has been to leave half-orphaned children in the care of post-menopausal female relatives. Alternatively, a widow may retain her children but be blocked from free reentry into the marriage market and be obligatorily remarried to the dead man's brother or other near relative, instead. This practice (the "levirate"), which occurs in a number of patrilineal, patrilocal societies in which the deceased husband and his agnatic kin have paid a "bride-price" for the woman's productive and reproductive services, provides the children with a stepfather who already has a benevolent interest in their welfare, namely their uncle, and thereby at least mitigates the probability or severity of exploitation and mistreatment. In the absence of such practices, children were obliged to tag along as best they could, hoping that their welfare would remain a high priority of the surviving genetic parent.

In tribal societies, the available evidence indicates that the half-orphan who enters the perilous status of stepchild faces a major diminution in the quality and quantity of parental nurture, and a significantly elevated risk of death. An infant's having been fathered by a man other than the mother's present husband is a widely cited rationale for infanticide (Daly and Wilson, 1984), and the hazards extend to older children, too, even if they are not explicitly marked for death. In a study of the foraging Ache in Paraguay, Hill and Kaplan (1988) compared the life trajectories of 67 children raised by mother and stepfather after their natural fathers' deaths to those of 171 children raised by two genetic parents. Twenty-nine (43%) of the stepchildren had died, by a diversity of causes, before reaching the age of 15, as compared to just 19% of those reared by surviving parents.

What about the modern west? Are people in contemporary industrial societies significantly more likely to neglect, assault or otherwise mistreat their stepchildren as compared to their genetic offspring? One might suppose that this rather obvious question would have received considerable attention during the explosion of child abuse research that followed Kempe *et al.*'s (1962) agenda-setting proclamation of "the battered-child syndrome", but the question was curiously overlooked by researchers whose imaginations were not informed by Darwinism. The first published study addressing it did not appear until 1980, when we (Wilson, Daly and Weghorst, 1980) showed that stepchildren constituted an enormously higher proportion of the American Humane Association's "validated" case

reports of child abuse than their numbers in the population-at-large would warrant. Moreover, the over representation of stepchildren was more extreme in assaultive cases than in those that were solely neglectful, and vastly more extreme in the lethal cases. The results of these initial analyses also suggested that steplationship was not dangerous by virtue of some incidental association with poverty, for there was no such association; steplationship and poverty instead constituted two independent risk factors for child maltreatment (Wilson *et al.*, 1980; Daly and Wilson, 1981).

Our subsequent research on this question has consistently found even larger differences in the risks to children living with step-plus-genetic-parent *versus* two-genetic-parents than in our initial study. In a local study of child abuse and the household circumstances of children in Hamilton, Ontario, for example, we found that preschoolers living with step-plus-genetic-parent were more than forty times as likely to be victims of severe abuse as those residing with two genetic parents (Daly and Wilson, 1985). The differences were essentially independent of the impacts of such risk factors as low socioeconomic status, large family size, and maternal youth (Daly and Wilson, 1985; Wilson and Daly, 1987). We and others have also demonstrated that abusive stepparents are typically discriminative, sparing their own children within the same household (Lightcap, Kuriland and Burgess, 1982; Daly and Wilson, 1985; see also Flinn, 1988); this result refutes the hypothesis (Giles-Sims and Finkelhor, 1984) that excess risk in stepparents has nothing to do with steplationship *per se*, resulting incidentally from an overrepresentation of violent personalities among remarried persons.

The overrepresentation of stepparents in child abuse samples might be explained away as a product of biased detection or reporting, were it not for the fact that stepparents are even more strongly overrepresented in fatal cases, where reporting biases should be minimal. Whereas the subtle risk differentials between step-plus-genetic-parent and two-genetic-parent homes in our initial American study were only on the order of two- to seven-fold (depending on the child's age), for example, the same data set indicated that the differential in fatal abuse was on the order of 100-fold (Daly and Wilson, 1988c). In Canada, too, the differential risk of being slain by a stepparent versus a genetic parent is even greater than the substantial differential in subtle abuse noted above (Daly and Wilson, 1988b). Recent English data tell much the same story: One can estimate from Creighton's (1985) child abuse statistics and Wadsworth *et al.*'s (1983) cohort study of children's household circumstances that victimization in step-plus-genetic-parent homes exceeded that

in two-genetic-parent homes by a factor on the order of 30, whereas the fatal baby battering data reported by Scott (1973) apparently indicate that this risk was more than 150 times as great at the hands of a stepparent as compared to a genetic father. In a recent Australian study (Wallace, 1986), the overrepresentation of stepparents among fatal baby batterers was greater still.

Conflict in stepparent relationships is not confined to the violent extremes asayed by child abuse and homicide samples. A massive literature on American stepfamilies has developed in recent years. Most of the research has been conducted with volunteer subjects of middle class background, some having sufficient difficulties to have sought help, others apparently thriving. This literature has a single focus: the conflicts and dissatisfactions of step-family life, and how people cope with them (see, e.g. Anderson and White, 1986; Pasley and Ihinger-Tallman, 1987; Wilson and Daly, 1987; Ihinger-Tallman, 1988; Giles-Sims and Crosbie-Burnett, 1989). Lest we paint too bleak a picture, it is important to stress that people *do* cope; stepparent relationships clearly can work reasonably well. Some stepparents, albeit a minority, even feel able to profess to "love" their wards (Duberman, 1975). But though stepparent relationships are not inevitably hostile, the extensive literature is nevertheless unanimous that they are, on average, more distant, more conflictual, and less satisfying than the corresponding genetic parent-child relationships.

It may seem remarkable that stepparent relationships are ever peaceful, let alone genuinely affectionate. But of course violent hostility is episodic and amicableness is frequent even among nonrelatives. People thrive by the maintenance of networks of social reciprocity and by establishing reputations that will make them attractive exchange partners (Alexander, 1987), with the result that the desire to be generous and humane, and to be *seen* to be generous and humane, is as human as competitiveness and no less functional. Moreover and more specifically, stepparents assume their pseudoparental obligations in the context of a web of reciprocities with the genetic parent, who is likely to recognize more or less explicitly that stepparental tolerance and investment constitute benefits bestowed upon the genetic parent and the child, entitling the stepparent to reciprocal considerations.

There is thus no great conundrum in the fact that people treat their stepchildren for the most part quite tolerantly, nor even in the existence of genuine stepparental investment in the child's welfare at cost to self. The interesting questions are whether the motives and emotions of stepparents *vis à vis* the children ordinarily (or indeed ever) become essentially like those of genetic parents, and, if not, how they differ.

An obvious hypothesis from a Darwinian view of parental motives is that stepparental feelings will indeed differ from those of genetic parents, at least quantitatively and perhaps qualitatively, too. Indulgence toward stepchildren may be a good way to promote domestic solidarity and tranquility, but the circumstances must always have been rare in which a stepchild's welfare was as valuable to the adult's expected fitness as an own child's welfare would be. We wouldn't necessarily expect to see a great deal of abuse of stepchildren, but we would not expect to see stepparents sacrificing as much for them as genetic parents either. Is there a large difference between genetic parents and stepparents in willingness to incur major costs (e.g. life-threatening risks) on the children's behalf? We expect that there is, but we know of no relevant study. There is, however, plenty of evidence that stepparents and stepchildren alike view their relationships as less loving and as a less dependable source of material and emotional support than genetic parent-offspring relationships (e.g. Duberman, 1975; Perkins and Kahan, 1979; Ferri, 1984; Santrock and Sitterle, 1987; Flinn, 1988).

The dominant framework in the social sciences for discussing stepparent relationships is "role theory". Parenthood is considered one "role" and stepparenthood another (e.g. Cherin, 1978; Kompara, 1980; Giles-Sims, 1984). The "theory" in "role theory" is surprisingly elusive for something so frequently invoked; Biddle's (1986) review unwittingly suggests that the work of role theorists is devoid of such ordinary signs of theoretical activity as efforts to use the theory to discover something previously unknown. But though the role concept does not really constitute a theory from which expected empirical consequences may be derived, its popularity is not without consequences: It is a metaphor that has directed attention to some issues and away from others. What the role metaphor directs attention to is requisite familiarity with cultural norms or "scripts": You have to know the role in order to act it out. What it directs attention away from is the motivational and emotional aspects of the parental psyche. There is more to the explanation of our choices of social action than mere familiarity with the options. Why do we embrace certain roles and shun others? Parents are profoundly concerned for their children's well-being and future prospects, but human concerns have no part in role theory's explanations of human action (see Biddle, 1986). Stepparents do not, on average, feel the same child-specific love and commitment as genetic parents, and do not reap the same emotional rewards from unreciprocated "parental" investment (Wilson and Daly, 1987). Enormous differentials in the risk of violence are just one particularly dramatic result of this predictable difference in feelings.

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PART 2: INFANTICIDE IN NONHUMAN PRIMATES