Articles

Evolutionary Social Psychology and Family Homicide

MARTIN DALY AND MARGO WILSON

Homicide is an extreme manifestation of interpersonal conflict with minimal reporting bias and can thus be used as a conflict "assay." Evolutionary models of social motives predict that genetic relationship will be associated with mitigation of conflict, and various analyses of homicide data support this prediction. Most "family" homicides are spousal homicides, fueled by male sexual proprietariness. In the case of parent-offspring conflict, an evolutionary model predicts variations in the risk of violence as a function of the ages, sexes, and other characteristics of protagonists, and these predictions are upheld in tests with data on infanticides, parricides, and filicides.

HOMICIDE WITHIN THE FAMILY IS A THEME OF GREAT psychological significance. In many mythologies, the primordial murder was a fratricide or patricide. Freud's "Oedipal theory" made the urge to kill one's father a normal element of the male psyche (*1*); Bloch (*2*) maintains that the "central preoccupation of childhood" is the fear of parental filicide. Moreover, these murderous impulses are apparently manifest not just in imagination, but in action. Two prominent experts on domestic violence in the United States have written (*3*, p. 88):

> With the exception of the police and the military, the family is perhaps the most violent social group, and the home the most violent social setting, in our society. A person is more likely to be hit or killed in his or her home by another family member than anywhere else or by anyone else.

These allegations present a puzzle from the perspective of contemporary evolutionary theories of social motives and behavior (*4–7*). The species-typical appetites, aversions, motives, emotions, and cognitive structures of all creatures, including *Homo sapiens*, have been shaped by selection to produce social action that is effectively "nepotistic": action that promotes the proliferation of the actor's genetic elements in future generations, by contributing to the survival and reproductive success of the actor's genetic relatives. Apprehensions of self-interest—such as the absence of pain and hunger, or the positive satisfactions derived from social and sexual successes and from the well-being of one's children—evolve as tokens of expected genetic posterity ("expected" in the statistical sense of that which would be anticipated from past evidence). It follows that individual self-interests conflict because of rivalry for representation in future gene pools (*8*). Genetic relatedness is a predictor of reduced conflict and enhanced cooperation because the genetic posterities of blood relatives co-vary (are promoted by common exigencies) in direct proportion to their degree of relatedness. The heuristic value and essential soundness of this theoretical framework have been abundantly confirmed by recent research on nonhuman animals (*6, 7, 9*), and there is a growing body of empirical studies indicating its applicability to human sociality, too (*9–13*).

What, then, of family violence? We propose (i) that genetic relationship is associated with the mitigation of conflict and violence in people, as in other creatures; and (ii) that evolutionary models predict and explain patterns of differential risk of family violence.

We shall focus on an extreme form of interpersonal violence: homicide. One may protest that homicides are too infrequent and extreme to illuminate conflict generally, but there is advantage in focusing on acts so dire. The issues over which people are prepared to kill are surely those about which they care most profoundly. Moreover, because homicide is viewed so seriously, there is less reporting bias in homicide archives than in the records of any lesser manifestation of conflict. Homicides thus provide an exceptionally valid "assay" of interpersonal conflict.

Genetic Relationship and Mitigation of Homicide Risk Within Families

Criminological studies of homicide in the United States (*14*) have generally used a limited categorization of victim-killer relationships. In a classic study of homicides in Philadelphia (*15*), for example, "relatives" constituted almost one-fourth of all victims, and most of these were spouses; blood relatives and in-laws were not distinguished, together constituting just 6.5% of solved cases. These results are apparently typical: "Relatives" have never been found to exceed one-third of any substantial sample of U.S. homicides, and, wherever spouses have been distinguished, they outnumber all other relatives combined. In two studies, genealogical and marital relatives were distinguished: 19% of Detroit homicide victims in 1972 were related to their killers by marriage compared to 6% by blood (*16*); 10% of Miami victims in 1980 were marital relatives of their killers compared to 1.8% blood relatives (*17*).

These data suggest that blood kin may be relatively immune from lethal violence in the United States (*18*), given the high frequency and intensity of interactions among relatives. However, in order to decide whether this is really so, one needs some sort of denominator representing "opportunity": the number and availability of potential victims in different categories of relationship to potential killers. One approach to this problem is to confine attention to cases involving members of the same household, so that the universe of accessible potential victims can be specified. Given the prevailing household compositions in Detroit in 1972, for example, coresidents unrelated to the killer by blood, whether spouses or not, were

M. Daly is a professor and M. Wilson is a research associate in the Department of Psychology, McMaster University, Hamilton, Ontario, Canada L8S 4K1.

Fig. 1. Age-specific rates of homicide victimization by (**A**) genetic parents (n = 341 victims) or (**B**) stepparents (n = 67), Canada, 1974 to 1983. [Adapted from (*11*) with permission © 1988, Aldine de Gruyter]

more than 11 times more likely to be slain than coresiding genetic relatives (*11, 16*). Comparable analyses have not been conducted in other U.S. cities (nor can they be with information in typical data sets, since coresidence has not ordinarily been recorded); however, the fact that the distribution of victim-killer relationships in Detroit was unexceptional suggests that similar results would obtain.

Another approach to the issue of whether kinship mitigates conflict when opportunity is controlled entails comparing the distribution of relationships between killers and their victims with the distribution of relationships between collaborators in homicide. The logic is this: If conflict and cooperation were to arise merely in proportion to the frequency and intensity of interactions, relatively intimate types of relationships would provide more opportunities for both. Those intimate links that are prevalent among victim-killer relationships should thus prove to be similarly prevalent among co-offenders. But such is not the case. Among coaccused pairs of killers in Miami, for example, 29.6% were blood relatives as compared to just 1.8% of victims and killers (*17*). In fact, the average degree of relatedness between collaborative killers is far higher than the corresponding value for victim and killer in every society for which a relevant sample of cases is available, including tribal horticulturalists, medieval Englishmen, Mayan villagers, and urban Americans (*11*).

Step-Relationships

A particularly apt comparison for assessing effects of (perceived) relationship on conflict is that between the parent-offspring relationship and surrogates thereof. Parental solicitude has evolved to expend animals' resources (and even their lives) in enhancing the reproductive prospects of their descendants (*19, 20*). It is therefore not surprising that parental solicitude evolves to be discriminative with respect to predictors of the offspring's probable contribution to the parent's genetic posterity (*21*). One implication is that substitute parents will often care less profoundly for "their" children than will genetic parents.

"Cruel stepparent" stories are cross-culturally ubiquitous (*22*) and reflect a recurring dilemma. Mothers and fathers have been widowed or abandoned with dependent children throughout human history, whereupon the fate of the children became problematic. A worldwide solution to the problem of single parents unable or unwilling to raise their children is fosterage to close relatives such as maternal grandparents (*23*). In some societies, widows are customarily married to their dead husbands' brothers (the levirate); in others, widows with dependent children may spurn remarriage and reside with siblings or other close relatives. In the absence of such arrangements, children come under the care of stepparents who may have no benevolent interest in their welfare. In a study of the foraging Ache Indians of Paraguay, for example, Hill and Kaplan (*24*) traced the careers of 67 children raised by mother and stepfather after the natural father's death: 43% had died, of various causes, before their 15th birthdays, as compared to just 19% of those raised by two surviving parents.

Children in stepparent families are disproportionately often injured in industrial nations, too. The specific kinds of injuries involved suggest that such children are not at risk merely by virtue of decreased parental vigilance and supervision, but are also more often assaulted (*25, 26*). When injuries are attributed to "child abuse," the difference between stepparent and genetic parent homes is large and is independent of risk attributable to low socioeconomic status, maternal youth, family size, or personality characteristics of the abusers (*27–29*). Abusive stepparents are discriminative, sparing their own children within the same household (*28, 30*). Presently available data do not reveal whether stepmother or stepfather households entail greater risks (*31*).

Overrepresentation of stepfamilies in child abuse samples might be dismissed as a product of reporting biases but for the fact that stepparents are even more strongly overrepresented in cases of child homicide, where biases of detection and reporting are presumably minimal. An English sample of "fatal battered baby cases" included 15 killed by stepfathers and 14 by genetic fathers (*32*), although fewer than 1% of same-age English babies dwelt with stepfathers (*25*). Similarly, an Australian sample of fatally battered babies included 18 slain by substitute fathers compared to 11 by genetic fathers (*33*). A child living with one or more substitute parents in the United States in 1976 was approximately 100 times more likely to be fatally abused than a same-age child living with genetic parents (*11*). Age-specific rates of being killed by step- or genetic parents in Canada are shown in Fig. 1.

In view of the costs of prolonged "parental" investment in nonrelatives, it may seem remarkable that step-relationships are ever peaceful, let alone genuinely affectionate. However, violent hostility is rarer than friendly relations even among nonrelatives; people thrive by the maintenance of networks of social reciprocity and by establishing reputations for fairness and generosity that will make them attractive exchange partners (*34*). The kindly deportment of most stepparents may prove to be explicable mainly in the context of reciprocity with the genetic parent; moreover, insofar as indulgence toward unrelated children is a general attribute of men (or other male animals), it may be attributable to sexual selection as a result of female mate choice (*35*). The fact remains, however, that step-relationships lack the deep commonality of interest of the natural parent-offspring relationship, and feelings of affection and commitment are correspondingly shallower (*29, 36*). Differential rates of violence are one result.

Spousal Conflicts

The customary extension of the category "relative" to encompass spouses and in-laws is metaphorical, but not arbitrary. By cooperative rearing of joint offspring, mates in a species with biparental care forge a powerful commonality of interest analogous to that existing between blood relatives (*37*). Indeed, the genetic interests of an exclusively monogamous pair coincide even more closely than those of blood relatives (*34*). However, two considerations act against the evolution of perfect harmony in mated pairs: (i) the possibility of extra-pair reproduction and (ii) the partners' nepotistic interests in the welfare of distinct sets of collateral kin.

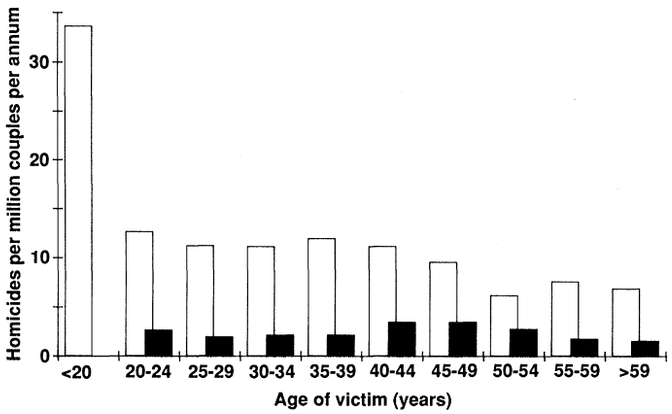

Fig. 2. Age-specific rates of homicide victimization within legal marriages for (open bar) women killed by their husbands (n = 528) and (solid bar) men killed by their wives (n = 124), Canada, 1974 to 1983 (*11*). Age-related variations in spousal homicide victimization are significant for wives ($\chi^2(9) = 44.2$, $P < 0.001$), but not for husbands ($\chi^2(9) = 10.6$, $P > 0.3$). [Adapted from (*11*) with permission © 1988, Aldine de Gruyter]

Mutual progeny contribute to spousal harmony, whereas children of former unions contribute to spousal conflict (*38*). U.S. divorce statistics reflect these effects of children: For a given duration of marriage, children of former unions elevate divorce rates, whereas children of the present union reduce them (*39*). We predict parallel influences of children on spousal homicide rates. There is some evidence that the presence of stepchildren is associated with spousal homicide (*11, 40, 41*), but available data do not permit quantitative assessment of the risks in households of various compositions.

In many animals (including people in their environments of evolutionary adaptation), female reproduction is resource-limited whereas the reproductive capacities of females are themselves the limiting "resource" for males. Male reproductive output in such species has a higher ceiling and greater variance than that of females, with the result that reproductive competition is more intense and dangerous among males (*5, 19, 42*). One tactic in such competition is sequestering and guarding mates, which increases in utility (relative to alternative tactics like maximizing copulatory contacts) in species with biparental care, since parentally investing males can be fooled about paternity.

Human marriage is a cross-culturally general institutionalization of reproductive alliance, entailing mutual obligations between the spouses during child-rearing, rights of sexual access (often but not necessarily exclusive and usually controlled by the husband), and legitimization of the status of progeny. Men take a proprietary view of women and their reproductive capacity, as witness the widespread practices of bridewealth (*43*) and claustration and infibulation of reproductively valuable women (*44*), and the near universality of sexually asymmetrical adultery laws that treat poaching by rival males as a property violation (*45, 46*).

Male sexual proprietariness is the dominant issue in marital violence. In studies of "motives" of spousal homicide, the leading identified substantive issue is invariably "jealousy" (*11*). Interview studies of North American spouse killers indicate that the husband's proprietary concern with his wife's fidelity or her intention to quit the marriage led him to initiate the violence in an overwhelming majority of cases, regardless of whether it was the husband or wife who ended up dead (*11, 41*). Similarly, in other cultures, wherever motives in a sample of spousal homicides have been characterized in detail, male sexual proprietariness has proven relevant to more than half of those homicides (*11*). Sexual proprietariness evidently lies behind most nonlethal wife beating, too (*46, 47*), suggesting that spousal homicides are not primarily cold-blooded "disposals," but are the tip of the iceberg of coercive violence. Men strive to control women by various means and with variable success, while women strive to resist coercion and maintain their choices. There is brinkmanship in any such contest, and homicides by spouses of either sex may be considered the slips in this dangerous game (*48*).

This view of spousal violence as the coercive tactic of proprietary men suggests that women will be extremely at risk when perceived as likely to end the relationship. Indeed, there is a remarkable prevalence of recently estranged wives among homicide victims. In an Australian study (*33*), 98 of 217 women slain by their husbands (45%) were separated or in the process thereof, compared to just 3 of 79 men slain by their wives (4%). Estrangement has also been implicated in spousal homicides in Canada (*11*). A correct apprehension of the lethal risk in deserting a proprietary husband is surely one factor in the reluctance of many abused wives to leave.

The above considerations suggest, moreover, that young wives may be especially at risk, for two reasons: Youth per se makes the woman more attractive to rival men (*49*), and the short duration of the marriage means that deep commonalities of interest have yet to be forged, making the marriage potentially unstable (*50*). In Canada, young wives are indeed likeliest to be spousal homicide victims (Fig. 2). One might attribute this differential risk to the fact that young women are married to young men, the most homicidal demographic category, but the woman's age is apparently more relevant to spousal homicide risk than the man's (*11*); the wife's declining risk as a function of age is apparent within each age class of husbands (although risk rises again for wives much older than their husbands). To date, no analysis has fully unconfounded the variables of the two parties' ages and marital and reproductive histories in order to assess their separate relevances to spousal homicide risk (*51*).

Parent-Offspring Conflict and Violence

Parents and children engage in frequent battles of wills, major and minor. Traditional social scientific views of these conflicts attribute them to imperfect adaptation in one or the other party, for example, "immature" egoism in the child or poor parenting skills.

Trivers (*52*) proposed a radically different perspective on parenting and socialization: Even though offspring are the parents' means to genetic posterity, parent-offspring conflict is an endemic feature of sexually reproducing organisms, because the allocation of resources and efforts that would maximize a parent's genetic posterity seldom matches that which would maximize a particular offspring's. Selection favors inclinations in both parties to achieve one's own optimum against the wishes and efforts of the other. This theory accounts for the seemingly maladaptive phenomenon of weaning conflict, as well as for disparate parental and offspring attitudes to collateral kin, "regression" to earlier stages of development on the birth of a sibling, and adolescent identity crises (*7, 21, 52, 53*). In some circumstances, an offspring's reproductive prospects (according to cues that were predictive in the species' environment of evolutionary adaptation) may be insufficient to offset that offspring's detrimental effect on the parent's capacity to pursue other adaptive action, in which case parental solicitude may be expected to fail (*54*).

People everywhere recognize that parents may sometimes be disinclined to raise a child, and anthropologists have collected much information about the circumstances in which infanticide is alleged to be common, acceptable, or even obligatory. If parental inclinations have been shaped by selection, there are at least three classes of circumstances in which we might anticipate some reluctance to invest in a newborn: (i) doubt that the offspring is the putative

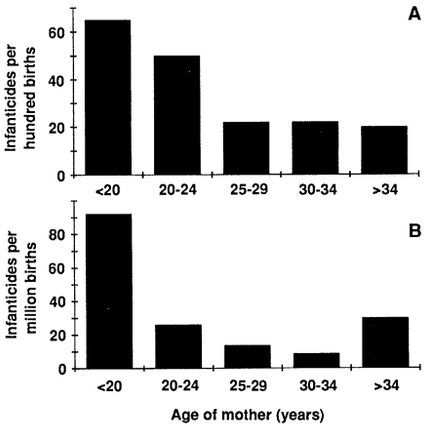

Fig. 3. Rates of infanticides by mothers as a function of maternal age, among (**A**) Ayoreo Indians of South America (*58*) (n = 54 victims), and (**B**) in Canada, 1974 to 1983 (*11*) (n = 87). [(A) is reprinted from (*58*) with permission © 1984, Aldine de Gruyter; (B) is adapted from (*11*) with permission © 1988, Aldine de Gruyter]

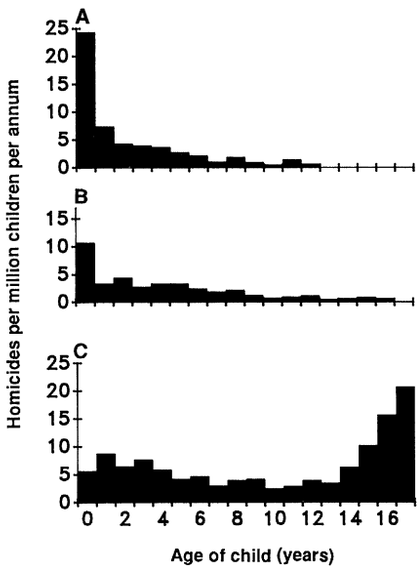

Fig. 4. Age-specific rates of homicide victimization among Canadian children, 1974 to 1983. (**A**) Slain by mothers (n = 198 victims), (**B**) by fathers (n = 154), and (**C**) by persons other than genealogical relatives (n = 493).

parent's own, (ii) indications of poor offspring quality, and (iii) all those extrinsic circumstances, such as food scarcity, lack of social support, and overburdening from the demands of older offspring, that would have made a child unlikely to survive during human evolutionary history (*55*). The great majority of ethnographic accounts of infanticide in nonindustrial societies reflect one or another of these three categories of strategic allocation of lifetime parental effort (*56, 57*).

Moreover, we may expect maternal psychology to exhibit sensitivity to the mother's own residual reproductive value: A newborn's compromising effects on the mother's future diminish with maternal age, and hence maternal willingness to jettison an infant may also be expected to decrease. This prediction is upheld (Fig. 3) (*58*). This maternal age effect is not an artifact of marital status; it is observed in both married and unmarried women (*11*).

Evolutionary considerations suggest several predictions about filicide in relation to the child's age, too. In ancestral environments, the child's probability of attaining adulthood and contributing to its own and its parents' genetic posterity increased with age, especially during infancy, as the child passed through a stage of high mortality risk. The predicted consequence is that parental psychology should have evolved to cherish the child increasingly over a prolonged period, as the child's reproductive value increased. Hence:

1) Parents are expected to be more willing to incur costs on behalf of offspring nearer to maturity (*59*) and to be more inhibited in the use of dangerous tactics when in conflict with such offspring. Filicide rates are thus predicted to decline with the child's age, whereas no such effect is predicted in the case of child homicides by nonrelatives, whose valuation of the child is not expected to parallel that of the parents.

2) This decline is predicted to be negatively accelerated and concentrated in the first year postpartum, because (i) in the environments of human evolutionary adaptation, the lion's share of the prepubertal increase in reproductive value occurred within the first year, and (ii) insofar as parental disinclination reflects a "strategic" assessment of the reproductive episode, an evolved assessment mechanism should be such as to terminate hopeless ventures as early as possible.

3) Filicides perpetrated by the mother are predicted to be a more steeply declining function of the child's age than those perpetrated by the father, because (i) women's reproductive life spans end before those of men, so the utility of alternative reproductive efforts declines more steeply for women than for men; (ii) the extent to which children impose greater opportunity costs on mothers than on fathers is probably maximal in infancy; and (iii) phenotypic and other evidence of paternity may surface after infancy and is expected to be relevant to paternal but not maternal solicitude (*45, 60*).

All three predictions gain support from the Canadian data in Fig. 4.

Offspring kill parents, too. Because violence toward parents, like violence toward children, is associated with economic and other stressors (*61*), and because parricides often follow a history of parental mistreatment of the eventual killer (*62*), one might expect factors related to the risk of filicide to affect the risk of parricide in a directionally similar fashion. An evolutionary theoretical perspective, however, suggests one likely exception to this generalization. Just as a parent's valuation of an offspring is predictably related to the ages (reproductive values) of both parties, so too is the offspring's valuation of the parent. An offspring of a given age may be expected to disvalue an elderly parent more than a younger one. These considerations suggest that parental age at the child's birth will have opposite effects on the rates of violence perpetrated by parent and offspring against each other, and the data in Fig. 5 are supportive.

An alternative to Trivers's (*7, 52*) evolutionary analysis of parent-offspring conflict is Freud's "Oedipal theory": It is allegedly a normal phase of infant male psychosocial development to lust after mother and wish father dead (*1*). [Freud (*63*) later developed a less detailed theory of an analogous girlish love of father and antipathy toward mother.] An evolutionary perspective suggests that Freud apprehended two distinct parent-offspring conflicts and conflated them. There is indeed a conflict between father and infant son over the wife-mother, but it is not sexual rivalry. The optimal birth interval from the child's perspective exceeds that from the father's, and it is not implausible that toddlers have evolved specific adaptive strategies to delay the conception of a sibling (*64*), including tactics to diminish mother's sexual interest and thwart father's access to her. In many societies, there is a later conflict between father and son over the timing of the son's accession to reproductive status, often subsidized by the father at a cost to his own continuing reproductive ambitions; this later conflict is "sexual," but it is not over the mother.

If Trivers's (*7, 52*) evolutionary model is correct, then conflict between parents and young children exists irrespective of the child's sex. According to Freud, children are in conflict primarily with the parent of the same sex, at least in the "Oedipal phase" (ages 2 to 5 years) (*65*) if not from birth; such a same-sex contingency in parent-offspring antagonisms is allegedly endemic to the human condition. Trivers's account predicts no such infantile same-sex contingency,

although elements of sexual rivalry could arise later. Canadian data on parent-offspring homicide cases support Trivers's view (Table 1), as do British and U.S. data (*66*).

Concluding Remarks

Analyses of "family violence" have hitherto ignored crucial distinctions among relationships. Elucidation of the nature of relationship-specific confluences and conflicts of interest requires a conception of the fundamental nature of self-interests. Evolutionary theory provides such a conception by considering perceived self-interests to be evolved tokens of expected genetic posterity. From this perspective, the spousal relationship is unique in its potential for generating shared interests and betrayals thereof, and the commonalities and conflicts of interest even among blood relatives are relationship-specific.

The application of such an evolutionary model to the study of violence (or other social behavior) is neither simple nor direct. In particular, an evolutionary model need not imply that the behavior in question effectively promotes the reproductive success of the actors or their relatives. Homicide is a rare, extreme product of motivational mechanisms whose outputs are only expected to be adaptive on average, and in environments not crucially different from those in which we evolved. Murder-suicides forcefully illustrate why adaptation is most usefully sought at a psychological level of abstraction rather than in each category of overt behavior. Men are far more likely than women to commit suicide after killing a spouse (*11, 33*) and are especially likely to do so when the couple are estranged. A frequently expressed rationale is "If I can't have her, no one can." In such a case, the killer has apparently fallen into futile spite, but the counterproductiveness of sexual proprietariness in these extreme cases hardly gainsays its candidate status as a masculine psychological adaptation. The more typical consequences of fierce proprietariness have surely been effective deterrence of rivals and coercive control of wives. Similarly, the proposition that discriminative parental affection has been favored by selection is not undermined by the consideration that fatal child abuse may land a stepfather in jail. Although specific acts may be maladaptive (especially in evolutionarily novel environments), selection has shaped the social motives, emotions, and cognitive processes underlying them. Evolutionary psychological constructs like "discriminative parental solicitude" or "male sexual proprietariness" are domain-specific, but they influence a range of actions both conflictual and cooperative. The evolutionary psychological hypotheses that we have tested against homicide data should be further assessed with less extreme behavioral measures of conflict and with positive measures of harmony and solicitude.

Evolutionary models have enabled us to predict and discover patterned variations in the risk of lethal violence, as a function of the parties' ages, circumstances, and specific relationships to one another. As predicted, genetic relationship is associated with a softening of conflict, and people's evident valuations of themselves and of others are systematically related to the parties' reproductive values. Evolutionary theory can provide a valuable conceptual framework for the analysis of social psychologies (*7, 11, 34, 49, 67*).

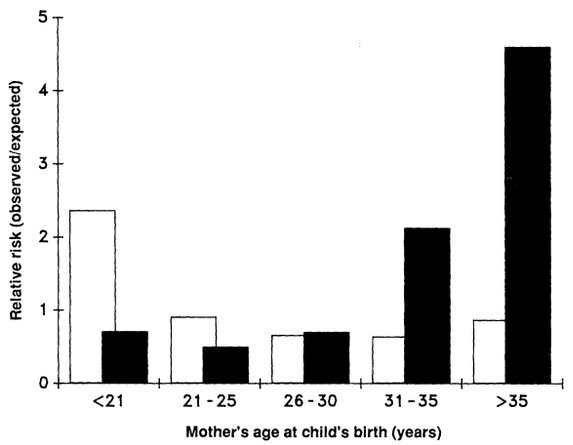

Fig. 5. Parent-child homicides perpetrated (open bar) by the mother (filicide, $n = 190$ victims) or (solid bar) upon her (matricide, $n = 61$), as a function of her age at the child's birth, Canada, 1974 to 1983. Relative risk is the ratio of the observed number of cases over the number expected if cases were distributed in proportion to the numbers of births to Canadian women in each age category in the calendar year of each filicide victim or matricide perpetrator's birth. Both distributions depart from number expected (filicides, $\chi^2(4) = 66.5$, $P < 0.001$; matricides, $\chi^2(4) = 56.9$, $P < 0.001$). No comparable analysis of paternal filicides and patricides is possible because of lack of information on age-specific fertility of men in the population-at-large.

Table 1. Parent-offspring homicides in Canada, 1974 to 1983, cross-tabulated by sex of killer and victim and by offspring age. Table entries are numbers of victims; 13 cases in which both parents were charged are excluded. All cases in which the child was 10 years old or less are filicides; "circumpubertal" cases include 31 filicides and 24 parricides; "adult" offspring cases include 26 filicides and 148 parricides. Only after puberty is there a same-sex contingency in parent-offspring violence; ns, not significant.

Offspring stage (age, in years)	Victim's sex	Killer's sex		Test of contingency
		Male	Female	
Infantile (0–1)	Male	24	53	$\chi^2(1) = 0.6$ ns
	Female	17	50	
	Percentage male	58.5	51.5	
"Oedipal" (2–5)	Male	21	21	$\chi^2(1) = 0.0$ ns
	Female	27	27	
	Percentage male	43.8	43.8	
"Latency" (6–10)	Male	21	19	$\chi^2(1) = 0.9$ ns
	Female	10	5	
	Percentage male	67.7	79.2	
Circumpubertal (11–16)	Male	28	9	$\chi^2(1) = 0.0$ ns
	Female	14	4	
	Percentage male	66.7	69.2	
Adult (≥17)	Male	104	8	$\chi^2(1) = 10.1$ $P < 0.01$
	Female	47	15	
	Percentage male	68.9	34.5	

REFERENCES AND NOTES

1. S. Freud, *The Interpretation of Dreams* (Basic Books, New York, 1900); *Totem and Taboo* (Norton, New York, 1913).
2. D. Bloch, *So the Witch Won't Eat Me: Fantasy and the Child's Fear of Infanticide* (Grove, New York, 1978).
3. R. J. Gelles and M. A. Straus, in *Crime and the Family*, A. J. Lincoln and M. A. Straus, Eds. (Thomas, Springfield, IL, 1985), pp. 88–110.
4. W. D. Hamilton, *J. Theor. Biol.* 7, 1 (1964).
5. G. C. Williams, *Adaptation and Natural Selection* (Princeton Univ. Press, Princeton, NJ, 1966).
6. E. O. Wilson, *Sociobiology* (Belknap, Cambridge, MA, 1975); J. F. Wittenberger, *Animal Social Behavior* (Duxbury, Boston, 1981); M. Daly and M. Wilson, *Sex, Evolution and Behavior* (Wadsworth, Belmont, CA, 1983); J. R. Krebs and N. B. Davies, Eds., *Behavioural Ecology* (Blackwell, Oxford, ed. 2, 1984); D. I. Rubenstein and R. W. Wrangham, Eds., *Ecological Aspects of Social Evolution* (Princeton Univ. Press, Princeton, NJ, 1986).
7. R. L. Trivers, *Social Evolution* (Benjamin/Cummings, Menlo Park, CA, 1985).
8. Notwithstanding the focus on individuals and their genetic nonidentity, theoretical work on social evolution and the research inspired thereby have been little concerned with genetically based phenotypic variation. Instead, researchers have been primarily concerned to identify adaptive, species-typical (or sex-typical), facultative social strategies.
9. R. D. Alexander and D. W. Tinkle, Eds., *Natural Selection and Social Behavior* (Chiron, New York, 1981).
10. N. A. Chagnon and W. Irons, Eds., *Evolutionary Biology and Human Social Behavior* (Duxbury, North Scituate, MA, 1979).

11. M. Daly and M. Wilson, *Homicide* (Aldine de Gruyter, Hawthorne, NY, 1988).
12. L. L. Betzig, M. Borgerhoff Mulder, P. W. Turke, Eds., *Human Reproductive Behaviour* (Cambridge Univ. Press, Cambridge, 1988).
13. C. Crawford, M. Smith, D. Krebs, Eds., *Sociobiology and Psychology* (Erlbaum, Hillsdale, NJ, 1987).
14. For example, see C. Loftin and R. N. Parker, *Criminology* **23**, 269 (1985); S. F. Messner and K. Tardiff, *ibid.*, p. 241; K. R. Williams and R. L. Flewelling, *ibid.* **25**, 543 (1987).
15. M. E. Wolfgang, *Patterns in Criminal Homicide* (Univ. of Pennsylvania Press, Philadelphia, 1958).
16. M. Daly and M. Wilson, *Am. Anthropol.* **84**, 372 (1982).
17. W. Wilbanks, *Murder in Miami* (University Press of America, Lanham, MD, 1984).
18. Elsewhere, blood relatives often constitute a larger proportion of homicide victims than in the United States. Fratricides constitute a significant component of the homicide rate, for example, in certain agricultural societies in which the family farm is not practicably partitionable, so that one's brother is one's principal rival (*11*). In general, rates of family homicides seem to be less variable between countries than rates of other killings (*11*), so that family homicides are proportionately significant wherever the overall homicide rate is low. Further assessment of the influence of (perceived) relatedness on rates of violence will require the development of new models incorporating the effects of social access, competition, and other social structural variables.
19. R. L. Trivers, in *Sexual Selection and the Descent of Man 1871–1971*, B. Campbell, Ed. (Aldine, Chicago, 1972), pp. 136–179.
20. In most dyadic relationships, reciprocity is carefully monitored and imbalances are resented as exploitative [L. Betzig, in (*12*), pp. 49–64; N. A. Berté, in (*12*), pp. 83–96; S. M. Essock-Vitale and M. T. McGuire, *Ethol. Sociobiol.* **6**, 155 (1985); H. Kaplan and K. Hill, *Curr. Anthropol.* **26**, 223 (1985)]. Parental altruism is different in that the flow of benefits is prolongedly, cumulatively, and ungrudgingly unbalanced.
21. M. Daly and M. Wilson, *Nebr. Symp. Motiv.* **35**, 91 (1988).
22. M. R. Cox, *Cinderella: 345 Variants* (The Folk-lore Society, London, 1892); S. Thompson, *Motif-Index of Folk Literature* (Indiana Univ. Press, Bloomington, 1955).
23. J. B. Silk, *Am. Anthropol.* **82**, 799 (1980).
24. K. Hill and H. Kaplan, in (*12*), pp. 291–305.
25. J. Wadsworth, I. Burnell, B. Taylor, N. Butler, *J. Epidemiol. Community Health* **37**, 100 (1983).
26. D. M. Fergusson, J. Fleming, D. P. O'Neill, *Child Abuse in New Zealand* (Government of New Zealand Printer, Wellington, 1972).
27. M. Wilson, M. Daly, S. Weghorst, *J. Biosoc. Sci.* **12**, 333 (1980).
28. M. Daly and M. Wilson, *Ethol. Sociobiol.* **6**, 197 (1985).
29. M. Wilson and M. Daly, in *Child Abuse and Neglect*, R. J. Gelles and J. B. Lancaster, Eds. (Aldine de Gruyter, Hawthorne, NY, 1987), pp. 215–232.
30. J. L. Lightcap, J. A. Kurland, R. L. Burgess, *Ethol. Sociobiol.* **3**, 61 (1982).
31. Neither do presently available data permit the assessment of risks to adoptees. We predict that such risks will be less than to stepchildren for several reasons: (i) adoption "by stranger" is primarily the recourse of childless couples, strongly motivated to simulate a natural family experience, whereas step-relationships arise incidentally to the establishment of a desired mateship; (ii) adoptive parents are equally unrelated to their wards and thus avoid the conflict of one party's "parental" efforts benefiting the other's children; (iii) couples wishing to adopt are screened for suitability and may return children who do not work out; and (iv) adoptive couples are much more affluent on average than either stepparent or genetic parent families.
32. P. D. Scott, *Med. Sci. Law* **13**, 197 (1973).
33. A. Wallace, *Homicide: The Social Reality* (New South Wales Bureau of Crime Statistics and Research, Sydney, 1986).
34. R. D. Alexander, *The Biology of Moral Systems* (Aldine de Gruyter, Hawthorne, NY, 1987).
35. R. C. Connor, *Anim. Behav.* **34**, 1562 (1986); B. B. Smuts, *Sex and Friendship in Baboons* (Aldine de Gruyter, Hawthorne, NY, 1986); Y. Yanagisawa and H. Ochi, *Anim. Behav.* **34**, 1769 (1986).
36. L. Duberman, *The Reconstituted Family* (Nelson-Hall, Chicago, 1975); M. V. Flinn, *Ethol. Sociobiol.* **9**, 335 (1988).
37. Marital extension of the concept of "family" opens the door to a variety of manipulative metaphorical usages of kinship terminology [N. A. Chagnon, in (*12*), pp. 23–48; N. W. Thornhill, thesis, University of New Mexico, Albuquerque (1987); G. R. Johnson, S. H. Ratwik, T. J. Sawyer, in *The Sociobiology of Ethnocentrism*, V. Reynolds, V. Falger, I. Vine, Eds. (Croom Helm, London, 1987), pp. 157–174.
38. L. Messinger, *J. Marriage Fam. Counseling* **2**, 193 (1976); A. M. Ambert, *J. Marriage Fam.* **48**, 795 (1986).
39. G. S. Becker, E. M. Landes, R. T. Michael, *J. Polit. Econ.* **85**, 1141 (1977); L. K. White and A. Booth, *Am. Sociol. Rev.* **50**, 689 (1985).
40. J. M. M. Binda, in *Crime and Punishment in the Caribbean*, R. Brana-Shute and G. Brana-Shute, Eds. (Center for Latin American Studies, Gainesville, FL, 1980); D. Kalmuss and J. A. Seltzer, *J. Marriage Fam.* **48**, 113 (1986); H. P. Lundsgaarde, *Murder in Space City* (Oxford Univ. Press, New York, 1977).
41. P. D. Chimbos, *Marital Violence* (R & E Research Associates, San Francisco, 1978).
42. A. J. Bateman, *Heredity* **2**, 349 (1948); R. Thornhill and N. W. Thornhill, *Ethol. Sociobiol.* **4**, 137 (1983); M. Wilson and M. Daly, *ibid.* **6**, 59 (1985). Although the focus of this article is family homicides, the majority of lethal violence occurs between unrelated men and involves competition for material, social, and sexual resources that were directly related to reproductive success in the environments of human evolution [(*11*); N. A. Chagnon, *Science* **239**, 985 (1988)].
43. J. L. Comaroff, Ed., *The Meaning of Marriage Payments* (Academic Press, London, 1980); M. Borgerhoff Mulder, in (*12*), pp. 65–82.
44. M. Dickemann, in (*9*), pp. 417–438; F. P. Hosken, *The Hosken Report: The Genital and Sexual Mutilation of Females* (Women's International Network News, Lexington, MA, 1979).
45. M. Wilson, *Univ. Toronto Fac. Law Rev.* **45**, 216 (1987).
46. M. Daly, M. Wilson, S. J. Weghorst, *Ethol. Sociobiol.* **3**, 11 (1982).
47. Anglo-American tort actions illustrate the proprietary rights of men over women's sexual and reproductive capacities [C. Backhouse, *Dalhousie Law J.* **10**, 45 (1986); M. B. W. Sinclair, *Law Inequality* **5**, 33 (1987); P. Brett, *Aust. Law J.* **29**, 321 (1955).
48. Legal traditions all over the world acknowledge that violent rages on the part of cuckolds are to be expected and excuse them to varying degrees (*11, 45*). The recognition that cuckolds are inclined to violence does not in itself explain why such violence should be deemed justified; the acknowledged temptations to theft, by contrast, are usually considered an argument for stiffer (deterrent) penalties. Legitimation of the cuckold's use of violence is analogous to the legitimation of self-defense and protection of property and reflects a social contract among those men who "own" women.
49. D. Symons, *The Evolution of Human Sexuality* (Oxford Univ. Press. Oxford, 1979).
50. Age-specific divorce rates are maximal at shortest marital duration [A. J. Norton and J. E. Moorman, *J. Marriage Fam.* **49**, 3 (1987)].
51. Homicide rates are 9 times higher in common-law unions than in legal marriages in Canada (*11*) and 13 times higher in Australia (*33*). The large number of common-law couples in U.S. spousal homicide samples [J. Bourdouris, *J. Marriage Fam.* **33**, 667 (1971); (*11, 15, 17*)] suggests that a similar situation prevails in the United States, but the U.S. census does not distinguish common-law marriages. Common-law unions may be especially risky for several reasons, including short duration, lack of commitment, children of other unions, and relative poverty. Research into their exceptional risk is needed.
52. R. L. Trivers, *Am. Zool.* **14**, 249 (1974).
53. M. O. Slavin, *Psychoanal. Contemp. Thought* **8**, 407 (1985).
54. Evolutionary considerations suggest that human maternal attachment is likely to entail three distinct processes with different time courses: an assessment in the immediate postpartum of the prospects for a successful rearing, followed by a discriminative attachment to the child, and a gradual deepening of love and commitment proceeding over several years [M. Daly and M. Wilson, in (*13*), pp. 293–309].
55. R. D. Alexander, *Darwinism and Human Affairs* (Univ. of Washington Press, Seattle, 1979).
56. M. Dickeman, *Annu. Rev. Ecol. Syst.* **6**, 107 (1975); L. Minturn and J. Stashak, *Behav. Sci. Res.* **17**, 70 (1982).
57. M. Daly and M. Wilson, in *Infanticide*, G. Hausfater and S. B. Hrdy, Eds. (Aldine de Gruyter, Hawthorne, NY, 1984), pp. 487–502.
58. P. Bugos and L. McCarthy, *ibid.*, pp. 503–520.
59. M. Andersson, C. G. Wiklund, H. Rundgren, *Anim. Behav.* **28**, 536 (1980); T. L. Patterson, L. Petrinovich, D. K. James, *Behav. Ecol. Sociobiol.* **7**, 227 (1980); P. H. Pressley, *Evolution* **35**, 282 (1981).
60. M. Daly and M. Wilson, *Ethol. Sociobiol.* **3**, 69 (1982).
61. K. A. Pillemer and R. S. Wolf, Eds., *Elder Abuse* (Auburn House, Dover, MA, 1986).
62. B. F. Corder, B. C. Ball, T. M. Haizlip, R. Rollins, R. Beaumont, *Am. J. Psychiatry* **133**, 957 (1976); D. H. Russell, *Int. J. Offender Ther. Comp. Criminol.* **28**, 177 (1984).
63. S. Freud, *Int. Z. Psychoanal.* **17**, 317 (1931).
64. N. G. Blurton Jones and E. da Costa, *Ethol. Sociobiol.* **8**, 135 (1987).
65. S. Freud, in *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, J. Strachey, Transl. and Ed. (Hogarth, London, 1922), vol. 18.
66. M. Daly and M. Wilson, *J. Pers.*, in press.
67. D. Symons, in (*13*), pp. 121–146; J. H. Barkow, *J. Anthropol. Res.* **40**, 367 (1984); L. Cosmides, thesis, Harvard University, Cambridge, MA (1985); J. Tooby and I. DeVore, in *The Evolution of Human Behavior: Primate Models*, W. G. Kinzey, Ed. (State Univ. of New York Press, Albany, 1987), pp. 183–237.
68. Supported by grants from the Harry Frank Guggenheim Foundation, Health and Welfare Canada, the Natural Sciences and Engineering Research Council of Canada, and the Social Sciences & Humanities Research Council of Canada. We thank M. W. Swanson, J. Bannon, and R. Hislop for access to Detroit homicide data, and J. Lacroix and C. McKie for access to Canadian homicide data. We also thank N. Chagnon, L. Cosmides, C. LaFramboise, P. Strahlendorf, D. Symons, N. Thornhill, R. Thornhill, and J. Tooby for critical comments on the manuscript.