AMERICAN JOURNAL OF HUMAN BIOLOGY 13:679–689 (2001)

Child Abuse and the Balance of Power in Parental Relationships: An Evolved Domain-Independent Mental Mechanism That Accounts for Behavioral Variation

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ABSTRACT Previous studies use zero-order analyses to show a link between child abuse and exposure to "stepfathers." These studies rest on a proposed evolved, domain-specific cognitive mechanism that induces adult males to abuse or kill offspring not their own and, so, contribute directly to reproductive success. However, child abuse may reflect an evolved neurological mechanism that creates behavioral plasticity and adaptability by assigning emotional weights (which in consciousness appear rationalized as costs and benefits) to choice alternatives in all behavioral domains. This mechanism should act as a selective mechanism to create enhanced ability to avoid predation (social exploitation) and to obtain access to resources, given the properties of specific ecosystems, and should control behavioral responses to variation in the balance of power in social relationships. Power equalities should elicit good treatment for both parties; power inequalities, by contrast, should elicit exploitative and coercive behavior on the part of those who hold the balance of power. This paper reports a test of both hypotheses simultaneously, controlling for a standard social science risk factor (growing up in poverty). Once we control for the balance of power in parental relationships, exposure to a stepfather and growing up in poverty show no effect on the intensity of child abuse. Powerful women negotiated affectionate behavior from their partners for both themselves and their children; powerless women's negotiations with partners usually left both themselves and their children open to violence. Am. J. Hum. Biol. 13:679–689, 2001.

This article reports a test of the hypothesis that child abuse is a function of the balance of parental power relationships. This hypothesis lies between, or at the intersection of, evolutionary psychology and behavioral ecology. Whereas evolutionary psychology's research agenda focuses on domain-specific, pan-human cognitive mechanisms which evolved in a remote past, human behavioral ecology's research agenda focuses on behavioral plasticity and adaptability in the contemporary world and takes for granted the evolved mental mechanism or mechanisms which make that plasticity possible (Smith, 2000; Smith, et al. 2000, 2001). The hypothesis tested here follows from a proposed domain-independent, pan-human neurological mechanism that should produce specific forms of behavioral plasticity which enhance an organism's ability to avoid predation (social exploitation) and to obtain access to resources, given the properties of specific ecosystems.

I focus this test on evolutionary psychologists' suggestion that an evolved cognitive mechanism may, in today's world, lead stepfathers to abuse or kill their stepchildren (Daly and Wilson, 1981, 1985, 1991; Burgess and Garbarino, 1983; Burgess and Draper, 1989). The stepfather hypothesis rests on the observation that, in many species, when adult males kill offspring not their own or offspring of low reproductive value, they induce reproductive access to the mothers of those offspring (e.g., Wilson, 1975, Hrdy, 1974) and thus contribute directly to their own reproductive success. The absence of evidence that this adaptive strategy contributes to the reproductive success of contemporary humans does not rule out the possibility that it may have conferred reproductive advantage to males earlier.

Intelligence generates a constant flow of novel cultural phenomena and thus constitutes one evolved, pan-human source of behavioral plasticity (Handwerker, 1989a). A

Contract grant sponsor: NSF; Contract grant numbers: BNS 8804719; BNS 8507604; BNS 8520445; Contract grant sponsor: Fulbright-Hayes Program; Contract grant number: American Republics Senior Scholar Research Grant.

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Received 18 December 2000; Revision received 26 February 2001; Accepted 17 March 2001

pan-human neurological mechanism that assigns emotional weights (which in consciousness appear rationalized as costs and benefits) to choice alternatives may constitute another source of behavioral plasticity (Handwerker, 1989b, 1998). Because it functions as a selective mechanism for choice alternatives, this mechanism should generate specific forms of conceptual and behavioral variation which enhance an organism's ability to avoid predation (social exploitation) and to obtain access to resources in specific behavioral ecosystems. Unlike the domain-specific cognitive functions on which evolutionary psychologists focus, the emotional function of this mechanism should bear on all behavioral domains.

The test reported here focuses on the control this mechanism may exert over behavioral responses to variation in the balance of power in social relationships. Because the effect enhances an organism's ability to avoid predation (social exploitation) and to obtain access to resources (Handwerker, 1987, 1989b, 1996, 1998), power equalities should elicit good treatment for both parties; power inequalities, by contrast, should elicit exploitative and coercive behavior on the part of those who hold the balance of power. We may see this in the unequal distribution of resources across dominance hierarchies and the propensity among humans for power to corrupt and absolute power to corrupt absolutely, to paraphrase Lord Acton. Previous evidence linking the stepfather hypothesis to child abuse relies solely on zero-order analyses. This paper reports a test of both hypotheses simultaneously, controlling for the standard social and behavioral science risk factor of poverty (Gelles 1987, 1989; Bersani and Chen, 1988).

The stepfather hypothesis does not imply that child and maternal abuse should co-occur. By contrast, if child abuse reflects an evolved mental mechanism which, in the presence of power inequalities, elicits exploitative and coercive behavior on the part of those who hold the balance of power, child abuse should not exist independently of other forms of family or intrahousehold violence. We should find that various forms of maternal and child abuse co-occur. We should find, further, that their co-occurrence creates an identifiable violent household cultural environment. Similarly, if this mechanism produces good treatment for both parties in the presence of power equalities, we should find that paternal affection and supportive behavior for women and their children should co-occur. We should find, further, that their co-occurrence creates an identifiable affectionate household cultural environment. Hence, after the Methods section, the body of this paper is divided into three parts. The first discusses evidence bearing on the sources of child abuse. The second discusses evidence bearing on the co-occurrence and origins of affection or violence directed at mothers and their children. The third discusses evidence bearing on the existence and origins of qualitatively different household cultural environments of violence and affection.

METHODS

Data come from the West Indian islands of Antigua and Barbados and consist of retrospective reports about the degree to which 430 informants experience abusive or supportive words and behavior from their adult male caregivers, and the degree to which these informants saw their mother experience abusive or supportive words and behavior from her partner. These data come from a long-term study of historical change in power, culture, and social relations in Antigua, Barbados, and St. Lucia. Study design focused on profound generational changes documented elsewhere (Handwerker, 1989b, 1991, 1992, 1993a,b) to examine patterns of gender inequality and family violence in two adjacent generations: (1) the current younger generation of men and women aged 20 through the early 40s who grew to maturity after major structural change in the Antiguan and Barbadian economies; and (2) the older generation of their parents who grew to maturity and lived most of their lives before major structural change.

Antigua lies in the Caribbean just south of Puerto Rico; Barbados lies in the Atlantic just north of Trinidad and east of St. Vincent. Both share much common history. English colonists settled in Barbados in 1625 and by 1640 created the first slave-run sugar cane plantation economy in the West Indies. English colonists, many from Barbados, settled in Antigua later in the 17th century and quickly established another slave-run sugar cane plantation economy. Today, the vast majority of Barbadians and Antiguans trace descent from African ancestors;

however, a minority (significantly larger on Barbados than Antigua) traces their primary line of descent from European ancestors (and Middle Eastern, in Antigua).

Between 1955 and 1965, the Barbadian economy experienced a fundamental structural discontinuity marked by decline in the importance of sugar and the ascendancy of manufacturing and tourism. Antigua experienced an equivalent structural change approximately 10 years later. By 1990, on both islands real wages had more than doubled, infant mortality fell from around 150 (70 in Antigua) in 1950 to around 15, and the average level of education rose from about 6 years to 12 (a completed secondary education). Fertility declined to below-replacement level by 1980 on Barbados and by 1988 on Antigua. Although sugar has disappeared from Antigua, it remains Barbados's primary export crop. Although Barbados has developed major manufacturing and tourism sectors, Antigua's manufacturing and tourism sectors remain only partially developed.

In 1990, Barbados's population totalled about 260,000, nearly half of whom lived in or just south of the capital, Bridgetown. In 1990, Antigua's population totalled about 80,000, about a third of whom lived in the capital, St. John's. Barbadian and Antiguan emigrants made up a significant proportion of the population flows to the United Kingdom, Canada, and the U.S.A. over the last 40 years. Both islands have experienced significant immigration, in Barbados from Guyana, Trinidad, St. Lucia, and St. Vincent, and in Antigua from Dominica and a more limited and specialized emigration from the Dominican Republic.

Both Barbados and Antigua exhibited what can be fairly characterized as a culture of violence prior to major structural change in the regional economies. As elsewhere in the West Indies (Rubenstein, 1976; Jones 1994), not only was battering a socially acceptable practice, men occasionally asserted droit de seigneur rights to daughters. More than half of the people interviewed reported that his or her mother experienced significant levels of emotional and physical violence. Approximately 1 in 4 experienced childhood emotional and physical violence. On Barbados, nearly 1 in 3 women experienced childhood sexual violence; on Antigua, this figure was approximately 1 in 10.

Antiguan data come from a sample of 97 women 20–42 years collected in 1989 to supplement with data on sexual behavior and childhood household environments an island-wide random sample of 428 women carried out in 1988. Although the 1989 sample of informants were selected through personal networks, analysis of differences between the 1989 and 1988 samples reveals only random variation (Handwerker, 1991). Barbadian data come from an island-wide random sample of 407 men and women 20–45 years carried out in 1990. On both islands, research assistants explained the nature of the research but respondents filled out anonymous questionnaires privately. They sealed completed questionnaires in unmarked envelopes. Research assistants carried with them bags that contained a minimum of 6 sealed envelopes identical to those given respondents. After they filled out the questionnaire, respondents mixed their sealed envelopes with those already in the bags. Completed interviews ranged from about 80% (Antigua) to nearly 90% (Barbados). This paper analyzes the 430 cases with no missing data on key variables (see Handwerker, 1998).

Women comprise 70.7% of this combined sample. Barbadian respondents comprise 85% of the sample. Women and men and Antiguans and Barbadians report child abuse intensities ($F_{2,422} = 1.778$, $P = 0.170$) and maternal abuse intensities ($F_{2,427} = 1.860$, $P = 0.157$) that differ only by chance. Abusive and supportive words and behavior were measured with short scales which have excellent construct validity (a single factor identified by high loadings on pertinent scale items) and reliability (Cronbach's $\alpha > 0.8$) in tests undertaken with populations in the West Indies and with populations in the American and Russian Arctic (Handwerker, 1997). These scales have also exhibited excellent predictive validity on diverse variables, including sexual behavior (Handwerker, 1993a) and depression (Handwerker, 1999). Neither set of scale items asked informants to evaluate interaction as "abusive" or "affectionate"; both sets of scale items asked informants to report the frequency with which they (or their mother) experienced specific forms of behavior. Abuse scale items included slap or hit you to hurt or punish, beat you (slap or hit you repeatedly), hurt you physically in any other way, and said things that made you feel bad about yourself. Support scale

items included hugged or touched you in loving ways, talked with you and respected what you said, encouraged you to do special things with your life, actively helped you do these things, and said things that made you feel special and important. Both variables load on a single factor and the child abuse measure used here consists of the factor scores. These range from –1.449 (childhood environments marked by high levels of support and little or no abusive treatment) to 4.249 (childhood environments marked by little or no support and extremely high levels of abusive treatment).

The term "stepfather" refers to any biologically unrelated adult male who had a visiting, consensual, or legal marriage relationship with a child's mother. The stepfather variable was coded "1" if a child had any exposure to a stepfather and "0" otherwise. By this definition, 13.3% of survey participants were exposed to a stepfather as children. The poverty variable was coded "1" if a child grew up in a home environment in which both mother and father (if present) had little or no education and worked for little money as field laborers, road gang workers, farmers, cooks, guards, hucksters, seamstresses, or maids. In Barbados, about 75% of the sample grew up in working class homes such as these, whereas 22% grew up in middle class homes with parents who had relatively high educational levels and good jobs that paid well. Just under 4% grew up in upper class homes. In Antigua, which had a much larger middle class than Barbados, 48% of the sample grew up in working class homes (9% came from upper or upper middle class homes). Of the total sample, 69% grew up in poverty, in working class homes.

A mother's power relative to men was measured as her ability or inability to bypass, counteract, or offset the power inequality generally conferred on men by size differences (see Handwerker and Crosbie, 1982). Resource access theory (Handwerker, 1989b) identifies power as emanating from the need of one person to access resources through another (a gatekeeper). Thus, resource access theory uses the word power in a Weberian sense and defines it as a structural relationship predicated on the material sources of energy and nutrients necessary for life—power does not come from control "of" resources but from a structural position in which one person controls "access to" specific resources for specific social actors. High power implies much freedom to choose among alternatives; low power implies little freedom to choose among alternatives. High levels of power thus generate high levels of variation.

Before structural change, gender relations were predicated on women's dependence on men and their children for access to resources. Resource structure was oligarchic before the 1960s. A small number of employers controlled the private sector, so they were not subject to significant levels of competition. Consistent employment and advancement opportunities, especially prestigious civil service or bank positions, were conditional on personal contacts and personal recommendations. These, in turn, were conditional on sex, class, and color, roughly in that order of importance. Women's job opportunities consisted almost solely of menial employment at wages much lower than men's. Some women became teachers, nurses, or clerks. Most worked as domestic servants, seamstresses, hucksters, road gang workers, or field laborers. In these sharply stratified and largely lower class societies, women constituted an underclass. Extensive emigration primarily by men during the 1950s and 1960s made women, ironically, a majority underclass.

As throughout the West Indies, sexual activity usually began early as women traded sex for economic support and children (called "visiting" or "keeper" relationships). Visiting unions might give way to common-law marriages which, when a couple is older, a church ceremony may legitimate. However, young people were not the only ones who had visiting relationships. The relative shortage of men meant that many women could not legally marry. Lower class men might never marry. Moreover, no relationship implied men's sexual fidelity. Lower class men commonly drifted from one temporary sexual partner to another. Married men in the middle and upper classes commonly engaged in a series of visiting relationships with "outside" women. West Indian fathers, consequently, often were not husbands and, even when they were, frequently did not live with the mother and her children. Even when they did, they might contribute little to domestic life. Men often were not home. They spent time instead with girlfriends or other men. What they contributed, other than a house and money,

all too often was violence directed at the mother and children.

Thus, Barbadian and Antiguan men historically were both gatekeepers and scarce. Women were resource seekers with little to exchange for material support other than their sexuality and childbearing capacities. Men exploited women's economic and social dependence to gain sex, children, domestic services, and unquestioned household authority. Women actively worked to escape the dependence on men they experienced during their youth by drilling into their children not only how much they sacrificed and how hard they worked to raise them properly, but also that their labors were that much worse because they had no companion to help them. It was easy to explain family hardships. Men were irresponsible and abusive. Understandably, grown children interpreted their obligations to help their parents as obligations to help their mother. Childbearing, which elicited flows of resources from men during a woman's youth, thus allowed her to escape subservience in middle and old age as flows of resources from children freed her from dependence on a partner. Sons actively protected their mothers, once they grew up. However, like their mothers' partners, who used violence to enforce women's subservience while mothers were young and sons were children, grown sons characteristically did likewise. Indeed, it was a man's prerogative to mete out physical or emotional abuse when his partner did not meet his wishes, as when

- the woman was not home when her partner arrived;
- dinner was not prepared on time, was prepared poorly, or was not food her partner liked;
- his clothes were not cleaned or ironed to his liking;
- a women questioned where a man was going or when he was returning or why he did not return home the night before;
- a man heard a rumor that his woman went around with another man;
- a woman talked with other men or spent too much time with one;
- he wanted sex and she did not.

Homicide cases often arose from the same circumstances, and still do.

Within this environment, Antiguan and Barbadian women could offset men's power with ties to family or friends who could provide a place to stay and money, well-paying employment together with the education to justify that employment, and by owning their own home. The women's power variable constructed from these items ranges from 0 to 6. Antiguan responses cannot be distinguished from Barbadian responses ($t = -1.655$, $P = 0.105$) and men's responses cannot be distinguished from women's responses ($t = 0.768$, $P = 0.443$). On average, mothers scored about midway along the power scale (mean = 2.988, SD = 1.684). However, 50% of the sample reported scores no higher than 2. If power inequalities elicit exploitative and coercive behaviors on the part of those who hold the balance of power, we expect to see increasing levels of violence directed at children and their mothers as power inequalities rise. Because power inequalities imply increasing freedom to choose among alternatives among those who hold the balance of power, we also expect to see increasing levels of violence accompanied by increasing variance (heteroskedasticity).

Child abuse

An earlier analysis of these data (Handwerker, 1998) revealed that powerful women negotiated good treatment for themselves from their partners. OLS regression findings reported in the top portion of Table 1 reveal that powerful women also negotiated good treatment for their children. Once we control for a mother's power we find no linkages between the intensity of child abuse and either exposure to a stepfather ($t = -0.343$, $P = 0.732$) or growing up in poverty ($t = 0.482$, $P = 0.630$). The intensity of child abuse is solely a function of the degree to which a child's mother was powerful relative to the men in her life ($t = -6.487$, $P < 0.000$). The maximum Condition Index of 6.893 reveals the absence of multicollinearity disturbances (Belsley et al., 1980).

The measure of women's power accounts for around 15% of the variance in the level of violence experienced by children. Some of the unexplained variance surely comes from random measurement error and unmeasured independent variables (e.g., childhood experiences of the parents, time lags between the effective acquisition of power by mothers, and how their partner acted toward them). However, one source of unexplained variance comes from the increasing

TABLE 1. Child abuse and family violence tests

Variable	Beta	*t*	*P* (2-tail)	R^2
Child Abuse Test				
Model for mother's power, stepfathers, and poverty[a,b]				
Degree to which M[3] has power	−0.206	−6.487	<0.000	
Exposure to a stepfather	−0.051	−0.343	0.732	
Growing up in poverty	0.055	0.482	0.630	0.145
Model for mother's power[c]				
Degree to which M has power	−0.210	−8.077	<0.000	0.145
Family Violence Test				
Model for mother's power, stepfathers, and poverty[a,b]				
Degree to which M has power	−0.271	−9.440	<0.000	
Exposure to stepfather	0.129	0.802	0.378	
Growing up in poverty	−0.008	−0.074	0.941	0.248
Model for mother's power[b]				
Degree to which M has power	−0.271	−11.666	<0.000	0.248

[a]Maximum Condition Index: 6.893.
[b]Tests based on heteroskedastic consistent standard errors.
[c]M = mother.

freedom of choice exercised by men who hold an increasing balance of power in their relationships with women. Among women with no power relative to men, the range of child abuse scores was 5.698 with a standard deviation of 1.212. On the other hand, among women with the maximum power relative to men, the range of child abuse scores was only 2.972 with a standard deviation of only 0.697. The statistical tests reported in Table 1 correct for this heteroskedasticity with heteroskedastic consistent standard errors (White, 1980, 1984). Another source of unexplained variance may come from having employed only a single measure of a multidimensional variable. Child abuse may merely constitute one component of a multidimensional variable called family or intrahousehold violence.

Co-occurrence of maternal and child abuse

Evidence that maternal and child abuse or affection co-occur consists of a finding that the combined measures of child and maternal violence and affection variables load on a single factor which accounts for 82.5% of the variance among these variables (see Bowker et al., 1988, for similar findings). The factor scores constitute a measure of Violence. Scores range from −1.634 (childhood and maternal environments marked by high levels of support and little or no abusive treatment) to 3.756 (childhood and maternal environments marked by little or no support and extremely high levels of abusive treatment).

OLS regression findings reported in the bottom portion of Table 1 reveal that powerful women generally negotiated good treatment for themselves and their children simultaneously. Once we control for a mother's power, we find no linkages between the intensity of household violence and either exposure to a stepfather ($t = 0.802$, $P = 0.378$) or growing up in poverty ($t = -0.074$, $P = 0.941$). The intensity of household violence is solely a function of the degree to which a child's mother was powerful relative to the men in her life ($t = -9.440$, $P < 0.000$). The maximum Condition Index of 6.893 reveals the absence of multicollinearity disturbances (Belsley et al., 1980).

The measure of women's power accounts for around 25% of the variance in the level of violence experienced by children and their mothers. Like the previous tests, some of the unexplained variance in the findings comes from random measurement error and unmeasured independent variables. Also like the previous tests, one source of unexplained variance comes from the increasing freedom of choice exercised by men who hold an increasing balance of power in their relationships with women. Whereas among women with no power relative to men, the range of family violence scores was 4.854 with a standard deviation of 1.031; among women with the maximum power relative to men, the range of family violence scores was only 3.308 with a standard deviation of only 0.677. The statistical tests reported in Table 1 correct for this heteroskedasticity with heteroskedastic consistent standard errors (White, 1980, 1984).

Household cultural environments of violence and affection

Evidence that the co-occurrence of maternal and child abuse or affection yields qualitatively different household cultural

environments comes from a principal components analysis of a 430 × 430 matrix of similarities among informant households (Handwerker, 2001). Similarities were measured solely by reference to different forms of violent and affectionate paternal interaction with informants and their mothers. A theory of culture as cognitive elements and structure now dominates ethnographic research (Dressler and Bindon, 2000). Despite the difference between cognition and behavior, especially the troublesome and ambiguous relationship between the two, there exist demonstrable patterns of behavior that correspond with specific cognitive domains. I define culture as a mental phenomenon (see Handwerker, 1997, 2001). But, following Tylor (1871), I recognize the existence of both mental and behavioral cultures although one might prefer to call the latter cultural environments.

Cultures or cultural environments, however, one cannot see. Cultures or the environments they constitute consist of configurations of cognition and emotion and an isomorphic configuration of behavior that form the intersection of configurations unique to individuals. A culture or cultural environment thus constitutes a multimensional variable, just like variables such as stress, affection, or problem drinking. To validate this construct, one must demonstrate that a specific set of people shares a specific configuration of cognition, emotion, and/or behavior (see Handwerker and Borgatti, 1998; Handwerker, 2001). As Campbell and Fiske (1959; see also Campbell, 1970) point out, items that measure the same theoretical construct should correlate highly. Items that measure a second construct should not correlate as highly with the items that measure the first. If there exists such a variable as problem drinking, or a violent household cultural environment, and if the items one selects measures that variable, it should be seen as a large intersection shared by the items, any one of which measures problem drinking or a violent household cultural environment imperfectly. A large shared variance among these items means that people who report high levels of maternal violence also report high levels of child abuse, and that people who report high levels of maternal affection also report high levels of affection to children. The construct validity of a cultural environment thus requires that what some informants tell us or do correlate highly with what other informants tell us or do. Informants who have constructed and participated in a different cultural environment will say things and/or act in ways that correlate highly among themselves, but what they say or do will not correlate as highly with the first set of informants. A standard construct validity analysis will yield evidence that cultural variation in a matrix of similarities among informants displays:

- random variation around a single cognitive, emotional, or behavioral pattern that characterizes the domain or some aspect of it, which may be weak or strong (a single culture or cultural environment); or
- significant subpopulation differences in the strength of the pattern (intracultural variation); or
- two or more qualitatively different sets of meanings and behavior, which may differ little or constitute polar opposites (multiple cultures or cultural environments); or
- no patterning in the data or some aspect of it (random data).

Evidence of a single valid culture or cultural environment consists of (1) a first factor with an intersection that accounts for 50% of the variance in the matrix (or more), (2) a sharp scree fall between the eigenvalue for the first and second factors (first factor approximately 3 or more times larger than the second), (3) the eigenvalue of the second factor lies at the top of the scree, (4) there exist no (or inconsequentially small) negative loadings on factor 1, and (5) there exist no (or inconsequentially small numbers of) high (±0.50) loadings on factor 2.

Figure 1 shows evidence of two household cultural environments, one characterized by violence and another characterized by affection. The scree plot (not shown) of the principal components solution yields two factors that lie above the scree. Figure 1 shows why two clusters of households with low loadings on factor 1 and high loadings on factor 2.

Figure 1 displays the size of households as proportional to the Violence variable described earlier. The 358 household environments which load highly only on factor 1 exhibit variation in the balance of affection and violence built into the factor scores which measure Violence. These clusters of households reveal intracultural variation within a cultural environment primarily marked by affection. The 72 household en-

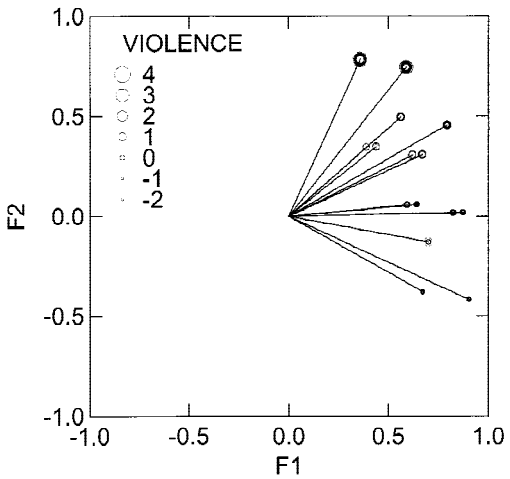

Fig. 1. Dimensions of similarity in father's mode of interaction with wife and child among informant households.

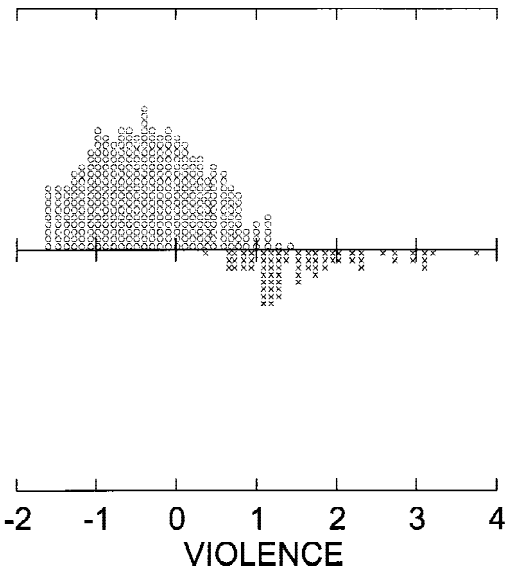

Fig. 2. Relative balance of violent and affectionate paternal interaction with wife and child make qualitatively different cultural environments.

vironments that exhibit the distinctive low loadings on factor 1 and high loadings on factor 2 also exhibit intracultural variation, but the size of the plotted symbols reveals that these clusters vary primarily in terms of different forms of household violence.

I disaggregated the full matrix into sets that corresponded with these distinctions. A principal components analysis of the 358 households which exhibited characteristics consistent with household environments marked by affection revealed that a single factor accounted for 67.6% of the matrix variance (eigenvalue of factor one 5.3 times larger than the eigenvalue of factor two), and an average factor loading of 0.809 (SD = 0.149; the average loading on factor 2 was 0.038, SD = 0.357). A principal components analysis of the 72 households that exhibited characteristics consistent with household environments marked by violence revealed that a single factor accounted for 89.4% of the matrix variance (eigenvalue of factor 1 being 8.4 times larger than the eigenvalue of factor 2), and an average factor loading of 0.944 (SD = 0.051; the average loading on factor 2 was –0.017, SD = 0.328).

The dot density plot in Figure 2 shows the distribution of the Violence variable for the two cultural environments validated by the previous analysis. Figure 2 makes clear that the balance of violent/abusive and affectionate/supportive behavior of fathers toward their wives/girlfriends and children varies considerably. The clear difference in their relative distribution, however, constitutes evidence of qualitatively different household cultural environments. The numerically dominant set of households exhibits a cultural environment marked by affection in which some women and children may experience some violence some of the time, but in which the affection and support they receive more than counterbalances the violence: Mean = –0.326 (SD = 0.683). The other constitutes a cultural environment of violence in which some women and children may experience some affection some of the time, but in which the violence they receive more than counterbalances the affection: Mean = 1.597 (SD = 0.758). A test of the Null Hypothesis that these means come from populations with identical averages yields a $t = -20.394$, $P < 0.000$.

Logistic regression findings reported in Table 2 reveal, like the OLS findings in Table 1, that powerful women negotiated a cultural environment of affection. A zero-order analysis reveals a plausible relationship between the household cultural environments and exposure to stepfathers: children were exposed to stepfathers in 24% of the households characterized by a violent cultural environment, whereas children

TABLE 2. Affectionate and violent cultural environments tests

Variable	Odds ratio	95% CI	*t*	*P* (2-tail)
Model for mother's power, stepfathers, and poverty[a]				
Degree to which M[b] has power	1.757	2.1–1.4	5.786	<0.000
Exposure to stepfather	0.551	1.1–0.3	−1.654	0.098
Growing up in poverty	1.195	2.5–0.6	0.468	0.640
Model for mother's power[c]				
Degree to which M has power	1.744	2.1–1.5	6.097	<0.000

[a]Deciles of risk diagnostic statistics: Hosmer–Lemeshow, $P = 0.693$; Pearson, $P = 0.342$; Deviance, $P = 1.000$.
[b]M = mother.
[c]Deciles of risk diagnostic statistics: Hosmer–Lemeshow, $P = 0.388$; Pearson, $P = 0.201$; Deviance, $P = 0.999$.

were exposed to stepfathers in only 11% of the households characterized by an affectionate cultural environment (Fisher's exact test, $P = 0.007$). A similar zero-order analysis shows a clear link between growing up in poverty and household cultural environment: 83% of the households characterized by a violent cultural environment were impoverished, whereas only 66% of the households characterized by an affectionate cultural environment were impoverished (Fisher's exact test, $P = 0.005$). Once a mother's power is controlled, however, there are no effects on household cultural environments produced by either exposure to a stepfather ($t = -1.654$, $P = 0.098$) or growing up in poverty ($t = 0.468$, $P = 0.640$). The diagnostic statistics reveal that observed values (1/0) correspond well with (except for chance, cannot be distinguished from) predicted values (in the range 1,0; see Hosmer and Lemeshow, 1989). Household cultural environment is solely a function of the degree to which a child's mother was powerful relative to the men in her life ($t = 1.545$, $P = 0.004$). The probability of growing up in a household environment marked by affection and support was only 58% for children whose mother scored at the bottom of the mother's power scale. The probability of growing up in a household environment marked by affection and support grew to 98% for children whose mother scored at the top of the mother's power scale.

DISCUSSION

These findings show that children tended to grow up in families that exhibit only one of two patterns of family behavior: affectionate and supportive or violent and abusive. Men who acted affectionately with their partners usually acted affectionately with their partner's children. Conversely, men who abused their partners usually abused their partner's children. Informants offered a "rotten man" hypothesis to explain the co-occurrence of child and maternal abuse. Despite the complexities of individual relationships and a wide range of observable behavior, ethnographic interviews revealed that women of all ages tended to recognize only two kinds of men. There were good ones and bad ones. The consensus was that you had to be lucky to find a good one. Women agreed that all too often men were deceitful, unfaithful, unreliable, and unhelpful. They could be brutal.

Findings presented, however, go beyond these surface relationships to reveal that the intensity of supportive or abusive childhood experiences reflected the ability of their mother to protect them. Stepfathers might abuse their stepchildren but only to the extent that the stepchildren had mothers who were powerless relative to men—and no more often that biological fathers in the same circumstances. Children who grew up in poverty might experience abuse but only to the extent that they had mothers who were powerless relative to men—and no more often than children in the same circumstances who grew up in middle or upper class homes. Powerful women negotiated affectionate behavior for both themselves and their children. In the process, they contributed in important ways to the construction of qualitatively different household cultural environments—one marked by violence, the other marked by affection.

These inferences rest on a quasi-experimental post-test only control group design which substitutes explicit measurement of confounds for randomization. Ostensibly, this design possesses very high power to detect real effects, if they exist. An R^2 effect size of at least 0.05 for each independent variable or confound plausibly constitutes the smallest effect that would be important to detect. Prior research suggests that it is reasonable to anticipate an effect of this

magnitude, and smaller effects would not likely be of clinical or substantive significance. An appropriate power analysis assumes Model 2 error, which means that variables entered into the regression subsequent to the set of interest will serve to reduce the error term in the significance test, and therefore they are included in the power analysis. With 430 cases, α set at 0.01 for a 2-tailed test, the study has a power of 0.99 to detect real effects of the mother's power variable and a power greater than 0.99 to detect real effects of the confounds (growing up in poverty and exposure to stepfathers).

However, we expect imperfect measurement of all variables, and the quasi-experimental design guarantees multicollinearity. Both conditions make it harder to detect real effects, even if they exist. Moreover, this study contains potential selection bias because it does not include data on children who died prior to age 20, possibly due to the behavior of stepfathers. Findings discussed here and in prior publications lead me to infer that effects not found in the current study are small, if they exist at all. But this study cannot rule out the possibility that growing up in poverty or exposure to stepfathers contribute to maternal and childhood violence, or the construction of violent and affectionate household cultural environments.

Nonetheless, the findings presented underline the two-person negotiation from which emerge both the sources and implications of supportive or abusive social interaction. "Violence" and "affection" thus may most usefully be thought of as an expression of particular kinds of social relationships that, from one generation to another, and in specific relationships formed in specific political–economic circumstances, generate specific meanings. The unit of analysis thus becomes specific individuals in specific social relationships, or, perhaps, the social relationships themselves.

The findings also underline the potential importance of an evolved neurological mechanism that creates behavioral plasticity and adaptability by assigning emotional weights (which in consciousness appear rationalized as costs and benefits) to choice alternatives in all behavioral domains. This mechanism should act as a selective mechanism to create enhanced ability to avoid predation (social exploitation) and to obtain access to resources, given the properties of specific ecosystems. The findings suggest that such a mechanism controls behavioral responses to variation in the balance of power in social relationships. An organism's ability to survive, reproduce, and raise young to adulthood must be a function of their ability to secure access to the resources that make those events possible. Power relationships dictate resource accessibility and reliability. We should not be surprised that our species possesses a mechanism that allows us to respond sensitively to variation in the balance of power in social relationships. Indeed, this mechanism plausibly evolved long before the appearance of our own evolutionary line. We should expect to see evidence for it in all animal species.

Although with regard to family or intrahousehold violence, the "rotten man" hypothesis has demonstrable merit (Handwerker, 1998), power inequalities appear to constitute a far more important issue. Power equalities appear to elicit good treatment for both parties in a relationship. Power inequalities, by contrast, appear to elicit exploitation and coercion of powerless parties by those who hold the balance of power, which may add to the number of rotten men in the next generation.

ACKNOWLEDGMENTS

I carried out the research reported here with the support of NSF Grants BNS 8804719, 8507604 and 8520445, and an American Republics Senior Scholar Research Grant from the Fulbright-Hayes program. I am most grateful. The opinions, findings, and conclusions expressed in this study are those of the author and do not necessarily reflect the view of either funding agency. AJHB referees helped me make this contribution far better than the original formulation. Richard Sosis provided an insight of immense worth.

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