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Childhood broken homes and adult violence: An analysis of moderators and mediators

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ABSTRACT

Purpose: Children who experience a family breakdown due to the separation or divorce of their parents may be at an increased risk of violent offending especially if they have experienced a disadvantaged upbringing that included low family income, marital disharmony, or parental criminality.
Methods: Using data from the Cambridge Study in Delinquent Development, we examine the effect of experiencing a broken home on subsequent violence. We further examine possible mediators and moderators of this effect.
Results: We find that self-reported violence and hyperactivity act as possible mediators on the effect of a broken home on later violent convictions. We also find evidence for moderation of this effect by harsh discipline, nervousness, low family income, and having a young mother.
Conclusions: We discuss the findings in the context of future research and possible policy recommendations.

Introduction

Traditionally, a common theme in many criminological theories is the important role of the family in socializing children (Hirschi, 1995; Farrington, 2010). When families do not socialize their children or when families break apart, the negative effects that may emerge will involve both the adults and the children, especially if there is continued conflict between them (Thornberry et al., 1999). This breakdown can be regarded as a process with problems that emerge years before an actual separation or divorce—often beginning with one or both partners disengaging emotionally from the relationship (Amato, 2000). This disengagement can also result in conflict over emotional matters and financial issues (Booth & Amato, 1991, 2001). From the parents' point of view, the breakdown may act as a trigger for increases in their own antisocial and offending behavior (Farrington & West, 1995; Horney et al., 1995; Theobald & Farrington, 2012). Conflict between the parents can also have deleterious effects on the children where they can experience inconsistent parenting, reduced affection and warmth, and reduced supervision—all of which have been found to be predictive of later delinquency (Farrington, 1992; Rebellon, 2002).[1]

This paper examines the effect of experiencing family breakdown due to separation/divorce (up to the age of 14) by the males in the Cambridge Study in Delinquent Development (CSDD) and the effect this life event has on their subsequent violent offending. Such an investigation is relevant to extant research because of the general lack of longitudinal investigations of long-term effects of broken homes on adult functioning—especially with respect to violent criminal behavior—and may help us to understand the mechanisms involved. Before we present the results of our investigation, we first briefly review prior research on the effect of family disruption on later delinquency and offending.

Effects of marital breakdown on children's offending

With increases in family instability over the last 40 years in the UK and other westernized nations, the effect of family disruption on children has become one of the primary areas of research in criminology and other disciplines such as developmental and family psychology (Amato, 2001; Wells & Rankin, 1991). This link between broken homes and delinquency has been established over several decades using data from some important longitudinal studies (Glueck & Glueck, 1950; West & Farrington, 1973; Fergusson et al., 1986; Kolvin et al., 1988; Mednick et al., 1990; Farrington, 1992; Coughlin & Vuchinich, 1996; Juby & Farrington, 2001). For example, in the Thousand Family birth cohort study of Newcastle boys, Kolvin et al. (1988) found that the percentage of boys who experienced family disruption up to the age of 5 years who were convicted up to age 32 was doubled (53%, compared with 28% of the remainder). Farrington (1992) found that disrupted families were as strong a predictor of delinquency as other major risk factors (e.g., hyperactivity, low family income, large family size, low school attainment, poor parental supervision and poor child rearing).

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More recent analyses of the Cambridge Study found that 60% of boys who were separated from a parent by their tenth birthday were convicted up to age 50, compared with 36% of the remainder (Farrington, Coid, & Murray, 2009; Farrington, Coid, & West, 2009). Juby and Farrington (2001) reported that delinquency rates were higher among the boys who had experienced a disrupted family before the age of 15 compared with those raised in an intact family, and the results were similar whether juvenile convictions, juvenile self-reported delinquency or adult convictions were studied. In a large meta-analysis, Wells and Rankin (1991) suggested that 10%–15% more of those children who experienced a broken home were prone to delinquency than those who came from intact homes. Importantly, these authors concluded that much of the research in this area, although extensive, is 'incomplete and disappointingly inconclusive' (Wells & Rankin, 1991, p. 71).

It may be that the stability of the family after divorce is an important factor. Mednick et al. (1990) found that divorce followed by changes in parent figures predicted the highest rate of offending by children (65%) compared with divorce followed by stability (42%) and no divorce (28%). It may be that the process of family breakdown is an important indicator of the outcome. Events surrounding the breakdown such as the reasons for the disruption, its timing, loss of the mother or father, as well as high conflict may be relevant (Wadsworth, 1979; Cernkovich & Giordano, 1987; Juby & Farrington, 2001). For example, in the UK National Survey of Health and Development, Wadsworth (1979) found that disruptions caused by parental disharmony were much more harmful than those caused by parental death. Boys from broken homes caused by separation or divorce had an increased likelihood of conviction or caution up to age 21 (27%) compared to those whose homes were disrupted by the death of the mother (19%), the death of the father (14%), or those from unbroken homes (14%). If the disruption occurred between birth and the age of 4 years it was especially predictive of later delinquency, whereas the effect was not particularly criminogenic if the break occurred in adolescence.

In the Cambridge Study, Juby and Farrington (2001) found that delinquency rates were as high in intact high conflict families as in disrupted families, a finding replicated in Switzerland by Haas et al. (2004). Nevertheless, because it is very difficult to determine whether exposure to inter-parental conflict has a direct effect on later perpetrated violence or whether the family environment is just a marker for a more direct causal factor, it is necessary to examine the pathway(s) between the family environment and later violent behavior using longitudinal data to assess the factors that predict subsequent offending. This is especially important because there has been much less research into the mediating factors may help explain the relationship between broken homes and adverse outcomes (Rebellon, 2002; Wells & Rankin, 1991), especially criminal offending in middle adulthood.

On this point, evidence suggests that single parents may have difficulty in maintaining a stable family environment in which good parent–child relationships are fostered. Reinforcement of good behavior may be lacking because of issues surrounding the family break-up such as high conflict, psychological problems, and economic insecurity (i.e., low pay). Working long hours by single mothers or fathers may have a deleterious effect on the supervision of the children, which may be the single most important mediator between family structure and delinquency (Rebellon, 2002).

Mechanisms

Several criminological perspectives have been proffered about the possible mechanisms through which disrupted homes may affect delinquency. Life-course theories, such as Sampson and Laub's (1993) age-graded informal social control theory and Moffitt's (1993) developmental taxonomy, focus on the damaging effect that a broken home may have on parental attachment which, in turn, may compromise effective parental socialization. Selection theories, such as Gottfredson and Hirschi's (1990) general theory, argue that disrupted families produce delinquent children because of pre-existing differences from other families such as in parental conflict, criminal or antisocial parents, low family income or poor child rearing methods. Stress/trauma-focused theories, such as Agnew's (1992) General Strain Theory, suggest that the breakdown of the family unit potentially leads to other stressors such as parental conflict, parental loss, and reduced economic circumstances, which produce a range of negative emotions which may then lead to antisocial behavior. Widom's (1989) cycle-of-violence theory suggests that there is a link between exposure to parental violence and victimization in early life and a child's subsequent antisocial behavior and delinquency.

Some researchers argue that disrupted homes inhibit attachment to significant others (Laub & Sampson, 1988; Rankin & Kern, 1994), as well as commitment to social norms and involvement in conventional activities (Hirschi, 1969). Others suggest that disrupted families are often riven by conflict, which has a direct effect on whether parents are able to set appropriate rules, provide proper supervision or sanction inappropriate behavior by children (Patterson, 1982; Holden & Richie, 1991). Laub and Sampson (2003) argued that informal social control has an important mediating effect on the association between broken homes and delinquency. If there is weak attachment between a parent and a child, it is probable that the parent has little interest in bringing up the child in an appropriate manner and, with little interest in their well-being, children may have little desire to please the parent. Interestingly, Laub and Sampson (2003) found that parental rejection was associated with delinquency even after controlling for parent–child attachment and parental supervision.

Most recently, biosocial and behavioral genetics research has emerged as a promising theoretical mechanism that examines the relationship between families and antisocial behavior. Two studies are worthy of note. First, Boutwell and Beaver (2010) examined the relationship between broken homes and the development of self-control (at around age 3) using data from the Fragile Families and Child Wellbeing Study, and tested whether social causation (i.e., the effect of a broken home on self-control may be environmentally mediated by factors that influence the development of self-control such as parental socialization) or self-selection (i.e., individuals select into certain environments and thus certain factors, such as parental antisocial propensity, might explain the broken home/self-control relationship) hypotheses better explained the association between broken homes and self-control (p.490). Their propensity-score based analysis showed that, while children raised in broken homes had lower self-control, after matching on relevant maternal as well as paternal measures, the relationship vanished. Thus, their findings showed that the association between broken homes and self-control may be attributable to the confounding effects of parental characteristics, thereby supporting a self-selection hypothesis (p.494).[2]

Second, Cleveland et al. (2000) used data from the National Longitudinal Survey of Youth to examine genetic and environmental influences on children's behavior problems, measured by the Behavior Problems Index, in various compositions of family structure. They found that respondents tended to self-select into different types of family structures (including broken homes), based on their individual genetic propensities and that these same predispositions that predicted family structure also predicted problem behaviors in the children. More generally, Cleveland et al. found that genetic influences accounted for a greater proportion of the mean-level differences in behavior problems across the various family structures, while shared environmental influences accounted for slightly less of the variance of the mean-level difference in behavior problems between the family structures.

Next, we review three of the strongest mechanisms identified in the literature: dysfunctional families, low self-control, and delinquent peers.[3]

Dysfunctional families

The family environment can exert a significant impact on an individual's behavioral and emotional developmental trajectory (Hastings & Hamberger, 1997; Fergusson & Horwood, 1998; Magdol et al., 1998; Steinberg et al., 1994; Repetti, Taylor, & Seeman, 2002). Fergusson and Horwood (1998) found that witnessing violent conflict between parents significantly predicted a child reporting violence and property offenses even after controlling for other familial risk factors such as parental substance abuse and criminality, having a young mother, physical punishment and low family income. The research literature within criminology and developmental psychology supports the idea that antisocial behaviors have their foundation within the family context (Farrington, 2010; Moffitt & Caspi, 2003) and can be attributed to factors such as the criminality of the parents, lack of supervision, harsh discipline, and high conflict between parents (see Patterson, DeBaryshe, & Ramsey, 1989). Parents who are involved in relationships where there is high conflict often have less time to deal with their children's needs, tend to be aggressive, and often pay little attention to the supervision of their children (Rothbaum & Weisz, 1994; Steinberg et al., 1994; Harold et al., 1997; Farrington, 1998; Farrington & Loeber, 1999). Poor parental supervision is a very important predictor of later delinquency (Smith & Stern, 1997; Rebellon, 2002; Farrington, Coid, & Murray, 2009; Farrington, Coid, & West, 2009). In the Cambridge Study, Farrington, Coid, and West (2009) found that 61 percent of boys who were poorly supervised at age 8 were convicted up to age 50, compared with 36 percent of those who were better supervised.

Behavior learned in families could be explained by social learning theory; how individuals learn to react to others will depend on the role models to which a person is exposed in childhood (Bandura, 1973). Others have suggested that the idea of frustration leading to aggression should be included as this would take into account a person's perception and interpretation of events and the subsequent responses of the individual (see Eron et al., 1987; Berkowitz, 1989). How individuals respond to and interpret environmental cues will be based to a large extent on what they have learned; however, as Eron (1994, p.9) later pointed out "… the developing child learns cognitions and information processing techniques that are adaptive to his or her environmental context".

Low-self control

Dysfunctional family environments account for some of the observed variance in the likelihood of antisocial behavior both directly and indirectly but genetic predispositions such as a difficult temperament may also play a part. Children who have difficult temperaments and behavioral problems are often aggressive and antisocial at home and at school, and are likely to continue to be aggressive into their teenage years and beyond. Farrington (1989) and others have suggested that aggressive tendencies can appear in behavior at different times and in different capacities over the life course and that childhood tendencies may have behavioral expression in later delinquency in adolescence and adulthood. Aggressive children can also exert a negative influence on their principal caretakers, so that parenting may become somewhat compromised in family environments with difficult and/or temperamental children (Moffitt, 1993).

Witnessing conflict or violence between parents or indeed being the victim of violence within the home has been found to have deleterious effects on children that permeate throughout the life course and across various domains (Widom, 1989, 2000) and may have an impact on children's capacities to regulate their emotions and their self-control. Low self-control has been suggested as one of the most stable traits associated with antisocial behavior. Gottfredson and Hirschi (1990) argued that persons low in self-control tended to be impulsive, desired immediate gratification, and engaged in risk-taking behaviors such as heavy gambling, drug and alcohol abuse, and fighting. Individuals with low self-control often coped with conflict aggressively and had difficulty in envisaging the consequences of their actions—behaviors which were not very conducive to a successful life (p.90).

Delinquent peers

When individuals experience a highly conflictual family environment, where rejecting parental relationships, poor communication, and physical or verbal abuse predominate, they are more likely to have hostile attribution biases and poor social problem-solving skills (Crick & Dodge, 1994). These experiences may adversely influence the ability of the child or adolescent to make friends with prosocial peers, as antisocial children are often unpopular (Dishion, Patterson, Stoolmiller, & Skinner, 1991; Vuchinich, Bank, & Patterson, 1992). Children who experience a parent's marital breakdown have a higher probability of moving out of the family home early than those from intact homes. The stress that is experienced can lead adolescents to become sexually active earlier and to form inappropriate relationships that lead to early marriage and/or childbirth and the cycle of broken homes (Armour & Haynie, 2007; Hill, Yeung, & Duncan, 1996; McLanahan & Bumpass, 1988).

Some researchers suggest that children who experience family conflict are more likely to associate with delinquent peers (Akers, 1998). They may be more susceptible to peer pressure because they desire some security in the group or they may decide, because of the conflict at home, to engage in deviant behaviors as a reaction to their unsettled home lives. Unpopularity and unsettled home lives may encourage these individuals to engage in deviant behaviors (e.g., substance abuse), and this is concordant with the suggestion that negative emotions are promoted by negative relationships, and delinquency subsequently acts as a coping mechanism (Agnew, 1992). The relationship between substance abuse and later delinquency may be mediated by the association with deviant peers (Ary et al., 1999). There may be sequential and cumulative effects of exposure to parental conflict in childhood, the association with deviant peer groups, subsequent delinquency, and violence.

Current focus

There has been a longstanding interest among social scientists in examining the adverse effects of broken homes. Although there is a large amount of research that investigates the broken homes➔delinquency relationship, several limitations have precluded insight into key processual and outcome-related questions. For example, many studies have not been longitudinal, and those that are longitudinal do not consider outcomes well into middle-adulthood in order to examine the potential long-term consequences of broken homes in childhood. Further, extant research has not examined whether the broken home effect extends to violent behavior. Accordingly, in this paper we examine data from the Cambridge Study in Delinquent Development (CSDD), a longitudinal study of the development of antisocial behavior among 411 South London males followed to age 50 (Farrington, Coid, & West, 2009), and assess several of the possible mechanisms that might influence whether a boy becomes a violent offender after experiencing his parents' marital breakdown in childhood or adolescence (up to the age of 14).

The key questions to be examined are: (1) Does experiencing a broken home due to a parent's marital breakdown predict a boy's violent conviction after controlling for other key factors that predict delinquency?; (2) Is the effect of a broken home on future violent criminal offending moderated by important childhood factors?; and, (3) Does a broken home due to a parent's marital breakdown have a direct effect or an indirect effect on later violent conviction?

Data & methods

The Cambridge Study in Delinquent Development is a prospective longitudinal survey of 411 males born in South London about 1953. These males have been followed for over 40 years (Farrington, 2003; Farrington et al., 2006; Farrington, Coid, & Murray, 2009; Piquero, Farrington, & Blumstein, 2003). The survey was originally carried out to investigate the development of delinquent and criminal behavior in males from an inner-city area. At age 48, 365 men were interviewed (93% of the 394 still alive). Repeated searches in the Criminal Record Office from 1964 until 1994 and from the Police National Computer thereafter were carried out to obtain information on the number of convictions of the men, their parents, and their siblings. This information included the age of onset and the frequency and duration of offending and dates of incarcerations (which were few). Excluding seven boys who emigrated before age 21 and were not searched in criminal records yielded a sample size of 404 at risk, of whom 41% were convicted of an offense between the ages of 10 and 50. There were 46 men who experienced their parent's marital breakdown up to the age of 14, but 2 were convicted before the family breakdown and so were not included in the analyses. By age 50, there were 146 crimes of violence carried out by 71 men; these convictions included acts of robbery, assault, threats, and offensive weapons.

With regard to the testing of the mechanisms potentially involved in the broken home → delinquency link, we have used proxy measures of dysfunctional families such as poor parental supervision, marital disharmony, and harsh parental discipline, all measured at age 8–10. As potential measures of low self-control, we use hyperactivity measured at age 8, psychomotor impulsivity measured at ages 8 and 10, and hyperactivity measured at ages 12 and 14. The measure of delinquent friends was based on the boy's self-report at age 14 (see Table 1).

The key childhood risk factors studied in this paper, which have been previously linked to criminal offending, have been reported elsewhere in depth (West & Farrington, 1973; Farrington, Coid, & West, 2009) and include those measured in school such as intelligence, attainment, personality, and psychomotor impulsivity. Interviews with the parents of the boy were carried out by psychiatric social workers who visited their homes from age 8 until he was aged 14–15 and was in his last year of compulsory education. The primary informant was the mother, although many fathers were also involved in the interviews. The boys' teachers completed questionnaires when the boys were aged about 8, 10, 12, and 14. Ratings were also obtained from the boys' peers about topics such as their popularity and daring disposition. Table 1 provides explanations of the variable used, how the variables were measured, and the data sources used. Also shown is information on the number of males in the sample who fell into the worst quarter on each of the variables and also the percent of those experiencing a broken home who also were 'at risk' (e.g., the percent of males experiencing a broken home who scored in the worst quarter of each of the respective variables).

Results

Does experiencing a broken home due to a parent's marital breakdown predict having a violent conviction when controlling for other key factors that predict delinquency?

Of the 44 men who experienced their parent's marital breakdown up to the age of 14, 14 (31.8%) had a violent conviction between the ages of 15 and 50. Of those who did not experience a broken home, 56 (15.6%) men had a violent conviction. There was a significant

Table 1
Descriptive Statistics

Factors	Description	N (%)	N (%) of Broken Home
Age 8–10			
Large family size	At least 4 siblings born to the boy's mother up to his tenth birthday	99(24.1)	8(18.2)
Parental criminality	Measured up to the boy's tenth birthday and referred only to biological parents	106(26.4)	10(23.3)
Poor parental supervision	Identified parents who had lax rules or poor vigilance	74(19.3)	6(14.0)
Low family income	Identified those families with low and inadequate incomes	93(22.6)	15(34.1)
Low non-verbal IQ	IQ score of 90 or less on Progressive Matrices test	103(25.1)	4(9.1)
Low school achievement	Combination of scores of arithmetic, English and verbal reasoning from schools	90(23.3)	12(31.6)
Low socio-economic status	Indicated that family breadwinner, usually father, had an unskilled manual job	79(19.2)	11(25.0)
Marital conflict	Chronic tension, many disagreements or raging conflicts reported by parents	89(23.9)	15(46.9)
Nervous disposition of boy	Based on assessment by social worker of, for example, fears, moodiness, tics, restlessness, sleep disturbance, enuresis, clinging	95(24.4)	10(22.7)
Harsh parental discipline	Rated by the social workers, identified parents who were cruel or harsh, commonly using physical punishment	116(29.7)	21(47.7)
Young mother	Identified mothers who were teenagers at their first birth	92(22.4)	15(34.1)
Hyperactivity	Hyperactive, restless in class, lacks concentration as reported by teacher	82(20.0)	10(23.3)
Psychomotor impulsivity	Combined score on Porteus Q, Spiral Maze test and Tapping test	104(25.3)	11(25.0)
Age 12–14			
Early sexual experience	Self-reported sexual intercourse before age 15	112(29.0)	17(40.5)
Low family income	Identified those families with low and inadequate incomes	79(22.5)	19(48.7)
Hostility to police	Reported by boys at age 14, based on a questionnaire	108(26.7)	16(36.4)
Delinquent friends	Self-reported at age 14	101(24.9)	17(38.6)
Self-reported violence	Self-reported at age 14	105(25.9)	17(38.6)
Nervous disposition of boy	Based on assessment by social worker of, for example, fears, moodiness, tics, restlessness, sleep disturbance	109(28.3)	16(37.2)
Teacher rated aggressive	Reported by teachers at ages 12 and 14	134(32.6)	21(47.7)
Hyperactivity	Restless in class or lacks concentration; based on questionnaires completed by teachers at ages 12 and 14	107(26.0)	19(43.2)
Unpopular	Rated by teachers at ages 12 and 14	68(16.6)	12(27.3)
Father involvement	Father who rarely joins in leisure activities with the boy	83(27.9)	5(21.7)
Bullying	Self-reported by boys at age 14	198(49.0)	19(43.2)
Harsh maternal attitude	Cruel, cold rejecting mother rated by social workers	111(28.9)	9(20.9)
Parental disharmony	Chronic tension, disagreements in many fields, raging conflicts or completely estranged	60(18.5)	5(26.3)
Low non-verbal IQ	IQ score of 90 or less on the Progressive Matrices test	117(29.0)	12(27.3)
Early school leaving	Boys who left school at age 15 (the minimum leaving age at the time)	161(39.6)	13(29.5)
Truancy	Based on questionnaires completed by teachers at ages 12 and 14	71(17.4)	6(13.6)

relationship between experiencing a broken home up to age 14 and gaining a violent conviction between the age of 15 and 50 (Odds Ratio or OR = 2.52, 95% Confidence Interval or CI = 1.26–5.05).

We then examined the effect of experiencing a broken home when controlling for other factors that predict delinquency. For this analysis, we used the most important factors measured at age 8–10 that have been found to predict delinquency (noted in Table 1): large family size, parental criminality, poor parental supervision, low non-verbal intelligence, low school achievement, and low socio-economic status (Lipsey & Derzon, 1998).[4] Lipsey and Derzon also included a measure of low self-control and since this is not directly measured in the CSDD, we utilize a measure of hyperactivity as described in Table 1. All risk factors were coded dichotomously into the 'worst' quarter compared with the remaining three quarters (Farrington & Loeber, 2000). This strategy was based on the fact that the prevalence of juvenile court appearances was about 25% of boys in working class areas in London at that time (see Power, 1965).[5]

A logistic regression was carried out to determine whether experiencing a broken home due to separation/divorce was predictive of having a later violent conviction when controlling for these factors. Experiencing a broken home significantly predicted having a violent conviction when controlling for all these factors, with the partial OR increasing from 2.52 to 3.36 (CI = 1.44–7.85). Table 2 shows that there were three important covariates: poor parental supervision (p = .030), low non-verbal IQ (p = .057), and hyperactivity (p = .095).

Is the effect of broken home on future violent criminal offending moderated by important childhood factors?

A moderator is a variable that affects the direction and/or strength of the relationship between a predictor variable and the outcome variable (Baron & Kenny, 1986, p.1174). It essentially specifies an interaction effect. These authors suggest three possible paths to the outcome under investigation, which for these analyses is violent conviction: (1) the proposed predictor, (2) the proposed moderator, and (3) the product of the predictor path and the moderator path. While there may also be significant main effects for both the predictor and moderator (Baron & Kenny, 1986, p.1174), if path (3) is significant then it suggests a moderator effect.

With regard to broken homes, we are interested in identifying what circumstances and for whom experiencing a family breakdown led to a violent conviction. We can test this moderator effect using Analysis of Variance (ANOVA), which tests the differential effect of the predictor variable on the outcome variable as a function of the moderator. We examine childhood factors measured at ages 8–10 because moderators of an effect should ideally be measured just prior to the measurement of the explanatory variable (Morse et al., 1994 p.663). As noted above, this moderation is indicated by an interaction effect. For these analyses, we examined factors measured at age 8–10 that have some theoretical (and previous empirical) basis for a possible moderating effect on experiencing a broken home, including: parental criminality, low family income, large family size, marital conflict, nervous disposition of the boy, and harsh parental discipline (see Farrington, 1998).

Table 3 shows that there were two significant interaction effects: (1) broken home*nervous disposition (p = .043) and (2) broken home* harsh discipline (p = .007). Two interactions were marginally significant, broken home*low income (p = .078) and broken home*young mother (p = .097). The interaction between broken home*marital disharmony was not significant (p = .125). Thus, the effect of broken home on incurring a violent conviction was moderated by having a nervous disposition or not, receiving harsh discipline or not, coming from a low income family or not, and having a young mother or not.

Fig. 1 shows the percentages of men with a violent conviction in each of four categories for each of the possible moderators. These categories are (1) no broken home, no risk, (2) no broken home, risk (3) broken home, no risk, and (4) broken home, risk. For nervous disposition there was a significant interaction effect and the percentage of men with a violent conviction in each of the 4 categories was 15.8%, 10.8%, 26.5%, and 50.0%, respectively, with the fourth category of 'broken home, risk' having the largest percentage of men with a violent conviction. Nervousness is generally negatively associated with delinquency.[6] Table 3 shows that there were only 10.8% men convicted of a violent offense who were nervous but not from a broken home, whereas when nervousness was combined with broken home the percentage of men with a violent conviction increased to 50.0%. Clearly, it is the combination of risk factors that is important.

With regard to harsh discipline, it can be seen that there is no effect of a broken home when there is no harsh discipline. For example, when there is no broken home and no harsh discipline the percentage of men with a violent conviction is almost exactly the same as for a broken home and no harsh discipline, 12.9% versus 13.0%. There appears to be an effect of harsh discipline only when a broken home is present, as the percentage of men with a violent conviction is then 52.4%. Perhaps good discipline acts as a protective factor against the risk factor of a broken home. With regard to low income, the findings suggest that a similar number of men are convicted if they have a father with a low income whether they are from a broken home or not (27.3% versus 26.7%); however, those boys from low income families were slightly less likely to be convicted of a violent offense if they had a broken home than those boys from higher income families (26.7% versus 34.5%). It may, therefore, be advantageous to be separated from a low income father (see Farrington, 1994). Finally, having a young mother and a broken home resulted in 46.7% of males having a violent conviction, between the ages of 15 and 50.

Does a broken home caused by parent's marital breakdown have a direct or an indirect effect on later violent conviction?

We decided to examine whether a broken home caused by parents' marital breakdown had a direct effect or an indirect effect on a male's later violent conviction (see Kenny, Kashy, & Bolger (1998) and Hayes (2009) for discussions on the exploration of indirect effects). We examined variables which were possible mediators of the effect. Here, we use factors measured at age 14 (see West & Farrington, 1973), which were measured after the men's experience of their parent's marital breakdown but before any violent convictions were gained. These 15 possible mediating factors measured at age 14 included: early sexual experience, father involved in family activities, low family income, bullying, harsh maternal attitude, parental disharmony, hostility to police, low non-verbal IQ, delinquent friends, early school leaving, self-reported violence, teacher rated aggressive, hyperactivity, popularity, and truancy.

Using the Baron and Kenny (1986) mediation framework, the following conditions are necessary to establish mediation using regression analyses: (1) A broken home should predict a violent conviction in the absence of the proposed mediator; (2) A broken home should predict the proposed mediator; (3) The mediator should predict a violent

Table 2
The effect of Broken Home → Violent Conviction controlling for factors predictive of delinquency

Factor	B	SE	Exp(B)	95% CI
Broken Home	1.21	.434	3.36**	1.44–7.85
Low School Achievement	.024	.384	1.02	0.48–2.17
Criminal Parent	.182	.358	1.20	0.60–2.42
Large Family Size	.542	.367	1.72	0.84–3.53
Poor Parental Supervision	.822	.379	2.28*	1.08–4.78
Low Non-verbal IQ	.700	.368	2.01†	0.98–4.14
Low Socio-economic Status	.088	.380	1.09	0.52–2.30
Hyperactivity	.634	.379	1.89†	0.90–3.97

*p<.05; **p<.01: †p<.10.
Note: Exp(B) = Partial Odds Ratio; CI = Confidence Interval.

Table 3
Possible moderators of the Broken Home→Violent Conviction Effect

Interaction	F	p		% Violent Men
Broken Home	9.06	.003	No Broken Home/No Young Mother	15.4
Young Mother	3.31	.070	No Broken Home/Young Mother	16.4
Broken Home*Young Mother	2.77	.097†	Broken Home/No Young Mother	24.1
			Broken Home/Young Mother	46.7
Broken Home	8.34	.004	No Broken Home/No Criminal Parent	12.4
Criminal Parent	5.85	.016	No Broken Home/Criminal Parent	24.0
Broken Home*Criminal Parent	.622	.431	Broken Home/No Criminal Parent	27.3
			Broken Home/Criminal Parent	50.0
Broken Home	2.80	.095	No Broken Home/No Low Income	12.5
Low Income	.299	.585	No Broken Home/Low Income	27.3
Broken Home*Low Income	3.13	.078†	Broken Home/No Low income	34.5
			Broken Home/Low Income	26.7
Broken Home	6.54	.011	No Broken Home/No Large Family Size	11.9
Large Family Size	6.01	.015	No Broken Home/Large Family Size	27.0
Broken Home *Large Family Size	.221	.639	Broken Home/No Large Family size	27.8
			Broken Home/Large Family Size	50.0
Broken Home	7.24	.007	No Broken Home/No Marital Disharmony	11.9
Marital Disharmony	.165	.685	No Broken Home/Marital Disharmony	25.4
Broken Home* Marital Disharmony	2.37	.125	Broken Home/No Marital Disharmony	41.2
			Broken Home/Marital Disharmony	33.3
Broken Home	12.63	<.001	No Broken Home/No Nervous Disposition	15.8
Nervous Disposition	1.75	.186	No Broken Home/Nervous Disposition	10.8
Broken Home*Nervous Disposition	4.13	.043*	Broken Home/No Nervous Disposition	26.5
			Broken Home/Nervous Disposition	50.0
Broken Home	7.51	.006	No Broken Home/No Harsh Discipline	12.9
Harsh Discipline	15.31	<.001	No Broken Home/Harsh Discipline	20.0
Broken Home*Harsh Discipline	7.38	.007**	Broken Home/No Harsh Discipline	13.0
			Broken Home/Harsh Discipline	52.4

*p<.05;**p<.01:†p<.10.

conviction after controlling for a broken home[7]; and (4) The effect of a broken home on a violent conviction decreases when controlling for the mediator(s). Of the 15 possible factors, only 9 complied with the Baron and Kenny framework: early sexual experience, low family income, hostility to police, delinquent friends, self-reported violence, nervous disposition, teacher-rated aggressive, hyperactivity, and unpopularity.

Table 4 shows the four steps suggested by Baron and Kenny (1986) with regard to the possible mediators of the effect of a broken home on later violent conviction. In Step 1, we found (as previously) that there was a relationship between a broken home and later violent conviction (OR = 2.52, CI = 1.26–5.05). In Step 2, we found that a broken home significantly predicted low family income, delinquent friends, self-reported violence, teacher rated aggressive, hyperactivity, and unpopularity. In Step 3, when controlling for a broken home, early sexual experience significantly predicted a violent conviction, as did hostility to police, delinquent friends, self-reported violence, teacher rated aggressive, hyperactivity and unpopularity. In Step 4, when controlling for all possible mediators independently, the effect of a broken home on a later violent conviction was reduced most by self-reported violence, early sex, teacher rated aggressive, and hyperactivity. However, only five factors satisfied the conditions set out by Baron and Kenny: delinquent friends, self-reported violence, teacher rated aggressive, hyperactivity, and unpopularity. When controlling for self-reported violence and hyperactivity, the broken home effect was reduced to insignificance, from OR = 2.52 to OR = 1.85.[8]

Discussion

The family has the primary role in socializing children to become productive and prosocial members of society. When families break down however, socialization may become compromised and adults may not only experience strife but there may be wide-ranging adverse effects on the children, including maladjustment and participation in antisocial and violent behavior (see Conger et al., 1992; Thornberry et al., 1999). Not surprisingly, there has been much theoretical and empirical attention devoted to examining how broken homes relate to delinquency, yet several features of previous studies have limited what has been (and could be) learned about the relationship in general, and about mediating and moderating processes in particular. The current study sought to extend this line of work by: (1) examining the longitudinal relationship between broken homes and violent criminal behavior into middle adulthood; (2) utilizing a survey where a vast number of potential moderating and mediating variables have been measured; and (3) focusing on several potentially important mediating and moderating relationships.

The key findings from this investigation of the broken home→violence relationship using data from males in the Cambridge Study in

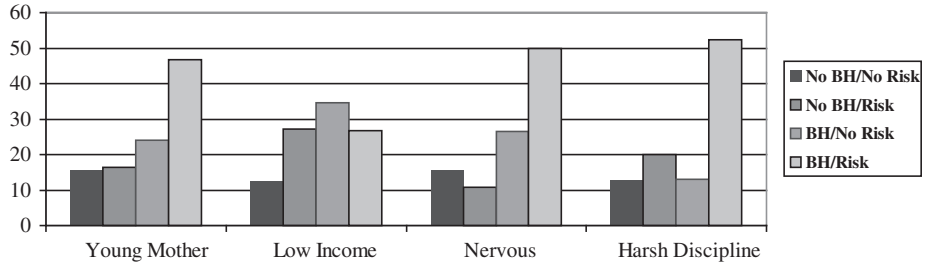

Fig. 1. Percentage of men with violent conviction versus possible moderators.

Table 4
Possible mediators of the Broken Home → Violent Conviction effect

Step	Risk Factor	B	SE	Exp(B)	95% CI
1	Broken Home(BH) → Violent Conviction	.923	.355	2.52**	1.26–5.05
2	BH → Early Sex	.570	.337	1.77	0.91–3.42
	BH → Low Income	1.376	.351	3.96***	1.99–7.88
	BH → Hostile to Police	.535	.336	1.71	0.88–3.30
	BH → Delinquent Friends	.755	.334	2.13*	1.11–4.09
	BH → S/R Violence	.677	.333	1.97*	1.02–3.78
	BH → Nervous Disposition	.454	.338	1.57	0.81–3.05
	BH → T/R Aggressive	.737	.323	2.09*	1.11–3.93
	BH → Hyperactivity	.902	.328	2.47**	1.30–4.69
	BH → Unpopular	.727	.368.	2.07*	1.01–4.26
3	Early Sex → Violent Conviction (cf. BH)	.916	.278	2.50**	1.02–4.40
	Low Income → Violent Conviction (cf. BH)	.040	.349	1.04	0.53–2.06
	Hostile to Police → Violent Conviction (cf. BH)	1.061	.277	2.89***	1.68–4.98
	Delinquent Friends → Violent Conviction (cf. BH)	1.154	.280	3.17***	1.83–5.49
	S/R Violence → Violent Conviction (cf. BH)	1.316	.278	3.73***	2.16–6.43
	T/R Aggressive → Violent Conviction (cf. BH)	1.300	.275	3.67***	2.14–6.29
	Nervous Disposition → Violent Conviction (cf. BH)	.033	.305	1.03	0.57–1.88
	Hyperactivity → Violent Conviction (cf. BH)	1.351	.278	3.86***	2.24–6.66
	Unpopular → Violent Conviction (cf. BH)	.894	.309	2.45**	1.34–4.48
4	BH → Violent Conviction (cf. Early Sex)	.749	.373	2.12*	1.02–4.40
	BH → Violent Conviction (cf. Low Income)	.935	.396	2.55*	1.17–5.54
	BH → Violent Conviction (cf. Hostile to Police)	.821	.365	2.27*	1.11–4.65
	BH → Violent Conviction (cf. Delinquent Friends)	.760	.368	2.14*	1.04–4.40
	BH → Violent Conviction (cf. S/RViolence)	.762	.372	2.14*	1.04–4.44
	BH → Violent Conviction (cf. T/R Aggressive)	.748	.371	2.11*	1.02–4.37
	BH → Violent Conviction (cf. Nervous Disposition)	.881	.366	2.41*	1.18–4.95
	BH → Violent Conviction (cf. Hyperactivity)	.699	.374	2.01†	0.97–4.19
	BH → Violent Conviction (cf. Unpopular)	.831	.362.	2.30*	1.13–4.67
	BH → Violent Conviction(cf. S/R violence, Hyperactivity)	.615	.382	1.85	0.88–3.91
	BH → Violent Conviction(cf. 9 variables)	.497	.461	1.64	0.67–4.06

*p.05, **p<.01, ***p<.001,†p<.10 cf = controlling for; S/R = self-reported; T/R = teacher rated; Exp(B) = Partial Odds Ratio; BH = Broken Home; CI = Confidence Interval.

Delinquent Development indicated that experiencing a broken home up to the age of 14 predicted a violent criminal conviction by age 50. The effect on a violent conviction was moderated by having a nervous disposition or not and receiving harsh discipline. The effect of a broken home on a later violent conviction was mediated by several variables, with the most important being self-reported violence and hyperactivity both measured at age 14. It may be that the stress associated with family breakdown leading to hyperactivity/restlessness and violent conviction(s) may be causal whereas the family breakdown leading to self-reported violence and violent conviction(s) may reflect a continuation of an underlying violent tendency. The main message from the totality of these findings is that the broken homes → offending relationship is more than just direct, and is more complicated than may have been theoretically presumed and empirically assessed given the limited longitudinal analyses and range of risk factors examined previously. The 'broken homes effect', then, is more nuanced and can lead to distinct outcomes in a myriad of ways that bring forth many important questions to be investigated.

Several limitations should be noted. First, the men in the Cambridge Study were born in the early 1950's and were from working class backgrounds and family breakdown was not very common. Thus, the analyses are hindered to some extent by the small number of boys who experienced a broken home caused by the marital breakdown of their parents. And while broken homes did comprise about 10% of the sample, there is a much smaller proportion of marital breakdown than is observed today. Thus, replication is needed to assess the generalizability of the study's findings to populations with higher percentages of broken homes, samples outside of the UK, and more recent samples. Second, it is also known that any problems arising from being in a single parent family may be further exacerbated by the lack of non-resident parent involvement (Kelly & Emery, 2003), the arrival of a step-parent (McLanahan & Sandefur, 1994), and the arrival of any half-siblings that may emerge from this union (Stewart, 2005). Unfortunately, while the CSDD contains a very wide range of variables—especially those believed to have been predictive of offending at the onset of the Study (early 1960s), the CSDD does not contain the rich set of measures that would be needed to explore these specific issues. Subsequent research should consider a wider range of theoretical variables, including biosocial/genetic factors that may be important mediators/moderators of the relationship between broken homes and crime (see Boutwell & Beaver, 2010).

Third, we did not have any measures of what the man felt (as a boy) when the family breakdown occurred. Those initial feelings may be helpful in understanding an individual's immediate reaction and any subsequent reactions and behaviors. Fourth, as most of the broken homes research has focused on the adverse consequences of breakdown, there may be some instances where the breakdown is actually a positive event. If one considers Agnew's (1992) General Strain Theory, then a removal of an adverse situation (or strainful event/experience) may actually lower offending. For example, we found that children from low income families were less likely to gain a conviction for violence if they separated from a parent (which was usually the father). Low family income may be associated with other deleterious factors such as, for example, a criminal parent and marital disharmony/conflict. Therefore, it is conceivable that experiencing a broken home may be beneficial for some children, although this needs further exploration.

Study findings also have implications for theoretical perspectives that may help to explain the link between broken homes and delinquency. Two in particular were highlighted at the outset of the paper: Sampson and Laub's age-graded informal social control theory and Agnew's General Strain Theory. Sampson and Laub's (1993) original theoretical model considered family disruption as a structural background factor that had an indirect effect on delinquency via problems with school and family attachment. Although our findings do not dispute the role of similar mediators, the results do show that broken homes may also generate other adverse outcomes that link to delinquency and further that some variables may moderate that relationship. Thus, age-graded informal social control should give additional consideration to some of the more nuanced relationships that underlie the broken homes → crime relationship. With respect to General Strain Theory, the findings provide some evidence that broken homes, a type of strain,

have both direct and indirect effects on offending, a result consistent with General Strain Theory. At the same time, additional evidence suggests that the relationship is also moderated by several variables and that the broken home effect is heightened in the presence of some risks, a finding consistent with Agnew's (2006) suggestion that researchers should consider the conditions under which strain may lead to more (or less) offending.

One additional theoretical point relevant to our research concerns the potential role that biosocial/genetic factors might play in the broken homes → crime relationship. There is evidence pointing to the role that biology and genes play in human behavior generally, and in antisocial behavior in particular (Rhee & Waldman, 2002; Rowe, 2002). Consideration of such factors is important in the broken homes → crime research area, especially considering the recent findings reviewed earlier that linked broken homes to the development of self-control (Boutwell & Beaver, 2010).

With respect to policy implications, it is well recognized that families ridden with conflict can have very negative effects on child outcomes, often with sequential effects of emotional disengagement from the home at an early age, difficulties with peer relationships, truancy, dropping out of school, and possible associations with delinquent friends. A premature exit from childhood/adolescence can lead to delinquency, early sexual experience and often early parenthood and the probable intergenerational transmission of marital disharmony and family breakdown. Obviously, we would suggest that it is very important to teach adolescents how to maintain good, supportive, stable relationships. This will be particularly helpful for those who have experienced a broken home combined with having other risk factors such as a young mother, a criminal parent, a large family, and harsh discipline. There may be a particular need to target those who are hyperactive and have experienced a broken home. We would also suggest increased access to family support and counseling agencies to help deal with the family stresses associated with marital conflict and separation. This would be particularly beneficial for families where either of the parents is incarcerated, when relationships are at increased risk of breakdown and where children often experience negative outcomes (Murray, Farrington, Sekol, & Olsen, 2009). But it is never too early to start such preventive efforts as several studies have shown that early family/parent training programs help not only the parents to better socialize their children but also help children in various life domains (Farrington & Welsh, 2007; Piquero et al., 2009).

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Notes

1. The observation that the family has a primary effect on socializing children is based on how traditional criminological theories have considered the role of the family and should not be construed as a comment on the non-importance of any other factors, including genetic factors—which have been found to lessen the importance of family factors on child outcomes (Harris, 1998), a point we return to throughout the manuscript.

2. Boutwell and Beaver did not have any direct measures of the parenting techniques that Gottfredson and Hirschi point out are critical for the development of self-control nor did they examine whether low self-control was, in turn, related to antisocial or criminal behavior.

3. It is important to note that genetic factors may be implicated in the mechanisms considered in the following section. Although data limitations preclude an empirical consideration of such effects, the larger point about the importance of genetic factors remains. We return to this in the discussion section.

4. An anonymous reviewer raised the question of multicollinearity among the study variables. We note that the largest correlation was between low non verbal IQ and low attainment ($r = .272$), and with regard to low socio-economic status the largest correlation occurred with large family size ($r = .231$).

5. An argument against dichotomization is the loss of information. In the CSDD most of the variables were originally measured in 3 or 4 categories so dichotomizing did not involve much loss of information. A benefit of dichotomization is that it allows measures of association such as the OR to be calculated. The OR is a useful way of measuring associations between explanatory and outcome variables and is an easily understood measure that simplifies the presentation of results (as percentages) to policy makers and lay persons (Farrington & Loeber, 2000, p.102). Also, dichotomization facilitates the study of interaction effects.

6. Several authors have found that while shy/nervous children generally have a low risk of delinquency, shyness combined with aggressiveness predicts a high risk (Farrington, Gallagher, Morley, St. Ledger, & West, 1988; Kellam, Brown, Hendricks, Barnett, & Ensminger, 1983; McCord, 1987).

7. If the mediator predicts a violent conviction, this would not be sufficient as they may both be caused by a broken home. Therefore, a broken home must be controlled in order to satisfactorily establish the effect of the mediator on having a violent conviction (see Baron & Kenny, 1986).

8. An anonymous reviewer observed that the drop in the original OR from 2.52 to 1.85 should not be construed as inconsequential because of sample size and issues of power. Such limitations preclude firm conclusions on this point and subsequent research should collect data sources that contain the requisite variables, sample size, and length of observed offending period in order to more carefully assess this question.

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