THE IMPACT OF INCOME AND FAMILY STRUCTURE ON DELINQUENCY

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<u>Introduction</u>

Over in the meadow by the old Scotch pine
Lives an old mother duck and her little ducklings nine.
"Paddle!" said the mother. "We paddle!" said the nine.
So they paddled all day by the old Scotch pine.[1]

[*In nature there is*] *continual fear, and danger of violent death; and the life of man, solitary, poor, nasty, brutish and short.*[2]

A society of Sperm Fathers is a society of 14-year-old girls with babies and 14-year-old boys with guns.[3]

Together, these three quotations suggest a critical hypothesis as to the effect of family structure on the behavior of boys and girls. The first quotation is a contemporary verse for children and frequently is applied to a large number of animal species. To the extent that it captures an essential truth about the animal kingdom, it is that family structures are largely composed of a mother and her children, while the biological father is nowhere to be seen. While there are surely exceptions to this rule, that characterization is a common one.

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[1]   Traditional children's verse. See Foreman, 1992.

[2]   Hobbes, 1962, p. 100.

[3]   Blankenhorn, Basic Books, 1995, p. 184.

The second quotation is of course from one of the great philosophical tracts of the English language, and provides a characterization of the state of nature. An important part of that state is the absence of fathers from their children, with mothers having the sole responsibility for rearing the young.

And finally, the third quotation is from a current book that details the consequences for American society of the large and increasing absence of many children from their fathers. To Blankenhorn, the Sperm Father is the ultimate state of absent fatherhood with only the biological factor remaining. The Sperm Father resembles the biological parent of the animal kingdom.

These quotations suggest that family structure, in particular the absence of fathers from the home, may have a substantial impact on the behavior of children. Our attention here is directed at criminal behavior, which is largely a male phenomenon. As Blankenhorn implies, female delinquency takes a different form and is not the subject of this paper.

There is another factor that is also emphasized as the primary explanation for delinquent behavior, which is poverty or low income levels.[4] Poverty, to many observers, is the source of anti-social behavior, so that if income

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[4]   See the following statement from a recent discussion of teenage violence: "Growing up in an environment of harsh poverty with a feeling that opportunities for success are closed because of discrimination can lead to helplessness and rage that find expressing in violence." Hechinger, 1994, p. 4.

levels were raised, and income distributed more evenly, this
conduct would dissipate. Because there are two rival themes
that are commonly used to explain delinquency, we explore
the joint impact of income and family structure.

A Conceptual Framework

Although economic agents are typically presumed to
consider only their own utility, that presumption has never
applied to actions related to family members.[5] In that
setting, altruistic concerns are commonly assumed in which
the actions of some family members affect the utility levels
of others. One result, Becker writes, is that a member's
"concern about the welfare of other [family] members provide
each...with some insurance against disasters."[6] For this
reason as well, familiar relationships are typically
characterized by overlapping utilities.

In regard to parents and children, however, Becker
suggests a pattern of asymmetric concerns in which the
parent's utility function includes the children's
consumption as well as his or her own, while the child's
utility function depends only on its own consumption.[7] This
structure leads to "the rotten-kid theorem," which offers
some interesting results. One is that if the parent is

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[5]   See Bergstrom's discussion of Adam Smith's views on these issues (1996, pp. 1904-5).

[6]   Becker, 1974, p. 1076.

[7]   Becker, 1981, p. 114.

sufficiently benevolent towards his or her child, not only is the child better off but so is the parent. As a result, altruism benefits not only the recipient but also the provider. To be sure, this conclusion follows only if the parent is sufficiently benevolent to the child. An important implication of the theorem is that *both* parent and child are better off when the parent is highly altruistic towards the child, but *both* parties are worse off when altruism is lower or absent.[8]

While this analysis is framed in terms of consumption levels and monetary transfers, it has broader implications than that. Individual and family objectives involve a larger set of concerns that reflect the entire gamut of activities pursued by family members. When a child agrees to sacrifice his private goals for those of his family, he does so in return for the broader scope of benevolence that follows from his parents' concern. When a child accepts the restrictions placed on his conduct by his parents, he does so with the understanding that ultimately he is better off. And the parents are willing to make the required effort because they too are better off.

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[8]   See also Bergstrom, 1989.

Furthermore, the analysis is equally cogent when families disintegrate. Becker writes that "altruism can benefit altruists only when there is substantial interaction between them and the beneficiaries."[9] When interactions between parent and child diminish, as a result, say, of divorce and the father's absence from the home, an anticipated result is that the parent's benevolence for the child declines from what it would be otherwise. If the decline is sufficient, the child will accept its implications and move to a more selfish outcome; and both parent and child are worse off. A direct implication of the rotten-kid theorem is that increased altruism encourages good behavior even on the part of a selfishly motivated child, while reduced or absent altruism encourages poor behavior. The child's conduct turns on the anticipated benevolence of the parent.

When a family dissolves, a direct effect is lost proximity between the non-custodial parent and the child. As a result, "the psychic returns from children" for that parent are greatly reduced; and even if they are not, both the time and monetary costs of maintaining close contact are

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[9]   Becker, 1977, p. 507. See also Becker, Landes and Michael, 1972, pp. 1152-3.

substantially increased.[10] In either case, there is reduced
concern by the absent parent for the child.[11]

Some Hypotheses on Parental Behavior

An essential feature of parental behavior is the desire
to influence the choices or actions of their children.
Parents believe that the child alone will not make the
"right" decisions, so they must step in for the "child's own
good." At its essence, parents believe that while the child
may maximize current utility, he or she will often not
understand the eventual implications for many of the choices
which are made, and parental intervention is therefore
needed. An important element of parental control is that it
leads to lower child utility when these actions are taken.

Consider an action d that a child can take and which
offers him positive utility. However, the parent believes
that the action will eventually have a negative impact on
the child so that it imposes negative utility for the
parent. The parent is concerned about the child's
prospective choice, and will endure lower utility if the
child takes the complained-about action. In this

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[10]   See Weiss and Willis, 1985, pp. 268-292. In a second paper, these authors find that because of
agency problems, "it costs the husband $5 to raise expenditures on his child by $1." Reduced
benevolence by an absent father follows directly. Weiss and Willis, 1993, p. 665.

[11]   A father's absence from the home typically leads him to have little contact with his child. Fully
58 percent of absent fathers saw their child fewer than several times a year, while only about one-
quarter had contact more than once a week. Furthermore, parent-child contact diminished over
time. While 28 percent of absent fathers, separated for two years or less, saw their child fewer
than several times a year, that percentage increased to 42 percent between three and five year
post-separation, to 62 percent for six to ten years following the father's separation, and to fully 72
percent at eleven years or more. Seltzer, 1991, Tables 1 and 4, pp. 86, 91.

formulation, d enters the child's utility function with a positive effect but the parent's utility function with a negative effect. Therefore, we can write

$$U_k(C_k,d) \qquad\qquad U'_k(d) > 0$$

$$\text{(1)}$$

$$U_p(C_p,C_k,d) \qquad\qquad U'_p(d) < 0$$

Note that here the parent is altruistic towards the child in that the child's consumption level enters positively in the parent's utility function; so that C_p and C_k are the consumption levels of the parent and child respectively. On the other hand, the parent's consumption level does not enter into the child's utility function.

If the parent is present and assumes his or her parental responsibilities, he or she can impose a cost on the child since the child's consumption level is set by the parents. In that case, they can reduce the child's consumption level whenever certain actions cross a predetermined threshold; whenever $d > d*$ where the threshold $d*$ is also set by the parent. In these circumstances, the child's consumption level C_k is reduced by an amount x to $(C_k - x)$. The value of x is determined by the parent and can be increased until it is no longer beneficial for the child to carry out the particular action. In other words, x can be increased until:

$$U_k(C_k-x,d>d^*) < U_k(C_k,d<d^*) \qquad\qquad (2)$$

In effect, the child is penalized by reducing his or her consumption level until it is no longer utility enhancing to engage in the prohibited activity. When the prior condition is met, the child sets d < d*; and the parent is also pleased because:

$$U_p(C_p,C_k,d<d^*) > U_p(C_p+x,C_k-x,d>d^*) \qquad\qquad (3)$$

To be sure, this process requires the active participation of the parent. Consider two alternative descriptions of parental behavior. First, let the parent be absent and have little concern for the child. In that case, the latter two arguments of the parental utility function from expression (1) are removed, and the child is free to maximize his or her own utility function free of parental control.

A second alternative is suggested by the visiting parent syndrome which arises when the parent sees the child infrequently and is thereby unwilling to bear the child's displeasure at facing reduced utility levels. In that case, disciplinary actions are not taken; and the child remains free to select levels of d which maximize his or her utility. While d remains positive in both these cases, the child's consumption level is higher in the latter alternative. And then, whether d is higher in the second

alternative than the first turns on whether d and c_k are substitutes or complements in the child's utility function. In either case, d < d* with parental control, but not without.

In the empirical analysis below, we examine the impact of family structure on the delinquent behavior of young boys. Where fathers are present in the home, we let there be sufficient benevolence so that boys follow family norms and do not respond to the temptations of lawlessness. On the other hand, where fathers are absent, we assume there is not sufficient altruism so that boys more frequently search for their own pleasures without regard to family strictures, and are then more likely to come into contact with law enforcement officials. Following Becker's suggestion that altruism declines with the lost proximity between altruist and beneficiary, we let family structure be a proxy for a parent's altruistic conduct toward his or her child. Although family structure may reflect other matters as well, we assume that the critical factor for altruistic behavior towards a child is continued contact.[12]

To be sure, other factors may be important as well. Among these additional factors is the level of family income. To the extent that family incomes are higher, boys

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[12] An alternate argument is that the critical factor is a boy's opportunity to copy or imitate his father which requires continued contact between the two; and that this is lost when the father is absent. This hypothesis suggests, however, that a substitute father would do nearly as well in limiting delinquent behavior, which is tested in the empirical analysis below.

may see less need for criminal activity to achieve their goals. The suggestion here is not that boys in higher income families are more likely to promote joint family objectives but rather that they will have less need to engage in criminal activity to attain their individual goals. As a result, higher family incomes should be associated with lower rates of criminal activity.

Finally, there is the question of age and the prospect that older boys will have more opportunity to run afoul of the criminal justice system. We anticipate that age will also have a positive impact on delinquency. In the analysis that follows, we test these propositions for a sample of nearly five thousand boys between the ages of fourteen and twenty-two.

Data

The data used in this study is the National Longitudinal Survey of Youth (NLSY) which is collected annually by the Center for Human Resource Research at Ohio State University. In 1979, 12,686 young people of both genders were surveyed on a wide range of topics that included family structure. And in 1980, these respondents were asked about their involvement with the criminal justice system for the period ending in 1979.

The survey questions introduced in 1980 asked the respondents to indicate their exposure to the criminal justice system by using three measures. The first measure

is whether or not the respondent had ever been stopped by the police (for other than minor traffic offenses) but not taken into custody or arrested. The second measure is whether or not the respondent had ever been booked or charged with breaking the law; and the third measure is whether or not the responded had ever been convicted. Of the 6,084 boys in the sample who responded, 28.5 percent had been stopped, 17.4 percent had been charged, and 10.1 percent had been convicted. Of those who had been stopped, the percentage charged was 36.3 percent; while of those who had been charged, the percentage convicted was 50.4 percent.

The youths were also asked with whom they were living at age fourteen. Among the boys who responded, 67.8 percent lived with their father and mother; the second most common category was mother and no other man present at 16.7 percent. The next largest category was mother and stepfather at 6.42 percent. Only 1.67 percent of the boys included in the sample lived with their father and stepmother, and only 1.31 percent lived with their father and no woman present. At the outset, we compress family structure into three categories insofar as a father's presence is concerned: (a) father present in the home; (b) another man, not the father, present in the home; and (c) no man present.

For comparison, we also investigate the importance of the mother present in the home when the male respondent was age fourteen. However, there was far less variability on

this account. Mothers were present in 92.3 percent of the
cases. To investigate this factor, we therefore consider
only two categories: (a) mother present in the household;
and (b) mother absent.

In terms of ethnicity, the sample is composed of 15.6
percent Hispanics, 25.2 percent Blacks, and 59.2 percent
non-Hispanic, non-Black youths. From an entire sample of
6,403 boys, data on income was available for 4,937 of them.
Average family income was $17,402 and ranged from nothing to
$75,001. The logarithm of family income was approximately
normally distributed in the range from -2 to +2 deviations
around the mean; however there was more weight in the tails,
especially for very low incomes.

As reported in Table I, there were 4,869 boys about
whom information was available on the three delinquency
measures, family income and family structure. As indicated
there, Black youths came from families with an average
income of approximately two-thirds of that for families of
non-Hispanic, non-Black youths. The percentage of families
with a father present when the boys were fourteen was 79.9
percent for non-Hispanic, non-Blacks; 71.9 percent for
Hispanics; and 54.7 percent for Blacks. The corresponding
figures for mother present were 93.6 percent for non-
Hispanic, non-Blacks; 93.7 percent for Hispanics; and 90.8
percent for Blacks. Clearly, there was greater variability
among all three ethnic groups for the presence of fathers
than for mothers.

TABLE I

Sample Characteristics for Three Ethnic Groups

	Hispanic	Black	Non-Hispanic, Non-Black
Ever Stopped (%)	27.7	28.4	27.8
Ever Charged (%)	18.1	14.3	18.1
Ever Convicted (%)	9.3	7.6	11.0
Ever Charged Given Ever Stopped (%)	38.7	29.3	37.4
Ever Convicted Given Ever Charged (%)	46.9	40.5	53.3
Average Age (Years)	17.7	17.7	18.0
Proportion Ages 20-22 (%)	25.9	25.9	33.4
Proportion Ages 19-22 (%)	38.7	37.7	47.0
Average Family Income ($)	15,591	13,412	19,510
Father Present (%)	71.9	54.7	79.8
Mother Present (%)	93.7	90.8	93.6
No. of Observations	719	1174	2976

Note that the fractions of male youths reporting ever being stopped are comparable for the three ethnic groups. However, a smaller fraction of Black youths report ever being charged and ever being convicted. Black youths also report lower conditional likelihoods for ever being charged given that they have been stopped and for ever being convicted given their being charged.

These last results raise concerns about the NLSY sample of Black youth since they have a much higher chance of being in prison by age 25 than others. According to more recent Department of Justice figures, the probability of this happening to a Black male is 15.9 percent, to an Hispanic male is 6.3 percent, and to a White male is 1.7 percent.[1] Because Black youths in jail or otherwise involved with the criminal justice system may be under-represented in this sample, we analyze delinquency separately for the three ethnic groups.

Furthermore, as reported below, our delinquency measures are closely linked to age. In particular, for older boys there are more years during which he may have done something wrong. Accordingly, age should be positively related to the three delinquency measures. Although the non-Hispanic, non-Black sub-sample has only a slightly higher age on average than the other two groups, it does have far higher proportions of boys aged twenty to twenty-

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[1]   Bonczar and Beck, 1997, Table 3, p. 2.

two and aged nineteen to twenty-two. The latter comparison
is particularly striking for it includes 47 percent of the
non-Hispanic, non-Black sample but only 37.7 percent of the
Black sample and 38.7 percent of the Hispanic sample.
Because of these sampling disparities, we expect to find
higher reported rates of delinquency among the non-Hispanic,
non-Black sample.

Do Fathers Make A Difference?

In Table II, we report the logit parameters which
estimate the impact of family structure on the three
measures of delinquent behavior, controlling for family
income, age, and ethnicity. We interpret the relevant
values as reflecting the probabilities of ever being
stopped, ever being charged, and ever being convicted, and
hypothesize that the impact of family structure is greater
for the more serious measures of delinquency.

Ever Stopped

As can be seen, the only significant variable in the
first equation reported in Table II is the father's presence
in the household when the boy was age fourteen. This
presence reduced the likelihood that the youth would be
stopped by police.

TABLE II

Logit Estimates for Three Measures of Delinquency

	Ever Stopped	Ever Charged	Ever Convicted
Intercept	-0.718** (2.64)	-2.062** (6.27)	-2.918** (7.00)
Age	0.00440 (0.32)	0.0801** (4.78)	0.0815** (3.87)
Family Income	-0.00000028 (0.12)	-0.0000144** (4.57)	-0.0000150** (3.75)
Father Present	-0.387** (3.75)	-0.781** (6.89)	-0.465** (3.21)
No Man Present	-0.073 (0.61)	-0.381** (2.84)	-0.232 (1.34)
Hispanic	-0.0293 (0.32)	-0.0499 (0.45)	-0.223 (1.56)
Black	-0.0493 (0.62)	-0.452** (4.48)	-0.533* (4.09)
No. of Observations	4869	4869	4868
Log Likelihood	-2871.4	-2172.5	-1545.6

t values in parentheses
** significant at the 1% level
* significant at the 5% level

Ever Charged

The second equation deals with the more serious incident of a boy being charged with a crime. Note that the explanatory variables in this case are more generally statistically significant. With this measure as well, the most important factor is the father's presence in the home; the impact here is the largest of all. Note also that family structure is grouped into three categories: father present; another man present who may be a male relative, a stepfather, or simply the mother's boyfriend; and also no man present. A variable indicating the third category is also included in this equation, and we can note that it also has a negative coefficient although smaller in magnitude than that measuring the effect of the father's presence. Apparently, a boy is *more* likely to be charged with a crime if there is some other man present in the house as compared with no man present,[2] although of course the father's presence has the largest salutary effect.

The coefficients reflecting the effects of age and family income have the expected signs. Older boys have an increased chance of being charged with a crime, and family income makes one less likely to be charged. The importance of these factors is described in Figure 1, which represents all three ethnic groups. It presents the estimated probabilities of being charged with a crime at the average

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[2]   This finding conflicts with the copying or imitation hypothesis suggested earlier.

Figure 1: Probability of Being Charged and Family Income
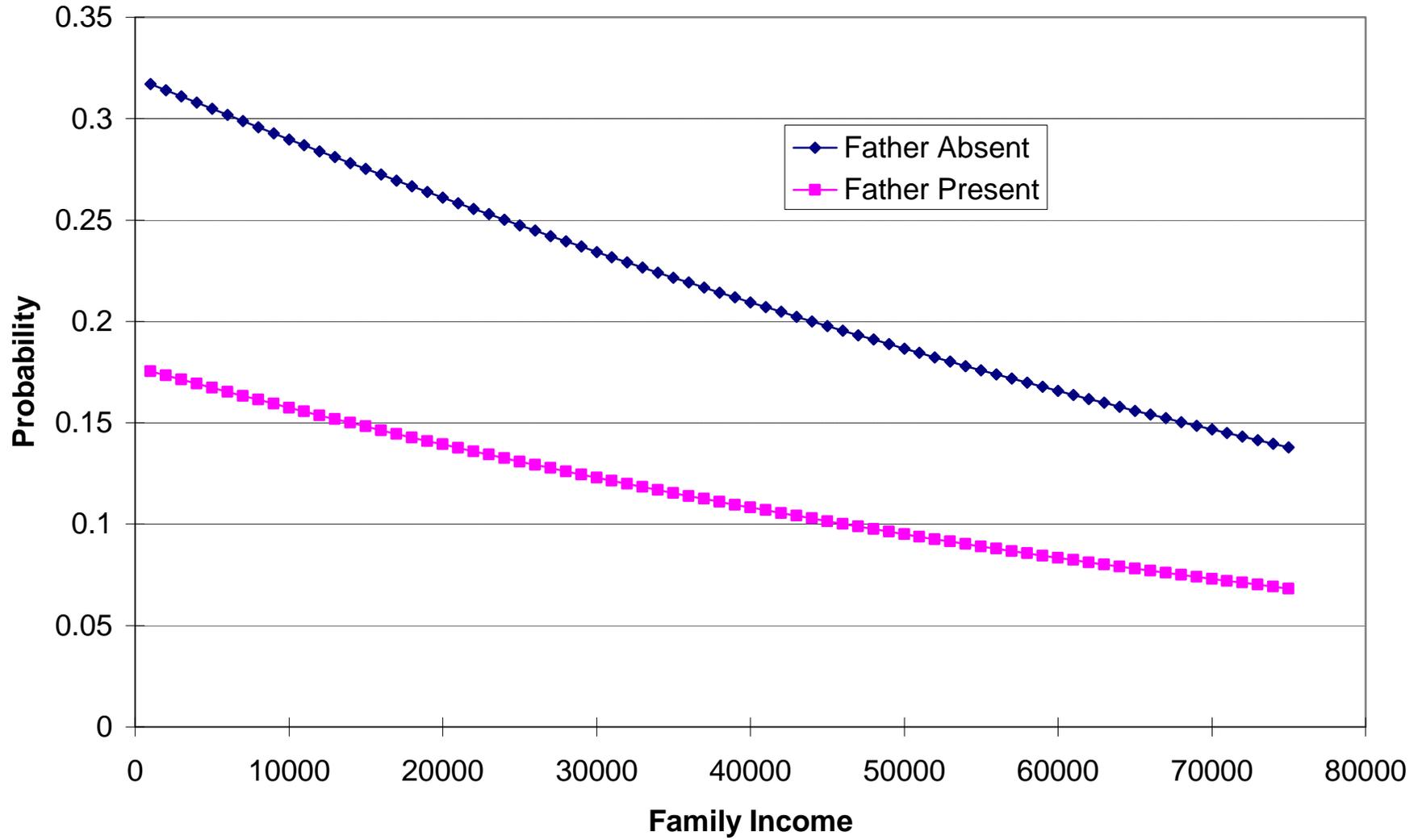
age of the sample and for the reported percentages of
Hispanics and Blacks in the sample. Only at an additional
family income of $54,286 does that factor counter the impact
of a father's absence from the home.[3]

Another conclusion from these results follows from the
total effect of a father's absence, including its impact on
family income. In the subsample of 3826 boys used in Table
IV below,[4] average family income for the 3004 boys with
fathers present is $19,793, while average family income for
the 822 boys with fathers absent is $13,102. A father's
absence is therefore associated with a lower family income
of about one-third.[5] Including both factors together raises
the predicted probability of being charged with a crime from
0.138 to 0.222, or by over 60 percent.

    Ever Convicted

The final measure of delinquency is the most serious
one for it concerns the conviction of a crime by the age of
twenty-two. Note that the estimated coefficients are
similar to those reported in the previous equation, although
here, the coefficient reflecting the role of no man present
in the household is not statistically significant at

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[3]   This value rests on the estimated coefficients from the second column in Table II, and has a
        standard deviation of $15,072.

[4]   We use this equation because the family structure variable there is limited to father present or
        absent.

[5]   From a larger and more inclusive sample, Hoffman and Duncan report that the average decline in
        family income following divorce is about 47 percent (1988, p. 643).

conventional levels. Only if we were willing to reject

hypotheses at a two-tail significance level of 0.18 would

this variable be statistically significant. Again the most

important factor is the father's presence in the household

when the boy was fourteen, and again age and family income

have the expected signs.

Ethnicity

Although the Hispanic ethnic variable has a negative

sign in all three equations, it is never statistically

significant. That is not so for the variable indicating

Black youths, where the coefficient is highly significant

for both of the latter measures of delinquency. However, as

reported in Table I, both minority ethnic groups were

apparently sampled differently from the larger non-Hispanic,

non-Black population. The two minority groups have much

lower proportions of older boys in the sample as compared

with the majority group, so in effect, the coefficients

reflecting ethnicity are confounded by the factor of age.

In effect, we are comparing younger Hispanic and Black

youths with older, non-Hispanic, non-Black youths. Although

we incorporate an age variable in these equations, that

factor changes the intercept of the resulting equation but

does not correct for different slope coefficients.

We explore the question of different slope coefficients

in terms of our second measure of delinquency, Ever Charged.

For two of the ethnic groups, Hispanics and non-Hispanic,

non-Blacks, separate coefficients were estimated for an equation containing intercept, age, family income, and father's presence. Constraining these coefficients to be the same for the two ethnic groups did not significantly reduce the likelihood function for this sample of 3,695 observations. Consequently, this group was labeled non-Blacks and estimated separately from the Black ethnic group.

The empirical results are reported in Table III. As reported there, we estimate a constrained equation where the effects of family income and family structure are presumed to be equal as well as an unconstrained equation. In these equations, family structure is represented by only two categories, indicating the presence or absence of the father from the home.

Note that constraining the coefficients for family income and family structure to be the same for Blacks and non-Blacks did not significantly reduce the likelihood function for this sample of 4,869 observations. However, the effect of the age variable on the probability of ever being charged is clearly larger for Blacks than for non-Blacks. This difference is illustrated in Figure 2 which rests on the estimated logit equation evaluated at the means for family income and family structure for each ethnic group. As indicated, the probabilities of ever being charged with criminal activity increase more rapidly for Blacks than for non-Blacks as the boy's age increases.

TABLE III

Logit Estimates for the Delinquency Measure of
## Ever Charged, Blacks and Non-Blacks

	Unconstrained	Constrained
Intercept, Black	-4.16**	-4.22**
	(6.04)	(6.14)
Age, Black	0.156**	0.161**
	(4.16)	(4.29)
Family Income	-0.0000199**	-0.0000145**
Blacks in Unconstrained eq.	(2.26)	(4.59)
Both groups in Constrained eq.		
Father Present	-0.366*	-0.561**
Blacks in Unconstrained eq.	(2.10)	(6.58)
Both groups in Constrained eq.		
Intercept, Non-Blacks	-1.95**	-1.95**
	(5.56)	(5.59)
Age, Non-Blacks	0.063**	0.062**
	(3.39)	(3.32)
Family Income, Non-Blacks	-0.0000136	
	(4.01)	
Father Present, Non-Blacks	0.619**	
	(6.37)	
No. of Observations	4869	4869
Log Likelihood	-2172.92	-2173.80

t values in parentheses
** significant at the 1% level
* significant at the 5% level

Figure 2: Probability of Ever Being Charged, at Means for Family Income and Father Present
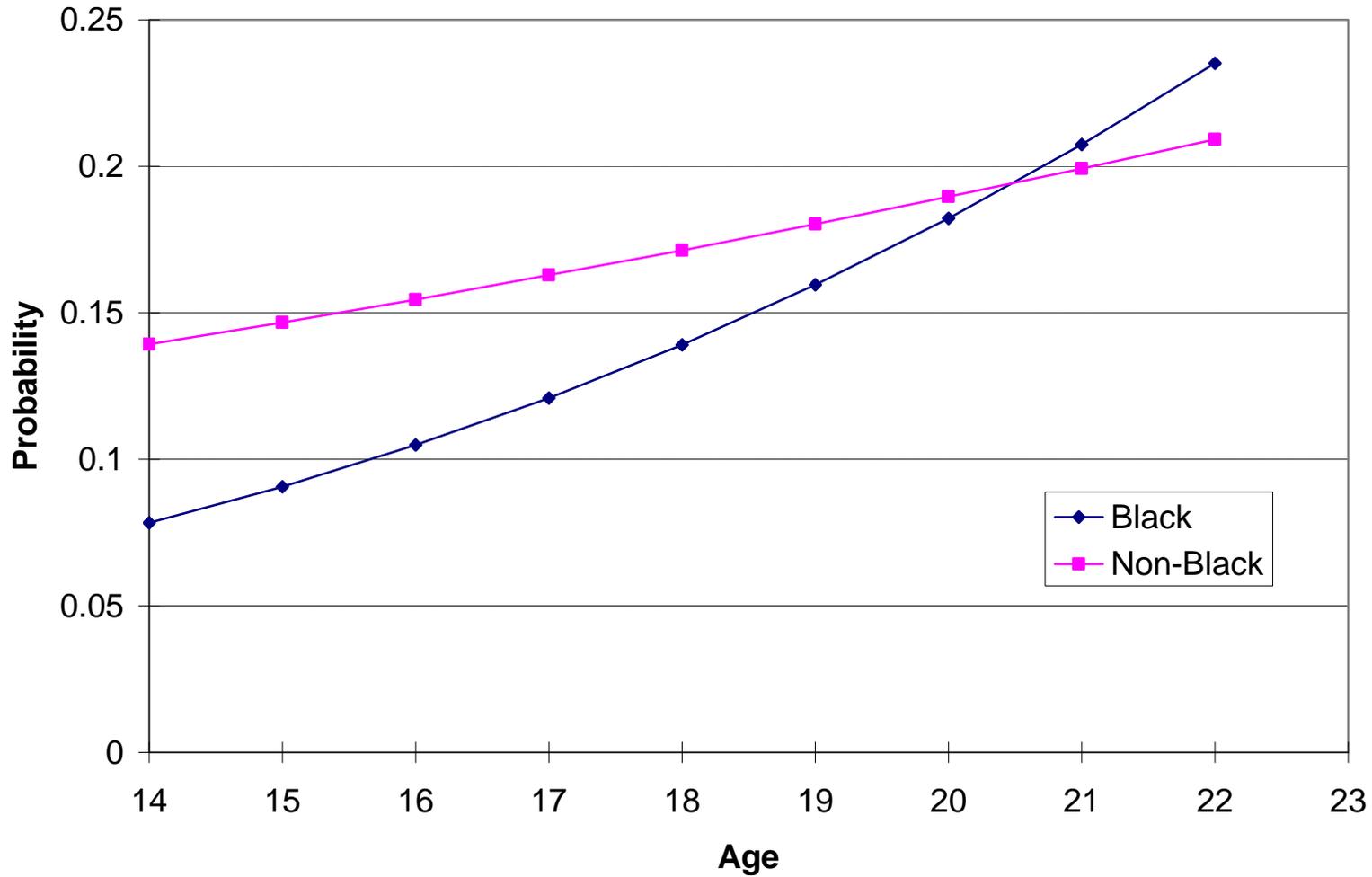
The Endogeneity of a Father's Presence

     To this point, we have assumed that the father's
presence or absence from the home is exogenous to the extent
that it is not influenced by his child's delinquency. Yet,
fathers are present or absent for a reason which may be
related to the child's delinquent behavior. For example,
jailed fathers are absent, but it may be their criminality
rather than their absence that has implications for the
son's delinquency. In this case, the empirical results
presented above would reflect not so much the father's
presence or absence from the home as much as the tendency of
both parent and child towards criminal behavior. The
father's absence would then be merely a proxy for this
effect. In this scenario, delinquent children and absent
fathers are the joint result of other, more basic, causal
factors.

     In addition to the hypothesis of jointly determined
effects, there is the possibility of explicit reverse
causality. After reviewing the literature on criminal
behavior and family structure, Wilson and Herrnstein write
that "this [evidence] does not mean that problem children
will always wreck marriages...but we do mean that the child
can be as much the cause as the consequence of family
patterns, including broken homes and even abusive ones."[6]

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[6]   Wilson and Herrnstein, 1985, p. 253.

To the extent that this supposition is correct, the estimated coefficients are biased because they do not account for the essential endogeneity of the family structure variables.

For both sets of reasons, we examine the endogeneity issue specifically in terms of its possible effects on the family structure coefficients. Although we do not estimate a complete model with equations for both family structure and childhood delinquency, we do consider whether endogeneity led to biased estimates in our regression coefficients. Our approach is to test whether our basic results were influenced very much by the admitted endogeneity of the family structure variables.

Before proceeding to the empirical tests, recall an important characteristic of the data which is employed. The relevant family structure variable is to the child's living situation when he is age fourteen, while our measures of delinquency refer to the child's subsequent conduct, between the ages of fourteen and twenty-two. The variables are therefore specified to provide a recursive model in which there is no reverse causality. And of course, as is well known, the structural coefficients estimated in recursive models are unbiased.

To be sure, this argument does not deflect the bias resulting from jointly determined variables. If there is some underlying factor, call it "bad genes," that impacts on both dependent and explanatory variables, then biased

coefficients still result notwithstanding the recursive nature of the model.

Our first means to explore this issue is to re-estimate our basic equation by means of two-stage least squares, where the relevant structural variable is the simple distinction by the father's presence or absence from the home. These results are presented in Table IV.

In this table, the first column reports the ordinary logit equation for the "Ever Charged" variable that is similar to what was presented above, while the second column provides the estimated coefficients for a second stage structural logit equation for the same dependent variable. To estimate this equation, we use a reduced form logit equation for the "Dad Present" variable which includes the following instruments: the Black and Hispanic dummy variables, the boy's age in 1980, and family income. These variables also are present in the structural equation. We also include the following additional instruments: a dummy variable indicating whether the dad was alive or dead in 1980, and dummy variables indicating religious affiliation with the first one denoting the absence of religious affiliation and the second indicating that the child is Roman Catholic. There is also a variable indicating the presence or absence of older siblings.[7]

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[7]   In an earlier version, we also included the parents' education levels, by the highest grade in school completed by father and mother. However, neither variable was statistically significant in the reduced form equation for Father Present.

TABLE IV

Ordinary and Two-stage Logit Equations
for the Delinquency Measure of Ever Charged

	Ordinary Logit	Two-Stage Logit
Intercept	-2.251** (6.07)	-2.128** (5.12)
Age	0.0692** (3.58)	0.0703** (3.53)
Family Income	-0.00000952** (2.79)	-0.00000883* (2.25)
Father Present	-0.521** (4.99)	-0.696* (1.75)
Hispanic	-0.0992 (0.75)	-0.1004 (0.76)
Black	-0.499** (4.02)	-0.521** (3.73)
No. of Observations	3826	3826
Log Likelihood	-1642.8	-1653.2

t values in parentheses
** significant at the 1% level
* significant at the 5% level

Except for the dummy variable representing Catholic religious affiliation, all of the variables are significant in the reduced form equation.

Comparing the two structural equations, we see that the largest difference is for the Dad Present variable where the absolute value of the coefficient rises from 0.521 to 0.696, although the t value drops from 4.99 to 1.75. While the coefficient remains statistically significant, it is no longer highly so. However, what may be more important, the structural coefficient is now one-third larger which suggests a greater impact of a father's presence on his son's prospects for delinquent behavior. Furthermore, the income coefficient declines somewhat from 0.00000952 to 0.00000883, indicating a slightly lower impact of family income. While these equations hardly provide conclusive evidence on the endogeneity question, the effect of a father's absence is supported here even despite the endogenous nature of this variable. Furthermore, and what may be more important, the previous results, if anything, may understate the impact of the father's absence relative to that of family income.

While this approach uses various instruments to remove the endogeneity of a father's presence or absence from the home, our second method uses only one. What is required is a variable that affects the father's presence but does not directly influence the child's delinquency. To this end, we distinguish between fathers whose absence is due to their

premature death and those who remain alive though absent.
Unfortunately, this instrument is only partially
satisfactory because some fathers may have died because of
their involvement in criminal activity. A better instrument
would have been those fathers whose deaths were unrelated to
any criminal activity, but unfortunately that degree of
detail is missing from our data set. However, to the extent
that most of the fathers absent because of death died from
illness or other extraneous causes, this variable permits a
clear test of the endogeneity factor.

The relevant data are presented in Table V, where the
first figure in each cell is the probability of a boy being
charged with a crime, and so is comparable to the variable
used above. Before proceeding, note the apparent anomaly
that there are 106 cases in which the father is present when
the boy was fourteen but dead in 1980. These cases arise
because the father's presence or absence refers not to a
specific year but rather to a point in the boy's life. For
boys age 22 in 1980, their father may have been present
eight years earlier but had died in the intervening years.

It is evident from this table that the probability of a
boy being charged with a crime where his father was absent
at an early age, does not differ between those whose father
was dead or alive when the sample was taken. In either
case, these probabilities are substantially greater than

TABLE V

Probabilities of Boys Being Charged
With A Crime Between Ages 14 and 22

	Father Alive In 1980	Father Dead In 1980
Father Absent at Age 14	0.211 (0.015) 667	0.213 (0.034) 155
Father Present at Age 14	0.142 (0.007) 2898	0.208 (0.043) 106

Figures in parentheses are standard deviations of the estimated values, which are determined under the assumption of independence. The number of cases in each cell is the third figure given.

where the father is alive and present. If we assume that
their fathers' deaths were unrelated to any criminal
activity, then these results provide a further test of the
endogeneity factor. They indicate that the father's absence
is the critical determinant of delinquent behavior and not
some other unspecified factor.

There is also corroborating evidence from those cases
where the father was present at age fourteen but dead in
1980. The reported probability here is essentially the same
as that found where the father was absent, for whatever
reason, at age fourteen. At the same time, the probability
of delinquent behavior is significantly lower when the
father was present at age fourteen and remained so through
1980. Only a father's continued presence had the desired
effect of reducing the prospects of delinquency.

Another approach to Table V is to assume alternatively
that those fathers who had died by 1980 were either bad
parents or had imparted bad genes to their offspring. In
that context, we should look only to cases where this parent
is alive to determine the impact of his absence. Doing so,
we find that a father's absence sharply increases the
probability that his son will be charged with a crime by age
22.

While these tests separately do not offer conclusive
evidence of the importance of the endogeneity factor,
together they suggest there is something more at work.
These findings together support the critical importance of

the father's presence or absence from the home as a leading

determinant of his son's subsequent delinquent behavior.

Do Mothers Make A Difference?

We also estimated logit equations for the three

measures of delinquency but where family structure is

represented by the presence or absence of the boy's mother.

The results are reported in Table VI. Before reviewing

these results, recall that there is far less variability in

this factor than with the presence or absence of the boy's

father; and that for all ethnic groups, over 90 percent of

the boys in the sample lived with their mothers at age

fourteen.

As can be seen, none of the variables included in the

first equation, representing the probability of ever being

stopped for criminal activity, are statistically

significant. This finding contrasts with the results

reported in Table II where the father's presence was

statistically significant.

Turning to the second measure of delinquency, both age

and family income are significant here, as was reported in

the earlier equation. Similarly, the coefficient

representing the Black ethnic group is negative and

statistically significant. The only difference here is that

the mother's presence is not significant, which stands in

sharp contrast to the significant effect of the father's

TABLE VI

Logit Estimates for Three Measures of Delinquency

	Ever Stopped	Ever Charged	Ever Convicted
Intercept	-0.9177** (3.26)	-2.289** (6.75)	-3.036** (7.09)
Age	-0.0007 (0.05)	0.071** (4.28)	0.076** (3.05)
Family Income	-0.000002 (1.06)	-0.000018** (5.66)	-0.000017** (4.26)
Mother Present	0.024 (0.19)	-0.204 (1.44)	-0.145 (0.81)
Hispanic	-0.014 (0.15)	-0.029 (0.26)	-0.210 (1.48)
Black	0.02 (0.25)	-0.355** (3.62)	-0.478** (3.76)
No. of Observations	4869	4869	4868
Log Likelihood	-2871.61	-2176.48	-1546.46

t values in parentheses
** significant at the 1% level

* significant at the 5% level

presence. Additional family income of $11,631 is sufficient to counter the beneficial effect of a mother's presence.[8]

And for the third equation, which deals with our final measure of delinquency, we have the same results. The only difference from what was reported before is again that the mother's presence is not statistically significant. Apparently, the mother's impact on delinquency, as compared generally with the effect of another woman, is not different, which stands in sharp relief to the distinctive impact of a father's presence as compared with another man.

Returning to our original hypothesis, these findings do not suggest that mothers are less altruistic towards their sons than are fathers, but rather that the altruistic conduct shown by another woman in the house is nearly as great, so there is little differential impact of motherhood. In contrast, there is no indication of altruistic conduct by any other man, so the differential effect of fatherhood is much greater.

A Closer Look at Family Structure

While the analysis above explores the influence separately of a father's or mother's presence, we now consider these effects together. Although this approach permits a more detailed examination of the role of family structure, it suffers from the relatively small number of observations in some of the relevant cells. For this

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[8]   The standard deviation of this estimate is $8,400.

reason, we do not here carry out an econometric analysis but rather only present cell means. There is thus the danger of confounding these results with other factors that may also impact on delinquency patterns. With that qualification, we examine the relevant data.

There are twenty-five categories of family structure reported in the National Longitudinal Survey. Five of these categories were selected, that together account for nearly 95 percent of the observations, and the rest were aggregated into a category of "other" family structures. These categories are noted in Table VII. A striking feature of the results presented there is that the reported patterns are generally consistent for the three measures of delinquency. Our conclusions therefore do not depend on which measure is used.

The most interesting comparisons presented in Table VII are those for family structures in which one parent is absent from the home or with a step-parent. Note the striking differences between the "Mother-Stepfather" and "Father-Stepmother" categories: for the latter two measures of delinquency, the reported probabilities are twice as high in the "Mother-Stepfather" case as in the "Father-Stepmother" case; and there is even a difference of nearly ten percentage points for the first measure. These findings are thus consistent with the earlier empirical results that stress the impact of a father's presence at home on his son's conduct. To be sure, the first case has a lower

TABLE VII

Delinquency by Family Structure

Family Structure	No. of Cases	Percentages			Average Family Income
		Ever Stopped	Ever Charged	Ever Convicted	
Father-Mother	3,405	26.1	15.0	9.2	$19,511
Mother-No Man	789	32.2	19.6	10.5	11,550
Mother-Stepfather	315	35.2	28.9	13.7	14,995
Father-Stepmother	89	25.8	12.4	6.7	17,567
Father-No Woman	62	33.9	22.6	12.9	14,784
Other structures	267	31.5	24.7	13.5	11,492
Chi-Square coefficient	N/A N/A	24.35**	58.69**	12.68*	
Total number of cases	4,927 4,922[b]	4,924[a]	4,927	4,927	

a   Data for three cases are not available, including two in the first category and one in the second.

b   Data for an additional two cases are not available, one in first category and one in the second.

*   Statistically significant at the 1% level.

**   Statistically significant at the 5% level.

N/A   Not applicable

average family income than the second, although given the previous empirical findings, this factor is hardly likely to account for these differences.

Just as interesting is the comparison with the mother present, between cases where there is no man present and where there is a stepfather. Again, as reported earlier, having a stepfather present only increases the prospects for delinquency. On the other hand, looking at the corresponding comparison with the father present, a stepmother has an important salutary effect. These results suggest that a step-parent's gender is critically important. For boys, a stepmother's presence reduces the prospects of delinquency but not so for a stepfather's presence.[9]

We also carried out a contingency table analysis for each of the three measures. As indicated by the Chi-Square values reported in Table VII, there is a statistically significant relationship for each of the three measures with family structure. In addition, the residuals for each mean value were calculated as the observed frequency minus the expected frequency under the assumption of independence, divided by the square root of the expected frequency. Since the sum of squares of these residuals is the Chi-Square statistic, we can determine which cells contributed most to

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[9] Although our hypotheses rest on differences in altruistic behavior between parents and step-parents, there are also differences in abusive behavior which could account for our findings. After reviewing the evidence on this issue, Daly and Wilson find that "Stepparenthood *per se* remains the single most powerful risk factor for child abuse that has yet been identified" (1989, pp. 87-88). Unfortunately these writers do not distinguish between stepmothers and stepfathers. [We thank Ted Bergstrom for this reference.]

the significant association between family structure and the three measures of delinquency.

For all three measures, the Mother-Stepfather category represented significantly more involvement with the criminal justice system than predicted under the assumption of independence. In contrast, the Father-Mother category had significantly less involvement than projected. These two structures together accounted for a major share of the significant Chi-Square values.

Recall that these results are designed to indicate the role of altruism within the family. These findings are generally consistent with those reported in the logistic equations. Again, we see the critical importance of the father's presence in the home. However, there is now an indication that the salutary effects of his presence are particularly likely when a mother or stepmother is also present.

Conclusions

These empirical results are striking. Overall, the most critical factor affecting the prospect that a male youth will encounter the criminal justice system is the presence of his father in the home. All other, even including family income, are much less important.[10]

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[10] While Wilson and Herrnstein review the evidence that delinquency is related to broken homes, they find it to be mixed (1985, p. 245). Their conclusion may be due to the various measures used to indicate delinquency. See also Loury, 1987.

There are significant policy implications that follow from these results. Currently, most discussions of teenage violence look first at family income. An example is the Progressive Policy Institute report on "Putting Children First."[11] Its primary proposals deal with tax credits and exemptions for children, and for collecting greater child support payments from absent fathers. Whatever the usefulness of these proposals to achieve other objectives, our findings suggest that they will have little effect on the problem of teenage delinquency. Both measures tacitly accept the father's absence from the home and seek to ameliorate its consequences by increasing the income available to mother and child. However, as reported above, the trade-off here is too steep; it requires an increased family income of approximately $50,000 to counter the father's absence, and none of these proposals can hope to achieve that measure of income replacement. The empirical results reported above indicate that policy measures directed at income replacement cannot succeed.

Furthermore, efforts to find "replacement" fathers for teenage boys may be equally unsuccessful. While we have no results on the impact of male role models outside the home, we find that replacement men within the home offer little hope for improvement in teenage delinquency, and may even make matters worse. Recall our finding with regard to the

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[11]   Kamarck and Galston, 1990.

measure, Ever Charged, that the absence of a man from the home was a more salutary factor than the presence of another man who is not the boy's father. While there may be examples where replacement fathers have desirable effects, we cannot anticipate that policy actions taken in this area will have much effect.

Fathers play a critical role in the rearing of boys and young men. As one psychologist concludes, "rejecting a son turns out to be the most demoralizing thing a father can do to his son."[12] While this rejection can surely take place within the home as outside, these findings suggest that rejection is more common or has a larger impact when the father is absent from the home. Policy measures should be directed first at improving the prospect that boys will grow up in homes with their fathers as well as their mothers.

One approach would be to change the divorce laws such that they treat divorce petitions between parents differently than those between couples without children. Where children are involved, divorces should be more difficult to obtain. To be sure, any change in this direction will have little impact on the large and growing proportion of births that occur outside of marriage. In the past, these births were limited by an overwhelming social disapproval, which unfortunately has dissipated in recent years. How to replace that disapproval with something else

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[12]   Heath, 1991, p. 282.

such that boys grow up in the same households as their fathers is a difficult task for which we have no suggestions. Still, it is an effort that deserves society's attention.

Becker's model of altruistic behavior within the family has important implications for public policy. It concludes that both parent and child benefit from altruistic actions taken by the parent on behalf of the child. The goal of public policy should be to promote and encourage this conduct, which can be done best by finding ways to support close and continued relationships between fathers and sons.

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