

# Criminological Controversies

## A Methodological Primer

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### *Testing Propositions About Gender and Crime*

*John Hagan*

#### **A Beginning**

Criminologists who use quantitative methods in their work often begin to formulate research problems by distinguishing the independent and dependent variables they intend to study. Crime is the dependent variable criminologists usually seek to explain, although it can also be an independent variable used to explain other phenomena. To say that crime is a dependent variable is to say that it is an effect, the consequence of change in some other variable. To say that crime is an independent variable is to say that it is a cause, the source of variation in some other variable. In either case, we must be explicit as to our location of crime as a cause or an effect.

The assertion of a cause-and-effect relationship between crime and another variable is often called a proposition, and such propositions are the building blocks of criminological theories. For example, a frequently tested proposition at the core of a control theory of crime asserts that parental supervision reduces delinquent behavior. To test this primitive statement of a theory of crime we must be able to test its single proposition with distinct operational definitions (i.e., measures) of its key concepts or variables, which are parental control and delinquent behavior. These operational definitions might consist of reports on questionnaires by high school students about the extent to which their parents know where they are when they are away from home, and the extent of their involvement in behaviors (e.g., theft, vandalism, and assaults) defined by laws and by most citizens as crimes.

Once operational measures of our concepts are established, it becomes possible to answer the question of whether there is an inverse relationship, or negative covariation, as proposed in the theory, such that those adolescents who report less parental supervision also report more involvement in delinquency. If there is a negative covariation (beyond what would occur frequently by chance) observed between parental supervision and delinquency, it is possible to reject the "null hypothesis" that, counter to control theory, there is no causal relationship between parental control and delinquency. The logic of

the scientific method is that we advance our theories by rejecting their alternatives.

When we cannot reject the alternative hypothesis to that put forth in our own theoretical proposition, we are encouraged to continue building our theory by adding to it further propositions that elaborate and test the implications of the theory. We describe the development of a power-control theory of gender and delinquency by this process of elaborating and testing propositions over the course of this chapter. The discussion begins simply and gradually becomes more complicated. No more than the most basic math skills are required to follow the discussion, but it will be helpful to replicate some of the procedures presented through your own hand computations. Replication of the procedures will involve interruptions in your reading of the chapter and reading some passages several times to be clear about what is being done. However, once you master the material in this chapter, you will find that you can read with understanding a great majority of the quantitative research you will encounter in criminology.

### Studying Covariation

Covariation between variables can be examined in more ways than are appropriate for us to consider here. However, tabular and multiple regression analysis are two statistical techniques that have played important roles in exploring and testing propositional theories about crime. Tabular techniques played a formative role in early scientific studies of crime, and the logic of causal analysis that evolved with these techniques remains important today, for example, in the extensive use made of multiple regression analysis in contemporary journal articles and research monographs. We will introduce tabular techniques now and use them as a bridge to multiple regression techniques, which will be the focus of much of the discussion in this book.

We can continue with the same example already introduced from a control theory of delinquency, which we will then discuss as part of an elaborated power-control theory of gender and delinquency. This example proposes that as supervision of children increases, self-reported involvement in delinquency decreases. Consider Table 2.1, which is derived from a classic study of delinquency in the high schools of Richmond, California (see Hirschi, 1969); the independent variable, maternal parental supervision, is cross-tabulated with the dependent variable, self-reported delinquent behavior. *Later, we discuss how assignment of parent supervisory roles to women is part of patriarchal familism and varies.* Maternal supervision is tabulated in the three cate-

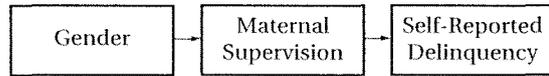
**Table 2.1** Percentaged Cross-tabulation of Maternal Supervision and Self-Reported Delinquency

<i>Self-Reported Delinquency</i>	<i>% None</i>	<i>% One +</i>	<i>N</i>
<b>Maternal Supervision</b>			
Low	48.92(748)	51.08(781)	1529
Moderate	62.73(1183)	37.28(703)	1886
High	77.26(6442)	22.74(1896)	8338

*Source:* Travis Hirschi, 1969, *Causes of Delinquency* (Berkeley: University of California Press).

gories of low, moderate, and high, while delinquency is tabulated as none and as one-or-more self-reported delinquent acts. Table 2.1 is "percentaged in the causal direction." That is, the percentage of respondents who report none and one-or-more delinquent acts is calculated within categories of the independent variable, which is maternal supervision. To establish the possible influence of an independent variable on a dependent variable it is necessary to make sure that we percentage in this direction. This method allows us to compare the percentages of respondents who report delinquency within levels of supervision, which we assume to cause delinquency. Percentaging in the alternative direction would not give us the relevant comparisons and can lead to embarrassingly illogical inferences. However, if we percentage in the causal direction, we see that with each increase in the level of maternal supervision, the percentage of respondents reporting delinquent acts decreases: from just over half (about 51 percent) reporting delinquency under low supervision to less than a quarter (about 23 percent) reporting delinquency under high supervision.

This simple finding, that maternal supervision reduces delinquency, gains meaning when placed in the context of patriarchal family relationships. For example, an elaborated control theory of gender and delinquency begins to emerge when it is noted that gender is related to both maternal supervision and delinquency: boys evidence less maternal supervision and more delinquency than girls. There is a sequence apparent among these variables, with gender established and channeled from birth and maternal supervision extending from early childhood through adolescence, when delinquency begins. From this sequence it can be logically inferred that maternal supervision is an "intervening" or "mediating" variable that can help "interpret" or "account for" the relationship between gender and delinquency; that is, lower maternal supervision helps to account for why boys are more



**Figure 2.1** A Simplified Control Theory of Gender and Delinquency

delinquent than girls. This causal relationship is illustrated in a simple "path model" in Figure 2.1. Percentaged tables can be used to test this emergent and slightly more complex control theory of gender and delinquency.

Table 2.2 displays the relationship between gender and delinquency in Richmond high schools, as analyzed by Jensen and Eve (1976): almost 43 percent of the males reported one or more delinquent acts, compared to less than 19 percent of the girls. The 24 percentage point difference in delinquency involvement between genders is a useful measure of the strength of the relationship between these variables. So there is a substantial relationship between gender and delinquency, and we have made a logical argument that maternal supervision, which is associated with both of these variables, assumes a position in sequence between these variables. To establish that maternal supervision intervenes between gender and delinquency and in this way mediates or accounts for this relationship, we now divide the Richmond sample into three groups defined by level of maternal supervision and again crosstabulate gender and delinquency within these groupings.

If maternal supervision does indeed mediate the gender-delinquency relationship, this relationship should disappear or at least decline within each part of Table 2.3 defined by level of maternal supervision. For example, in that part of the table made up only of youth who experience low levels of maternal supervision, we should expect girls and boys to report more similar involvements in delinquency than reported in Table 2.2 where youth are combined regardless of level of

**Table 2.2** Percentaged Cross-tabulation of Gender and Self-Reported Delinquency

Self-Reported Delinquency	% None	% One +	N
Male	57.11(2788)	42.89(2094)	4882
Female	81.28(5585)	18.72(1286)	6871

Source: Data from Gary F. Jensen and Raymond Eve, 1976, "Sex Differences in Delinquency," *Criminology*, vol. 13, pp. 427-48.

**Table 2.3** Percentaged Cross-tabulation of Gender and Self-Reported Delinquency by Maternal Supervision

Self-Reported Delinquency	Low			Moderate			High			N
	% None	% One +		% None	% One +		% None	% One +		
Male	44.23(487)	55.77(614)		53.99(568)	46.01(484)		63.50(1733)	36.50(996)		4882
Female	60.98(261)	39.02(167)		73.74(615)	26.26(219)		83.95(4709)	16.05(900)		6871

Source: Data from Gary F. Jensen and Raymond Eve, 1976, "Sex Differences in Delinquency," *Criminology*, vol. 13, pp. 427-48.

supervision. In particular, we should expect a substantially larger share of girls to report involvement in delinquency under low supervision, which is somewhat uncommon for girls. Note that this is exactly what we find if we compare the bottom right cell of Table 2.2 with the bottom right cell, under low maternal supervision, of Table 2.3: the percentage of girls involved in delinquency under low levels of supervision increases by more than 20 percent (from 18.72 to 39.02). Of course, the delinquency involvement of boys also increases under low levels of supervision, in this case by about 13 percent.

To get an overall measure of the extent to which maternal supervision accounts for the relationship between gender and delinquency, we can compare the percentage difference in delinquency involvement of boys and girls at each of the three levels of supervision (about 17, 20, and 20 percent) with the percentage difference we have already noted in the combined sample (24 percent). These measures indicate that the gender-delinquency relationship is reduced but by no means eliminated so that differences in maternal supervision by gender account for some, but certainly not all, of this relationship.

We have found support for a simple control theory of gender and delinquency, but a more elaborate causal theory is required to explain the gender-delinquency relationship. This is not surprising. It is often noted that behavior is the product of many small causes rather than a single all-encompassing causal force, or in other words, that most social behavior is the product of a "dense causal web" (Nettler, 1970). In addition, supervision and delinquency are measured crudely in the above tabular analysis, with only three categories of maternal supervision and delinquency indicated as some or none. Tabular techniques are limited in the numbers of variables and categories that can be considered simultaneously. Even with a very large sample, we soon run out of cases to fill the cells when more than a few variables and categories are included in the analysis. Multiple regression analysis uses more efficient statistical techniques. We describe the use of these techniques later, after we introduce an elaborated power-control theory that considers not only links between gender and delinquent acts but also links with police contacts.

### Elaborating the Causal Model

Power-control theory elaborates the model we have considered by further conceptualizing the causal relationship between gender and delinquency. This elaboration notes the unique relationship that exists between mothers and daughters in patriarchal families. This relationship is illustrated in Tables 2.4 and 2.5, where we separately cross-tabulate gender and mater-

**Table 2.4** Cross-tabulation of Gender and Maternal Supervision

Gender	Maternal Supervision			N
	Low	Moderate	High	
Male	22.55(1101)	21.55(1052)	55.90(2729)	4882
Female	6.23(428)	12.14(834)	81.63(5609)	6871

**Table 2.5** Cross-tabulation of Gender and Paternal Supervision

Gender	Paternal Supervision			N
	Low	Moderate	High	
Male	29.56(1332)	20.86(940)	49.58(2234)	4506
Female	19.00(1129)	12.91(767)	68.10(4047)	5943

nal and paternal supervision. Table 2.4 is generated from Table 2.3 by summing cases across combined categories of delinquency within each gender and level of supervision and then repercentaging across the collapsed table. (Performing these calculations will give you a better feeling for how these tables are constructed.)

Table 2.5 is generated with a separate, analogous measure of paternal supervision. A comparison of tables 2.4 and 2.5 makes it apparent that the role of parental controls involves mothers more than fathers and the control of daughters more than the control of sons. That is, both sons and daughters are more highly controlled by their mothers than by their fathers, and the differences in levels of control imposed by mothers, with daughters more controlled than sons, are greater than levels of control imposed by fathers. The implication is that mothers and daughters are assigned distinct and unique roles as both instruments and objects of social control within the structure of the patriarchal family.

These relationships are important because they underline a patterning by gender of social control in the family. In other words, they reflect a division by gender in the social stratification of domestic social control. It is relevant to note here that while some modern statements of control theory emphasize social as well as individual aspects of the bonds or controls that constrain delinquency, other formulations of this theory deemphasize the causal force of social bonds by placing the emphasis on self-control. In other words, the emphasis in latter formulations of control theory is placed on controls that come from within the individual rather than from others. By focusing on power relationships within the family as well as on patriarchal power relationships that impinge on the family, power-control theory emphasizes socially determined links

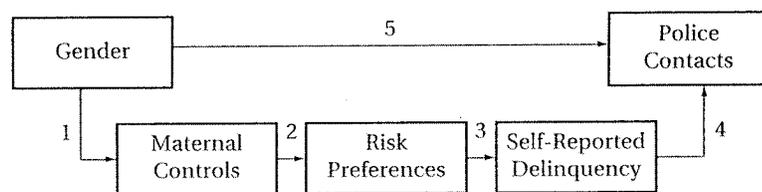
between gender and delinquency. The overarching premise of power-control theory is that these relationships play a causal role in the tendency of males to exceed females in delinquency. The patriarchal power structure of the family and the gender specific roles that it assigns to mothers and daughters in the family are important causal forces in this theory. Later we will discuss how family structures can vary.

We turn next to a condensed statement of power-control theory (see Hagan, 1989: Chap. 6 for a fuller discussion) that broadens our attention beyond delinquent behavior to include official reactions to delinquency in the form of police contacts. This elaboration of power-control theory is summarized in Figure 2.2.

The first mediating link in power-control theory asserts that it is mothers more than fathers that are held responsible for the everyday imposition of parental controls, which in turn are imposed on daughters more than on sons. This is the mother-daughter relationship observed in the earlier data and the relationship which power-control theory identifies as a cornerstone of patriarchal family relations. These parental controls can be both instrumental (as in supervision and surveillance) and relational (through processes of identification and affection), although we focus initially on instrumental controls.

The second mediating link in power-control theory proposes that these controls will have the effect of diminishing the preferences to take risks. These risk preferences are reflected in survey items that ask about liking to take chances and liking to do dangerous things. The resulting attitudes may also be linked to variations in perceptions of risk, such as in perceptions of the likelihood of getting caught and punished for delinquency. However, our emphasis for the moment is on the expectation of this theory that parental control produces an aversion to risk-taking, especially personally dangerous forms of risk-taking.

The third and fourth mediating links in this theory assert that risk aversion will reduce delinquency, and that in turn delinquent behavior will increase official police contacts. In addition to the mediating "indi-



**Figure 2.2** A Power-Control Model

Source: John Hagan, 1989, *Structural Criminology* (New Brunswick, NJ: Rutgers University Press).

rect" links we have identified between gender and delinquency, power-control theory also predicts that gender will have a fifth "direct" effect on official police contacts so that boys are more likely than girls to get picked up by the police, above and beyond their greater involvement in delinquent behavior. This aspect of power-control theory argues that, although mothers and daughters are more often the instruments and objects of informal social control in the private sphere of the family, male adults and sons are more often the instruments and objects of more formal social control in the public sphere that includes policing. There are important exceptions to this aspect of the theory, especially involving the punitive policing of prostitution and related status offenses involving females; nonetheless, the general tendency is for males to be more heavily policed than females. Power-control theory argues that, over time, the effect of this tendency has been to reinforce a gender division or stratification between the private and public spheres, with females having only limited and relatively recent representation in the public sphere of policing—either as police officers or as suspects. We will have more to say about the prospect of contemporary changes in the gender stratification of social control later.

We have presented a condensed and a partial statement of power-control theory. However, it is sufficient to illustrate a theory with several mediating or indirect links, as well as direct links that can be tested against actual data. This chapter provides an illustration of how such a theory can be explored using multiple regression techniques. First, however, we must introduce these multiple-regression techniques.

## The Rudiments of Regression

We will explore power-control theory by using multiple regression techniques to undertake a path analysis. The paths in this analysis correspond to the direct and indirect links proposed in the theory presented earlier in this chapter. In a sense, we already have undertaken a kind of path analysis when we used percentaged tables to test the simple three variable path model summarized in Figure 2.1. We used percentaged tables to test whether gender causally influenced delinquent behavior through the mediating variable of maternal supervision. We found that gender seemed to act partially through this supervision but that gender had a substantial remaining direct effect. However, we also suggested that other mediating variables were likely involved as well, too many to be explored with percentaged tables. Later we use multiple regression equations to statistically estimate the existence and strength of additional indirect paths of influence as well as remaining direct paths of influence. This statistical estimation requires that we first develop a rudimentary working knowledge of multiple regression analysis.

As in tabular analysis, we begin multiple-regression analysis by establishing our independent and dependent variables. In multiple regression analysis the convention is to speak of regressing our dependent variable on our independent variables. We do this to estimate the significance and strength of the independent variables in predicting the dependent variable. The ultimate dependent variable in power-control theory is police contacts.

Multiple regression analysis was developed initially as a device for prediction. Imagine that in a sample of high school students we have a dependent variable or outcome which is the number of police contacts ( $y$ ), and imagine that we are trying to predict this outcome on the basis of an independent variable, which is preferences for risk-taking ( $x$ ). Imagine that student scores on these two dimensions can be graphed along  $x$  and  $y$  axes, as in Figure 2.3. Multiple regression analysis minimizes the scatter of scores from a line that best fits the relationship between  $x$  and  $y$ . In other words, this is a line that best allows us to predict a value of  $y$  given a value of  $x$ . A regression equation is used to establish this line.

The following is the standard form of a multiple regression equation used to estimate this line that best fits the relationship between  $x$  and  $y$ :

$$y = a + bx + u.$$

We can define the several terms in this equation:

- $y$  is the dependent variable (e.g., police contacts) and its values;
- $a$  is called the intercept or constant and is the value of  $y$  on the graph when  $x$  is equal to 0;
- $x$  is the independent variable (e.g., preferences for risk-taking);
- $b$  is the slope (also called the unstandardized regression coefficient) that the regression line takes in predicting  $y$ , indicating the amount of change that occurs in  $y$  (e.g., the number of police contacts) with each unit change in  $x$  (e.g., each unit of change in preference for risk-taking);
- $u$  is the disturbance or error term, which represents the errors that result in attempting to predict  $y$  from  $x$ .

Several assumptions are made in using multiple regression. For immediate purposes, the most important of these assumptions is that the disturbance or error term is unrelated to the independent variable(s) used to predict the dependent variable. When this assumption is met, it is possible to say that the multiple regression equation is "properly specified." A properly specified regression equation is one in which there is no unmeasured (i.e., omitted) variable reflected in the disturbance term

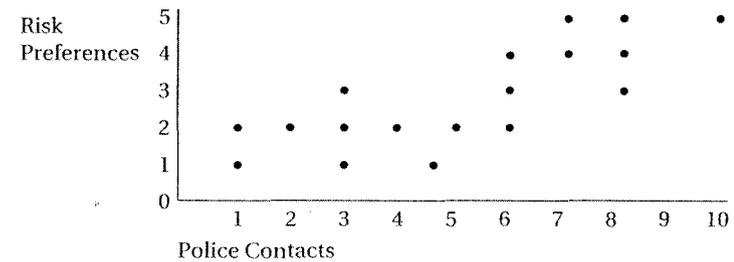


Figure 2.3 Scatterplot of Risk Preferences and Police Contacts

that is related to the independent variable(s) in the equation. In the regression equation specified above, number of self-reported delinquent acts is one obvious omitted variable. Inclusion of the term "multiple" in discussions of regression analysis reflects the fact that there are almost always a number of independent variables to be included in the prediction equation. When these variables are omitted and the regression equation is therefore misspecified, the results of a regression analysis will misrepresent the independent direct effects of the predictor variables.

Multiple independent variables are introduced into a regression analysis by expanding the form of the standard equation so that

$$y = a + b_1x_1 + b_2x_2 + \dots + b_kx_k + u.$$

In this equation  $b_1x_1$  to  $b_kx_k$  represent the respective slopes or regression coefficients and values of the range of independent variables included in the regression analysis.

In a properly specified regression equation, which includes measures of all relevant independent variables, the slopes indicate the "net" effects of each independent variable on the dependent variable with the effects of the other independent variables statistically controlled. In other words, these regression coefficients represent the relationship between the dependent variable and each independent variable with the effects of other known variables of influence removed and in this sense, held constant.

It can be argued that controlled randomized experiments can establish causal effects of independent variables even more securely than multiple regression analysis. However, because it is ethically problematic to assign subjects randomly to conditions we expect to cause crime,

experiments are rarely possible in criminology. Multiple regression analysis therefore provides one of our most important tools for establishing causal influences of explanatory variables and models in criminology.

We have noted that in their raw form slopes or regression coefficients indicate how much change in a dependent variable results from each unit change in an independent variable. For example, when solved (either through laborious hand calculations or more easily and efficiently by computer), an equation with number of police contacts as the dependent variable and number of self-reported delinquent acts as the independent variable will produce an unstandardized regression coefficient that indicates how many police contacts on average result from each self-reported delinquent act. If all acts of delinquency were known to the police through contacts, we might expect this coefficient to assume a value of one, reflecting a one-to-one relationship between acts and contacts. However, since most delinquency goes undiscovered or is of little significance, it probably will take more than a single act to produce the average police contact.

Standard multiple regression computer programs produce several other statistics that are useful in evaluating the results of these analyses. These statistics usually include a t-test for each independent variable that is the ratio of the unstandardized regression coefficient to its standard error (a measure of the reliability of the coefficient). This t-test, a test of statistical significance, indicates the likelihood that the coefficient estimated could have occurred as a result of chance fluctuations in sampling.

A measure called  $R^2$  is also provided, which indicates how much of the variation in the dependent variable has been "accounted" for by the independent variable(s). Meanwhile,  $1-R^2$  constitutes the error term, or the variance left unexplained by the independent variables.

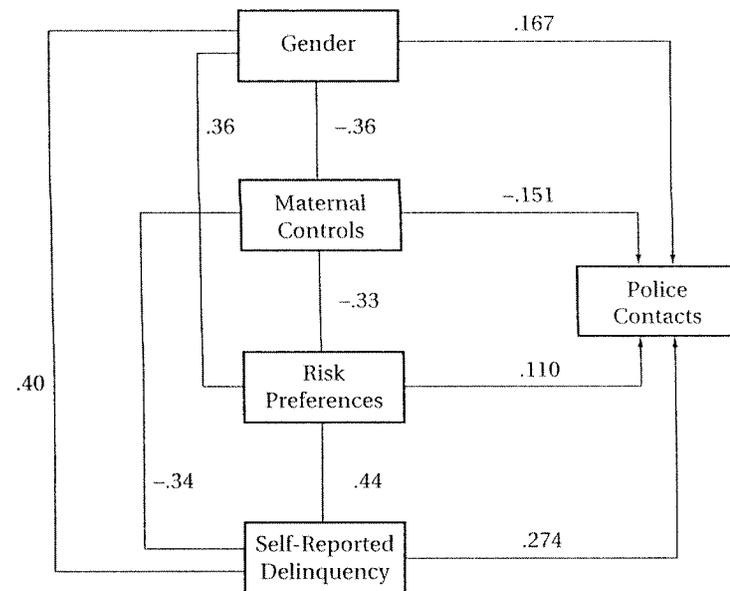
Finally, most computer programs will standardize regression coefficients to take into account that the independent variables, whose effects they reflect, are usually measured on different scales or metrics. Standardization allows us to make comparisons of the strength of the effects of differently measured independent variables, such as gender and risk preferences. So that although gender may be measured on a scale of zero (female) and one (male) and risk preferences on a scale from one to five (reflecting answers to attitude statements from strong agreement, through agreement, undecided, disagreement to strong disagreement), standardization establishes a level playing field of comparison. Standardization does so by simply multiplying the unstandardized regression coefficient by the standard deviation (i.e., the average deviation from the mean) of the independent variable over the standard deviation of the dependent variable. These standardized regression coefficients are also referred to as path coefficients.

### A Path Analysis of the Elaborated Model

We next turn to an illustration of path analysis using an example from the power-control formulation we have introduced. Although this model specifies a sequence of indirect as well as direct effects, we will begin as if the model included only direct effects of all its independent variables on the ultimate dependent variable, police contacts ( $y_1$ ). The independent variables are gender ( $x_1$ ), maternal controls ( $x_2$ ), risk preferences ( $x_3$ ), and self-reported delinquency ( $x_4$ ). The regression equation is therefore:

$$y_1 = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + u.$$

The path model that corresponds to this regression equation is presented in Figure 2.4. The lines without arrowheads on the left side of this model are unanalyzed correlations between the independent variables in the model, or in other words, the simple bivariate relationships between these variables without other variables taken into account. Like standardized regression coefficients, these correlations vary between



**Figure 2.4** Regression Model of Police Contacts

Source: Data from John Hagan, John Simpson, and A. R. Gillis, 1979, "The Sexual Stratification of Social Control: A Gender-Based Perspective on Crime and Delinquency," *British Journal of Sociology*, vol. 30(1), pp. 25-30.

zero and one. The arrows on the right side of Figure 2.4 represent the net direct effects of independent variables on police contacts, each with the effects of the other independent variables removed.

The results of estimating this initial model with the regression equation given earlier are presented in the bottom row of Table 2.6 and on Figure 2.4. These results are based on data gathered in 1976 from 611 suburban Toronto high school students (see Hagan, Simpson, and Gillis, 1979). We can briefly describe the measurement of each variable. Gender consists of girls (coded 0) and boys (coded 1). Maternal controls are measured with answers to two summed items asking, "Does your mother know (where you are)(who you are with) when you are away from home?" Risk preferences are measured on the basis of level of agreement with the summed statements, "I like to take risks" and "the things I like to do best are dangerous." Delinquent behavior is measured with a summed six-item, self-report scale (see Hirschi, 1969) that asks about acts of theft, assault, and vandalism. Finally, police contacts are based on a self-report of the number of times the respondent has been picked up by the police.

In the far right row of Table 2.6 we have added a column that includes the correlations between paternal controls and the variables in our model. We do so to examine again the relative strength of the relationships between maternal and paternal controls and other variables in our model, especially gender. As in the tabular analysis of the *Richmond data earlier in this chapter, gender is again more strongly related to maternal (-.36) than paternal (-.25) controls, providing further evidence of the intensity of the mother-daughter relationship we have emphasized. It reasonably can be argued that paternal controls should be added to the power-control model (see Morash and Chesney-Lind, 1991; Hagan, Gillis, and Simpson, 1987). However, because maternal and paternal controls are so closely correlated here (.69), it is difficult for the regression program to separate their independent effects. This problem in multiple regression analysis is called collinearity. Although we will not deal with this issue in detail here, we note that it is common to resolve problems of collinearity by omitting one of the highly related variables or by combining one variable with the other. We omit one of the highly related variables (i.e., paternal controls) here.*

We next turn to the multiple regression results. These results recorded at the bottom of Table 2.6 and on Figure 2.4 indicate that self-reported delinquent behavior is the strongest cause (.274) of police contacts. However, as power-control theory predicts, gender as well has a direct causal effect on police contacts (.167). These results are helpful in evaluating a part of the power-control formulation; however, we can learn more by taking advantage of the logical sequence of

Table 2.6 Correlation and Path Coefficients\*

Path Coefficient	Gender	Maternal Controls	Risk Preferences	Self-Reported Delinquency	Police Contacts	Paternal Controls
Gender	1.00	-.36	.36	.40	.35	(-.25)
Maternal Controls	-.360	1.00	-.33	-.34	-.34	(.69)
Risk Preferences	.277	-.230	1.00	.44	.34	(-.26)
Self-Reported Delinquency	.235	-.155	.304	1.00	.44	(-.31)
Police Contacts	.167	-.151	.110	.274	1.00	(-.24)

\*Correlation coefficients are presented in the upper half of the table, path coefficients in the lower half; see text for a description of the variables. Source: Data from John Hagan, John Simpson, and A. R. Gillis, 1979, "The Sexual Stratification of Social Control: A Gender-Based Perspective on Crime and Delinquency," *British Journal of Sociology*, vol. 30(1), pp. 25-38.

causal effects in the power-control model that lead from gender, through maternal control, risk preferences, and self-reported delinquency, to police contacts.

Path analysis models this sequence of effects through a series of regression equations, the last and most elaborate of which we have just estimated for police contacts. Each equation is a simplified version of the former. Therefore, the next equation we estimate takes self-reported delinquency as its dependent variable, the next takes risk preferences, and the final equation takes maternal controls as its dependent variable. We next write this full set of equations using acronyms in place of the x and y notations:

$$\text{POLCON} = a + b_1\text{GENDER} + b_2\text{MATCON} + b_3\text{RISK} + b_4\text{SRDEL} + u$$

$$\text{SRDEL} = a + b_1\text{GENDER} + b_2\text{MATCON} + b_3\text{RISK} + u$$

$$\text{RISK} = a + b_1\text{GENDER} + b_2\text{MATCON} + u$$

$$\text{MATCON} = a + b_1\text{Gender} + u$$

The results of estimating these equations with the Toronto data presented in Figure 2.5 indicate that there are both direct and indirect effects of gender and the other variables on self-reported delinquency and police contacts. In general, these effects are consistent with power-control theory. For example, we have already indicated that gender has a direct effect of .167 on police contacts. However, gender also has indirect effects on these contacts that operate in various ways through maternal controls, risk preferences, and self-reported delinquency.

In path analysis, the sum of a direct effect of a variable on another variable plus all indirect effects between these variables is called a "total effect." This property of path analysis and the related property that indirect effects can be calculated by multiplying intervening effects is called Wright's theorem (see Duncan, 1975; Alwin and Hauser, 1975). There are 5 indirect paths of the effect of gender on police contacts that you can follow in Figure 2.5:

$$(-.360)(-.155)(.274) = .015$$

$$(-.360)(-.151) = .054$$

$$(.235)(.274) = .064$$

$$(.277)(.110) = .031$$

$$(.277)(.304)(.274) = .023$$

$$\text{Indirect Effects} = .187$$

$$\text{Direct Effect} = .167$$

$$\text{Total Effect} = .354$$

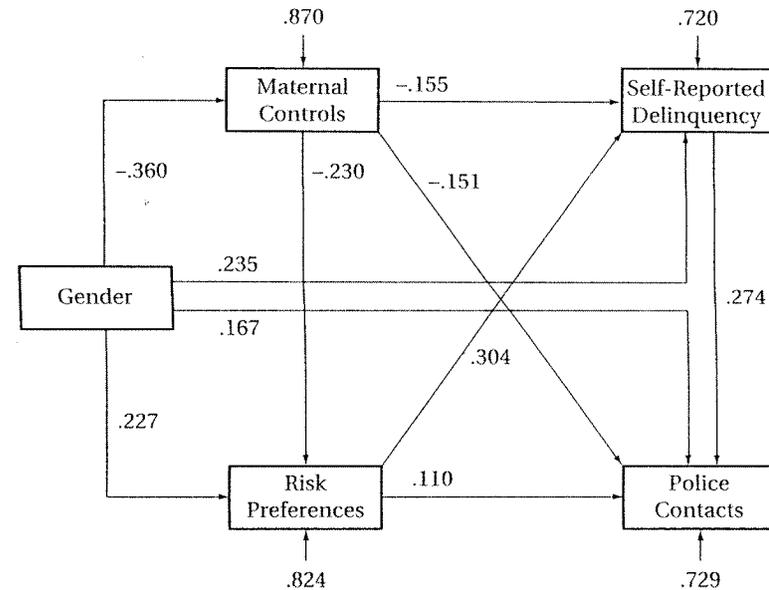


Figure 2.5 Elaborated Power-Control Model

Source: Data from John Hagan, John Simpson, and A. R. Gillis, 1979, "The Sexual Stratification of Social Control: A Gender-Based Perspective on Crime and Delinquency," *British Journal of Sociology*, vol. 30(1), pp. 25-38.

These indirect effects are all consistent with power-control theory in indicating that gender influences police contacts not only directly but also indirectly through maternal controls, risk preferences, and self-reported delinquent behavior. Said in a more general way, boys have more contact with the police not only because the police are more focused on them but also because they are less controlled by their mothers. In turn they develop higher preferences for risk, and they are therefore more involved in the delinquent behavior that generates police contacts.

You should undertake similar calculations to demonstrate to yourself that the total effect of gender on self-reported delinquency can be "decomposed" into an indirect effect of .125 and a direct effect of .235 for a total effect of .36 (this procedure is called a "decomposition of effects," and is developed further later in this chapter). These results indicate that we can account for more than half of the effect of gender on police contacts ( $.187/.354 = .528$ ) and more than 30 percent of the

effect of gender on self-reported delinquency (.125/.36=.347) with the intervening variables in the elaborated power-control model. This is progress, but still more can and should be done.

### Specifications, Conditions, and Interactions

We have not yet highlighted the more controversial aspects of the theoretical ideas presented in this chapter. Some of this controversy was anticipated earlier when we noted the connection between gender-linked patterns of parental control emphasized in this theory and patriarchal family structures. Power-control theory suggests that the gender-delinquency relationship will be stronger in more patriarchal settings. Variations in patriarchy can be observed across many settings, including families, historical periods, and entire societies. When power-control theory suggests that the relationship between gender and delinquency will be stronger in more patriarchal settings, it is proposing a "specification" of the theory and the "conditions" under which it applies. Specification of the condition(s) under which a theory and its relationships apply involves "interaction effects" in regression analysis.

It is important not to confuse an interaction effect with the operation of an intervening variable. While intervening variables transmit or mediate the effects of other variables, interaction effects identify the conditions under which relationships, including links between intervening variables, operate.

Interaction effects can be extremely interesting and important but also frustrating to study. The specification of conditions under which theories apply is an important mechanism of "growth" in contemporary theory construction. However, the identification of these conditions is often frustrating because conditions change and conditions can have different meanings in different settings. This may be especially true of power relationships that specify the conditions under which power-control theory applies. Bertaux (1982:129) observed that opportunities for scientific studies exist, "when and where power relations have become stabilized, routinized, institutionalized." The problem is that as power relationships change, their effects can prove elusive, unstable, and therefore unreliable.

Interaction effects in regression analysis frequently prove unreliable as they shift in response to the variety of factors that underwrite them. A recent attempt to replicate findings from power-control theory in a suburb of Buffalo, New York (Singer and Levin, 1988), found support for the core of the power-control model introduced earlier but also found differences from the operation of this model across kinds of family power structures identified in Toronto (Hagan, Gillis, and Simpson, 1987). This

can be a source of frustration (Jensen and Thompson, 1990), and Bertaux (1982:129) rightly worried that "a body of thought about social life that aims at becoming scientific is bound to move away from what has always attracted the attention of people: drama, passions, wars, the power game, uncertain struggles." However, there are also good reasons to be more optimistic about the prospects of studying such changes, particularly changes related to processes involved in power-control theory. (see Grasmick et. al., 1996)

Perhaps the most compelling reason to inquire further about such changes is that several historical studies have produced results consistent with expectations of power-control theory that links between gender and crime should vary across social settings. For example, Feeley and Little (1991) have undertaken an exhaustive analysis of criminal cases in London's Old Bailey Court from 1687 to 1912. This analysis revealed that women comprised three to four times the proportion of felony defendants during the first half of the eighteenth century (peaking at more than 40 percent of all defendants) than they have in the twentieth century (when they have accounted for less than 10 percent). The implication of such a finding is that the low contemporary involvement of women in crime may in part be a product of changes that accompanied industrialization in western societies. Although Feeley and Little's research provides the most systematic analysis to date, there are other studies which anticipate and reinforce their conclusions. Phillips (1977) in a study in Victorian England, Sharpe (1984) in an analysis of early modern England, Langbein (1983) in an examination of eighteenth century criminal trials, and Hull (1987) in a consideration of Colonial Massachusetts, all report a substantially greater involvement of women in crime prior to the twentieth century (see also Beattie, 1992). Similarly, a near century-long time series from Toronto (Boritch and Hagan, 1990) between 1859 and 1955 shows a steady and significant decline in arrests of women. It may not commonly be realized that both male and female crime rates declined in most western industrialized nations during the last century and the first part of this century (see Gillis, 1989). However, what is more impressive is that during this same period female criminal involvements declined more dramatically than male involvements, leading to a widening of the gender gap and a strengthening of the gender-criminality relationship that is observed today.

Power-control theory (see Hagan, 1989:154-158) drew on Weber (1947) to consider these changes in terms of the separation of the workplace from the home that occurred during early industrialization. A result of these changes was the separation of what Weber called the production and consumption spheres. The social reproduction of gender roles became an important part of both of these spheres with men largely assigned reproductive functions through the state (involving the

police, courts and correctional agencies) in the production sphere and women largely assigned such functions through the family in the consumption sphere.

Both the state and family are involved in creating, maintaining, and reproducing gender roles, but it is particularly the patriarchal structure of the family that established a "cult of domesticity" around women during industrialization (Welter, 1966), reducing substantially female involvement in activities like crime and delinquency. Power-control theory gives particular attention to a gender division of roles that reproduces this outcome in more patriarchal families through an instrument-object relationship in which fathers and especially mothers (i.e., as instruments of social control) are expected to control their daughters more than their sons (i.e., as objects of social control). Braithwaite (1989:93) incorporated this framework into his broader theory of *Crime, Shame and Reintegration* when he wrote "we predict that females will be more often the objects and the instruments of reintegrative shaming, while males will be more often the objects and instruments of stigmatization."

Feeley and Little (1991:39) echoed this kind of explanation for the historical decline of women in crime from the eighteenth to the twentieth century. They wrote that "in the broadest terms, there was a redefinition of the female, and a shift and perhaps an intensification of private patriarchal control of women within the household." They then brought this line of argument to the following conclusion:

By the end of the nineteenth century, there was a clear separation of home and work, a firmer sexual division of labor, the exclusion of women from the public sphere and from productive work, and the confinement of women to reproductive and domestic work in the home. Our data indicate that there was also a decline in female criminal court involvement during this period.

Feeley and Little were clear in noting that this was a period in which women lost power in the economic sphere of production and at the same time became more involved and subject to domestic social control within the family. They concluded "the trends thus point to possible explanations for our vanishing female defendant."

This study by Feeley and Little and other historical studies noted earlier encourage the expectation of power-control theory that the relationships linking crime and delinquency vary across social settings. As changes occur in gender roles in the family and in work, it is of interest to explore how these changes may alter relationships between gender and crime and delinquency. It has been argued earlier that increasing controls on women during industrialization decreased their involvement in crime. It does *not* by necessity follow that relaxation of such

controls associated with changing gender roles will increase involvement in crime. This would assume a comprehensive kind of symmetrical causation (Lieberson, 1985) that power-control theory does not suggest for reasons elaborated later. However, there may be some minor and common kinds of behavior, such as smoking, that are influenced by the relaxation of controls and the movement away from patriarchal families. To examine this kind of possibility, we turn next to our use of high school survey data, this time to test a power-control theory of smoking.

### Specifying a Power-Control Theory of Smoking

One of the most perplexing problems of recent decades has involved increasing rates of smoking among adolescent girls and increasing rates of lung cancer among women. Krohn et al. (1986:147) reported, "Not only does it appear that more females are smoking on a regular basis . . . but some studies have found an increase in the proportion of heavy smokers among females." Studies fluctuated in their findings and there may be signs that this pattern is levelling out; however, a concern persists about the health implications of increases in smoking among adolescent girls.

Concern is so great about the active and passive effects of smoking that strict new laws are being passed to control smoking behavior. We may even see smoking again criminalized, as it was for some age groups, times, and places in the past. In any case, it is commonly argued that smoking is analogous to forms of crime and delinquency (Hirschi, 1969; Akers, 1984; Gottfredson and Hirschi, 1990). In a social sense, it can be argued that smoking is one of the most common forms of delinquency, a kind of "common delinquency" that power-control theory was originally intended to explain (Hagan, Gillis, and Simpson, 1985).

Smoking is a form of deviant behavior where women today overall have a rough parity with men. This is reflected in a survey undertaken in 1989 of adolescents in a wealthy section of Toronto called Forest Hill (Hagan, Gillis, and Simpson, 1990). Slightly more than 20 percent of males and females in this setting smoked, as indicated in Table 2.7.

Historically, power-control theory suggests that this parity in smoking is linked to the increasing freedom and power experienced by mothers and daughters in the family, which may be most apparent in affluent communities like Forest Hill (Coser, 1985). If this is the case, it may be possible to treat differences in power relationships within the families of this community as analogues to more general changes in family power relationships over time.

A measure of marital power in Forest Hill asked who decides where to live, where to go on vacation, whether both spouses should work, and whether to move if the husband gets a job in another city. The item with

**Table 2.7** Cross-tabulation of Gender and Self-Reported Smoking

Self-Reported Smoking	No	Yes	N
Female	77.5(110)	22.5(32)	142
Male	76.5(104)	23.5(32)	136

Source: Data from John Hagan, A. R. Gillis, and John Simpson, 1990, "Clarifying and Extending Power-Control Theory," *American Journal of Sociology*, vol. 95, pp. 1024-37.

greatest variance in responses in the scale indicated that while a majority (58 percent) of the wives decided alone whether to work, a large remaining proportion decided this issue with their husbands. The sample was split roughly in half on the basis of their scale scores into more- and less-patriarchal families. The sample is divided in this way in Table 2.8, and gender and smoking are again cross-classified as they were in Table 2.7.

Recall that earlier when we used this procedure to test for an intervening relationship, we observed a reduction in the percentage differences in the sub-tables. However, when we compare the percentaged results in Table 2.7 with those in Tables 2.8, we observe something different. While there is only a 1 percent difference by gender in smoking in Table 2.7, more notable percentage differences appear in Table 2.8, and the differences are in opposite directions: sons are more likely than daughters to smoke in more patriarchal families (24.6 percent versus 16.0 percent), while daughters are more likely than sons to smoke in less patriarchal families (29.9 percent versus 22.5 percent). The increase in female smoking in less patriarchal families is pronounced, nearly doubling from 16 percent to almost 30 percent.

The pattern of percentage differences is a form of interaction effect often called "suppression." It suggests that there is a relationship between gender and smoking that is suppressed in Table 2.7, which becomes apparent in Table 2.8 when differences in parental power relationships (i.e., patriarchal relationships) are taken into account.

Thus far we have used a crude measure of smoking: whether the respondents report any smoking behavior at all. You will recall that limitations of sample size and technique restrict the number of categories and variables we can use in tabular analysis. Regression analysis can take advantage of more detailed information on the number of cigarettes smoked. One way we can take advantage of the more detailed information is to construct an "interaction term" by multiplying the involved variables, gender and patriarchy. The form of the resulting regression equation is:

$$y = a + b_1x_1 + b_2x_2 + b_1x_1b_2x_2 + u,$$

**Table 2.8** Cross-tabulation of Gender and Smoking by Type of Family

Type of Family	More Patriarchal		Less Patriarchal		N
	No	Yes	No	Yes	
Self-Reported Smoking					
Gender					
Female	84.0(63)	16.0(12)	70.1(47)	29.9(20)	67
Male	75.4(49)	24.6(16)	77.5(55)	22.5(16)	71

Source: Data from John Hagan, A. R. Gillis, and John Simpson, 1990, "Clarifying and Extending Power-Control Theory," *American Journal of Sociology*, vol. 95, pp. 1024-37.

where  $y$  is the number of cigarettes smoked,  $x_1$  is gender,  $x_2$  is patriarchy, and  $x_1x_2$  is the interaction of these variables.

In estimating this regression equation, daughters and less patriarchal families are coded 1, so that the product interaction term assumes a value of 1 for those subjects who are female and from less patriarchal families. The results of estimating this regression can be presented as follows with the unstandardized coefficients assuming their positions in the equation:

$$y = 1.891 + (-1.064)x_1 + (-.648)x_2 + (2.0)x_1x_2 + u.$$

The coefficient for the product interaction term (2.0) has a  $t$ -value of 2.577, which would occur by chance fluctuation in sampling less than 1 out of 100 times. By letting smoking in a regression equation assume the continuous value of the number of cigarettes smoked a day, we are able to more convincingly demonstrate that an interaction effect is operating.

However, not only the relationship between gender and smoking may be affected by the conditioning influence of family structure but also the intervening variables in the power-control model may be affected. To explore this possibility we employ an elaboration of regression techniques called LISREL, or the Linear Structural Relationships Model (Joreskog and Sorbom, 1984). It is not necessary or appropriate to discuss this statistical modeling program in detail here. We can simply note that it allows researchers to use multiple measures or indicators of concepts that are treated as unobserved. That is, this statistical modeling program allows us to test and improve the measurement of our concepts with multiple measures (beyond simply adding the measures), while also acknowledging that there is always a gap between theoretical concepts and actual measurements of them. As we will see next, the paths in a structural LISREL model can be interpreted in the same fashion as the path model previously noted.

The results of this more elaborate path model are presented in Figure 2.6. With the exception of gender, which is indicated only by reported sex, the other concepts in this model are measured with 2 indicators each. Instead of these indicators being summed, as they sometimes were earlier, LISREL treats each indicator as a distinct entity. In addition, a concept is added to this model, maternal relational control, which is measured by student's reports that they talk with their mothers about their thoughts and feelings and that they want to be the kind of person their mother is. These relationships are assumed to be formed early in life and to therefore precede maternal instrumental controls, which are now measured with reports of not only whether mothers are perceived to know where their children are but also whether they know who their children are with. Finally, smoking behavior is measured in

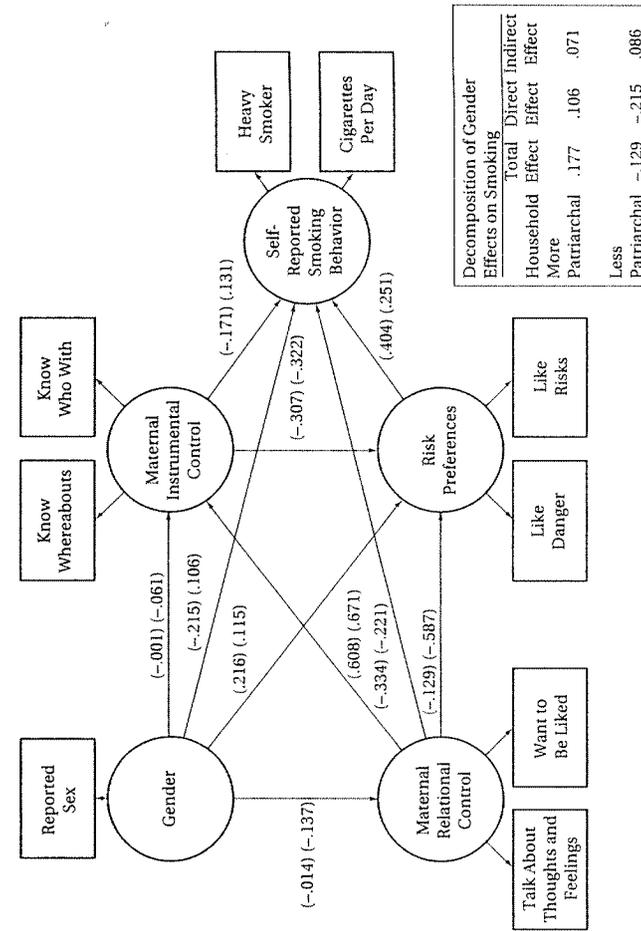


Figure 2.6 A Power-Control Model of Teenage Smoking

Source: John Hagan

terms of whether the students report heavy smoking (seven or more cigarettes a day) and in the terms of the actual number of cigarettes smoked on average per day.

As earlier, the sample is divided into two groups of students from more and less patriarchal families. Path coefficients for students from less patriarchal families are placed first on the diagram and followed by those for students from more patriarchal families. A summary of total, direct and indirect effects is also presented in the accompanying lower right hand box in Figure 2.6.

The total effects indicate (as in the tabular analysis presented earlier) that boys smoke more than girls in more patriarchal families, while girls smoke more than boys in less patriarchal families. Using the properties of Wright's theorem of path analysis we can see that much of the total effect that results in boys smoking more than girls in more patriarchal families is a direct effect of gender. However, a substantial part of the total effect is also a result of sons in these families being more inclined to take risks than daughters [(0.115)(0.251)], as well as these sons being less controlled than daughters by their mothers [(-0.137)(-0.587)(0.251) + (-0.137)(-0.221)].

In less patriarchal families some of the tendency of daughters to smoke more than sons is suppressed by the tendency of daughters to still be less inclined to take risks [(0.216)(0.404)]. When this counteracting tendency is taken into account, the direct effect of gender on smoking is larger than previously apparent: -0.215. Meanwhile, there is little opportunity for maternal relational or instrumental controls to reduce the smoking of daughters, since in these less-patriarchal families the links between gender and these controls are minuscule, indicating that in terms of maternal control daughters are treated much like sons in these families.

So power-control theory anticipates interesting gender differences in smoking behavior in the more- and less-patriarchal families of wealthy Toronto high school students. In addition, the emphasis of this theory on links between gender and maternal controls and attitudes toward risk-taking explains some of the tendency of sons to smoke more than girls in the more-patriarchal of these families. The specification of the theory in terms of family structure also directs us to a different pattern of linkages in less-patriarchal families, which indicates that daughters, like sons, can gain freedom to become involved in smoking in these families. However, a continuing difference between sons and daughters in terms of attitudes toward risk taking reduces what might otherwise be a greater tendency of daughters in these families to smoke. This application of power-control theory would probably be of further value if it included measures of perceptions of the risks of smoking per se. It would also be relevant to have measures of perceived "benefits" of smoking, such as weight loss and weight control. Pressures involved in

dieting may be of special importance to adolescent girls. Unfortunately, these measures are not available in the data set and must await further research.

### Liberation, Patriarchy, and Delinquency

We turn finally to an issue that has caused confusion in interpretations of power-control theory. At least one critic (Naffine, 1987) interpreted this theory as suggesting that the *ideas* of the women's liberation movement will lead to increased criminality among women. This is not the point of this theory, but consideration of this interpretation does suggest another interesting possibility. This is, that *unliberated*, patriarchal attitudes may play a role in explaining some *male* delinquency.

While it is unlikely that identification with egalitarian sex role attitudes (e.g., the sharing of power in the family and in occupational roles) causes delinquent behavior, it may be that more-patriarchal attitudes do directly and indirectly cause some delinquency (e.g., violence) and help further to explain the tendency for males to exceed females in delinquency. We pursue this last possibility to illustrate a procedure often used in regression analysis called "the decomposition of effects." This procedure was partially introduced earlier in this chapter and now can be demonstrated more fully.

This demonstration again uses data drawn from a 1988 survey of Toronto high school students, in this case students from the more general population. These students were asked about their agreement/disagreement with the following sex role attitude statements:

- A man can make long-range plans for his life, but a woman has to take things as they come.
- Men should share the work around the house with women such as doing dishes, cleaning, and so forth.
- A woman should have exactly the same job opportunities as a man.

Student agreement/disagreement with these statements was ordered so that when summed student scores ranged from less- to more-patriarchal in orientation. These scores were then included with measures like those introduced above in a regression analysis of self-reported assaultive behavior. This behavior was indicated by answers to an item that asked how often the students had "beaten up someone on purpose?"

The resulting regression decomposes the effects of gender, patriarchal attitudes, and other power-control variables on self-reported assaultive behavior by estimating five equations. Each equation adds

another variable in sequence from gender, through maternal relational control, maternal instrumental control, patriarchal attitudes, to risk preferences. The results are presented in Table 2.9.

As each equation adds a variable that intervenes between gender and assaultive behavior, the effect of gender declines by the amount (of the gender effect) that the intervening variable transmits. Note that patriarchal attitudes (.5 - .365 = .135) transmit the largest intervening effect but that maternal instrumental control (.625 - .5 = .125) and risk preferences (.365 - .291 = .074) also play notable mediating roles. Overall, these three variables account for more than half of the tendency for boys to exceed girls in their involvement in assaultive behavior (.334/.632 = .528). Patriarchal attitudes do not have a strong impact on assaultive behavior in this model: the standardized effect is .131 before the introduction of risk preferences, and .102 after. Nonetheless, these attitudes play a notable intervening role, and a net direct effect remains even when all other variables are included in the model. There is therefore further evidence that can be incorporated within a power-control model, which assumes that patriarchy plays a causally significant role in the causation of male delinquency.

### Conclusions

This chapter is an introduction to issues of causality that form a central part of a social science of crime. In the chapters that follow, principles and techniques introduced in this chapter are developed further in relation to several controversies that focus on criminological research. Each of these chapters is concerned with issues of causation, and the logic and methods introduced form a basis for most causal arguments you will encounter not only in these chapters, but as well in the larger criminological literature that this book makes accessible to you.

One way to place in perspective much of what we have considered to this point is to compare our presentation with past introductions to the methods of our field. These introductions also have been concerned with issues of causation. They characteristically suggest that to demonstrate causation it is necessary to establish that the variables considered are associated (i.e., that they are related or covary), that there is an identifiable sequence to the association (i.e., that the cause precedes the effect), and that the association is nonspurious. The last criterion is the familiar reminder that correlation does not mean causation and typically involves a demonstration that an alleged causal relationship between variables does not disappear when added relevant variables that precede the correlated variables are taken into account.

**Table 2.9** Decomposition of the Effects of Power-Control Variables and Patriarchal Attitudes on Self-Reported Assaultive Behavior

Variable	Eq.1	Eq.2	Eq.3	Eq.4	Eq.5
Gender	b(se) .632(.112)	.625(.109)	.500(.112)	.365(.119)	.291(.116)
	B .232	.230	.183	.134	.107
Maternal Instrumental Control	b(se) -	-.167(.734)	-.120(.036)	-.108(.036)	-.099(.035)
	B -	-.200	-.136	-.126	-.116
Patriarchal Attitudes	b(se) -	-.200	-.136	.071(.023)	.055(.023)
	B -	-.200	-.136	.131	.102
Risk Preferences	b(se) -	-.200	-.136	.071(.023)	.055(.023)
	B -	-.200	-.136	.131	.102
Intercept	.403	1.250	1.951	1.549	.214
R <sup>2</sup>	.054	.092	.120	.134	.184

A classic spurious correlation involves the relationship between storks and human fertility in northern Europe. Fertility is apparently higher in some regions of northern Europe where storks are more common. The explanation of this correlation is that fertility is higher in rural areas of these nations where storks also happen to flourish. So the "real" causal association is between rural location and fertility.

Although we have emphasized the importance of association and sequence in this chapter, we have not focused on spuriousness. Rather, we have emphasized the role of intervening variables in mediating/transmitting/interpreting and therefore in accounting for causal effects. We have done so because we believe these intervening processes are more common and more important than issues of spuriousness in criminological analysis. Most correlates of crime have real causal effects, but the mechanisms by which these effects operate often are unclear. This is often the case in the social sciences. For example, few people would believe that storks cause fertility, while the interesting causal issues have to do with intervening variables that mediate the causal influence of rural residence on fertility (i.e., do farmers have more time for sex? Do they need children to help farm?).

We also have given considerable attention to interaction effects that specify conditions under which relationships hold and/or are modified. We have noted that these effects can be unstable, often varying across time and place. This instability makes interaction effects interesting, but often frustrating to study. A controversial interaction we have observed in this chapter involves variation in the relationship between gender, smoking, and perhaps other forms of common delinquency among adolescents in more- and less-patriarchal families. We are less concerned here with the reliability of these findings than with the exposition of the methods involved in their investigation. The interactions explored derive from a power-control theory that these methods help to make explicit and to test. This brings us to our final point: perhaps the most important attraction of the application of scientific methods in the study of crime is that these methods encourage us to articulate our ideas in clear and testable ways.

# 3

## Urbanization, Sociohistorical Context, and Crime

A. R. Gillis

It is my belief, Watson, founded upon my experience, that the lowest and vilest alleys of London do not present a more dreadful record of sin than does the smiling and beautiful countryside.

Sir Arthur Conan Doyle (1856–1930), in *Copper Beeches*

The Chicago School of sociology emerged on the 1920s and 1930s in the works of Burgess, McKenzie, Park, Wirth, and Shaw and McKay, among others, and provided an explanation of the relationship between urban disorganization and crime for several generations of American sociologists. However, one of the knocks against the Chicago School is that the research that they did in that city in the 1920s and 1930s was in fact bound by time and space but represented as universal nevertheless (see, for example, Sjoberg, 1970). Apart from underestimating the contribution of context to cause, overgeneralization adds undeserved credibility to arguments and imparts an aura of inevitability to situations that can in fact be changed. Since most social scientific research is done on America by Americans, overgeneralization amounts to applying theories of the present-day American situation to other places and periods. This can annoy historians, social scientists, and the people who live in these places, and this can confuse U.S. tourists who expect Paris, London, or even Toronto to be the same as metropolitan areas in the U.S. Such social scientific ethnocentrism can also blind U.S. researchers and policy makers to realistic alternatives to American patterns.

Part of the problem originates with the need of sociologists to generalize. Social scientists are supposed to generalize. It's our job. Moving beyond particular concrete cases to more abstract and universal levels enables us to build a broad body of knowledge (see, for example, Berelson and Steiner, 1964). This distinguishes us from historians and other disciplines in the Arts, where an emphasis on unique events and detailed description of populations and periods inhibits the development of more abstract theory and its application elsewhere (see Kiser and Hechter, 1991).

In one respect social scientists are very careful about generalizing. We typically exercise a great deal of scientific rigor in drawing samples and generalizing back to the populations from which they are drawn.