

Appendix C

How to Read a Research Article

The discussions of research articles throughout the text may provide all the guidance you need to read and critique research on your own. But reading about an article in bits and pieces in order to learn about particular methodologies is not quite the same as reading an article in its entirety in order to learn what the research discovered. The goal of this appendix is to walk you through an entire research article, answering the review questions introduced in Appendix B. Of course, this is only one article, and our “walk” will take different turns from one taken by a review of other articles, but after this review you should feel more confident when reading other research articles on your own.

For this example, we will use an article by Alarid, Burton, and Cullen (2000) on gender and crime among felony offenders (reprinted in this volume on pp. C-8–C-31). It focuses on a topic important to explaining the similarities and differences between male and female offending patterns as well as to questions of the generalizability of central criminological theoretical perspectives. Moreover, the article is published in a reputable criminological journal, the *Journal of Research in Crime and Delinquency*, indicating the article makes an important contribution to what is known about the etiology of criminal offending across gender groups.

We have reproduced below each of the article review questions from Appendix B, followed by our answers to them. After each question, we indicate the article page or pages that we are referring to. You can also follow our review by reading through the article itself and noting our comments.

1. *What is the basic research question or problem? Try to state it in just one sentence.* (Chapter 2)

The clearest statement of the research question actually consists of two questions: “[Can] social control and differential association theories . . . help account for participation in crime among young adult male and female felons?” (p. 174 in the original article). Prior to this point, the authors focus on the research problem, describing the limitations of past research and why exploring social control and differential association theories across gender groups among felony offenders is important.

2. *Is the purpose of the study explanatory, evaluative, exploratory, or descriptive? Did the study have more than one purpose?* (Chapter 1)

This study is exploratory in nature. The literature review (pp. 171–174) makes it clear that the primary purpose of this research is exploratory since new ground is being covered based on the limitations of past research. In addition, the problem statement indicates the exploratory character of the study: It “attempts to test the generality of social control and differential association theories to a population that has been infrequently studied” (p. 173).

3. *Was the theoretical framework presented? What was it? Did it seem appropriate for the research question addressed? Can you think of a different theoretical perspective that might have been used?* (Chapter 2)

This study uses two theoretical perspectives, “social control” and “differential association.” This framework is very appropriate for the research questions addressed because this study explores the applicability of these theories to adult populations and their generalizability across gender groups. Because the research question focuses specifically on the applicability and generalizability of these specific theoretical perspectives, no other theoretical framework would be applicable.

4. *What prior literature was reviewed? Was it relevant to the research problem? To the theoretical framework? Does the literature review appear to be adequate? Are you aware of (or can you locate) any important omitted studies?* (Chapter 2)

Literature is reviewed from the article’s first page until the “method” section (pp. 171–174). All the literature seems relevant to the particular problem as well as the general theoretical framework. The first few paragraphs generalize the findings of several studies that measures of both theories are related to criminal involvement (pp. 171–172). The authors then discuss the limited focus of previous studies and their rationale for selecting social control and differential association as their focus for this study (pp. 172–174). We leave it to you to find out whether any important studies were omitted.

5. *How well did the study live up to the guidelines for science? Do you need additional information in any areas to evaluate the study? To replicate it?* (Chapter 2)

It would be best to return to this question after reading the whole article. The study clearly involves a test of ideas against empirical reality to the extent that reality could be measured; it was carried out systematically and disclosed, as far as we can tell. Because the authors used a sample of newly incarcerated felons, it may be difficult for others to replicate the authors’ findings. Drawing from previous research, the authors make some general assumptions about what factors best measure social control and differential association (p. 177). However, in previous studies, those factors measuring social control and differential association have been applied primarily to juvenile populations (p. 172). Intuitively, the same measures or indicators may not be applicable to adult populations (e.g., parental attachment and peer attachment), but we have no empirical evidence of this. The authors also assume respondents’ reports of past criminal behavior are valid (pp. 177–178). It appears these are reasonable assumptions, but they are unproved assumptions that could be challenged. This is not in itself a criticism of the research, since some assumptions must be made in any study. The authors specified the meaning of key terms, as required in scientific research. The authors did search for regularities or patterns in their data, thus living up to another guideline. A skeptical stance toward current knowledge is apparent in the literature review and in the authors’ claim that “social control and differential association theory appear to have general effects” on young adult felons and across gender groups (pp. 189–190). They encourage

the development of new theories but emphasize the importance of “older” theoretical perspectives and their application to underresearched topics (p. 192). The study thus seems to exemplify adherence to basic scientific guidelines and to be very replicable.

6. *Did the study seem consistent with current ethical standards? Were any trade-offs made between different ethical guidelines? Was an appropriate balance struck between adherence to ethical standards and use of the most rigorous scientific practices?* (Chapter 2)

To the best of our knowledge, the study was consistent with current ethical standards. “All data were collected directly from the participants themselves” (p. 175). In accordance with the ASA code of ethics, participation in the study was voluntary, and the participants gave their informed consent to participate. The reporting seems honest and open. The original survey used by the authors is not likely to have violated any ethical guidelines concerning the treatment of human subjects, although it would be necessary to inspect the survey instrument itself to evaluate this.

7. *What were the major concepts in the research? How, and how clearly, were they defined? Were some concepts treated as unidimensional that you think might best be thought of as multidimensional?* (Chapter 3)

There are two key concepts in this study, social control and differential association. These concepts are the focus of the study and are discussed at length. These concepts, however, were not defined so that a layperson would understand what these concepts mean.

8. *Were any hypotheses stated? Were these hypotheses justified adequately in terms of the theoretical framework? In terms of prior research?* (Chapter 2)

Three hypotheses are stated, although they are labeled as theoretical predictions, which are derived from previous research (p. 173). The first hypothesis is that social control will account for variation in offending across gender groups. The second hypothesis is that differential association will account for variation in offending across gender groups. Finally, the third hypothesis is that the effect of the competing theory will be spurious.

9. *What were the independent and dependent variables in the hypothesis(es)? Did these variables reflect the theoretical concepts as intended? What direction of association was hypothesized? Were any other variables identified as potentially important?* (Chapter 2)

The dependent variable for this study is past criminal activity. For purposes of analysis, past criminal behavior is divided into three subscales resulting in four dependent variables: general crime (the total of all criminal activities), violent crime, property crime, and drug crime (p. 177). There are eight independent variables included in this study. The independent variables for the first hypothesis include five social control indicators. These include marital/ partner attachment (0 = not married/unattached and 1 = married/attached), attachment to parents (a three-item composite index, higher values represent stronger attachment), attachment to friends (a two-item index, higher values represent stronger attachment), involvement in conventional activities (a two-item index measuring how much free time individual has, higher values represent more free time), and moral belief in the law (measured by a two-item index with higher values representing stronger belief) (pp. 178–180).

The independent variables for the second hypothesis include three indicators of differential association. These include individual definitions toward crime (a five-item index, higher values represent greater tolerance of criminal behavior), others’ definitions toward crime (a three-item index, higher values represent greater association with individuals who hold

favorable definition toward violating the law), and criminal friends (continuous variable indicating the number of close friends who have broken the law) (pp. 180–182).

Can you identify the variables in the final hypothesis?

10. *Did the instruments used—the measures of the variables—seem valid and reliable? How did the author attempt to establish this? Could any more have been done in the study to establish measurement validity?* (Chapter 3)

The measurement of the dependent variable was straightforward. The authors report the scale used has been identified as a valid and reliable self-report assessment of antisocial behavior (p. 176). In addition, reliability was assessed using Cronbach’s alpha method, which indicated the general scale and the subscales are a reliable measure of criminal behavior. The measurement of the independent variables was also straightforward. The authors report the scales used have been identified as valid measures of social control and differential association indicators. In addition, Cronbach’s alpha reliability testing shows the measures are reliable.

11. *What were the units of analysis? Were they appropriate for the research question? If some groups were the units of analysis, were any statements made at any point that are open to the ecological fallacy? If individuals were the units of analysis, were any statements made at any point that suggest reductionist reasoning?* (Chapter 4)

The authors sampled young adult, first-time felony offenders sentenced to a residential court-ordered boot camp program. The units of analysis are appropriate for the research question. No statements were made at any point that suggest reductionist reasoning.

12. *Was the study design cross-sectional or longitudinal, or did it use both types of data? If the design was longitudinal, what type of longitudinal design was it? Could the longitudinal design have been improved in any way, as by collecting panel data rather than trend data, or by decreasing the dropout rate in a panel design? If cross-sectional data were used, could the research question have been addressed more effectively with the longitudinal data?* (Chapter 5)

The survey was cross-sectional. The research question could have been addressed more effectively with longitudinal data that followed people from childhood into adulthood, since many of the authors’ interpretations reflect their interest in how individuals’ past experiences shape their propensity for criminal behavior.

13. *Were any causal assertions made or implied in the hypotheses or in subsequent discussion? What approach was used to demonstrate the existence of causal effects? Were all three criteria for establishing causal relationships addressed? What, if any, variables were controlled in the analysis to reduce the risk of spurious relationships? Should any other variables have been measured and controlled? How satisfied are you with the internal validity of the conclusions?* (Chapter 5)

The explanatory hypotheses indicate that the authors were concerned with causality. However, the lack of previous research on their chosen population suggests an exploratory approach to causality. In order to reduce the risk of spuriousness in the presumed causal relationships, three control variables were included in the analysis: age, race/ethnicity, and gender (p. 188); these variables have been shown to be strongly related to criminal activity. There are other variables that might have created a spurious relationship, but at least several of the most likely contenders have been controlled. For example, some of the differences in social control and differential association measures may be due to social class—that is, individuals who were raised in more affluent families are more likely to have had greater social control in their lives and less

opportunity to be involved with individuals who favor, or at least justify, criminal behavior. Income has also been shown to be negatively related to criminal activity—that is, the higher an individual’s income, the less likely he or she is to engage in criminal activity.

14. *Was a sample or the entire population of elements used in the study? What type of sample was selected? Was a probability sampling method used? Did the authors think the sample was generally representative of the population from which it was drawn? Do you? How would you evaluate the likely generalizability of the findings to other populations?* (Chapter 4)

The sample was a nonrandom (nonprobability) sample of young, first-time felony offenders. A purposive sampling technique was used when sampling women, the authors “focused [their] efforts on obtaining responses from the entire [female] population . . . in the program over a 15-month period” (p. 175). The authors did not focus on sampling the entire male population; therefore, the authors obtained an availability sample of males sentenced to the program over the same time period. The authors admit the sample is not representative of “felony crimes committed by men and women in prison, [but] closely resembles first-time felony offenders in other shock incarceration programs as an alternative to jail or prison incarceration” (p. 176). Do you believe the authors can generalize their findings to similar populations? Why or why not?

15. *Was the response rate or participation rate reported? Does it appear likely that those who did not respond or participate were markedly different from those who did participate? Why or why not? Did the author(s) adequately discuss this issue?* (Chapters 4, 6)

The response rate was reported. The authors obtained responses from 122 of 124 (or 98.4%) female offenders and 1,031 (or 85.9%) of male offenders (p. 175). With the exception of female offenders, the authors did not discuss differences among those who did and did not participate in the study. Of the two female offenders who did not participate in the study, one did not speak English and the other woman escaped from the facility (p. 175). In general, it is reasonable to believe those who did not participate in the study were not markedly different from those who did participate. The large sample of males and females obtained for this study should have provided good variability.

16. *Was an experimental, survey, participant observation, or some other research design used? How well was this design suited to the research question posed and the specific hypotheses tested, if any? Why do you suppose the author(s) chose this particular design? How was the design modified in response to research constraints? How was it modified in order to take advantage of research opportunities?* (Chapters 5–9)

Survey research was the method of choice and probably was used for this article because it provided the most cost-effective means of gathering data. Survey research seems appropriate for the research questions posed.

17. *Was an evaluation research design used? Which type was it? What was the primary purpose of the evaluation?* (Chapter 9)

This study did not use any type of evaluation research.

18. *Were multiple methods used? Were findings obtained with different methods complementary?* (Chapter 8)

This study used only survey methods.

19. *Was any attention given to social context? To biological processes? If so, what did this add? If not, would it have improved the study? Explain.* (Chapter 5)

Social context is given attention in this study on an individual level. The majority of social control and differential association indicators are measures of social conditions and experiences of the respondents. However, no attention is given to the potential importance of larger social contexts, such as neighborhood or region of the country. Biological factors that may increase the propensity for criminality are not considered in this study.

20. *Summarize the findings. How clearly were statistical and/or qualitative data presented and discussed? Were the results substantively important?* (Chapters 7, 10)

Statistical data are presented clearly using descriptive statistics, examination of bivariate relationships, and multiple regression analysis (a multivariate statistical technique) that highlight the most central findings. No qualitative data are presented. The findings seem substantively important, since they identify social control and differential association theories that can be applied to adult populations across gender groups (pp. 184–188).

21. *Did the author(s) adequately represent the findings in the discussion and/or conclusion sections? Were conclusions well grounded in the findings? Are any other interpretations possible?* (Chapter 11)

The findings are well represented in the discussion and conclusion section (pp. 188–192). The authors point out in their literature review that the focus for testing social control and differential association theories data is often limited to juvenile delinquent populations and frequently fails to consider possible differences between males and females. The findings suggest these theoretical perspectives can be applied to adult criminal populations and are important in explaining variation in criminal behavior across gender groups. You might want to consider what other interpretations of the findings might be possible. Remember that other interpretations are always possible for particular findings—it is a question of the weight of the evidence, the persuasiveness of the theory used, and the consistency of the findings with other research.

22. *Compare the study to others addressing the same research question. Did the study yield additional insights? In what ways was the study design more or less adequate than the design of previous research?* (Chapters 2, 11)

This study investigated the relationship between social control and differential association on a population that had not previously received much attention (young adult felony offenders). This helped the authors to gain additional insights into the influence of social control and differential association on young adults across gender groups.

23. *What additional research questions and hypotheses are suggested by the study's results? What light did the study shed on the theoretical framework used? On social policy questions?* (Chapters 2, 11)

The authors suggest no additional research questions or hypotheses. However, the study does shed light on the importance of “traditional” theoretical perspectives in explaining variation in criminal behavior among adults across gender groups. The authors note the importance of new theoretical paradigms but emphasize “that the value of ‘older’ theoretical perspectives should be remembered and . . . applied to under-researched topics” (p. 192).

Gender and Crime Among Felony Offenders

Assessing the Generality of Social Control and Differential Association Theories

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Although often tested empirically on high school samples, differential association and social control theories have only infrequently been used to explain offending by felons. Based on a sample of 1,153 newly incarcerated felons, the authors examine the ability of differential association and social control theories to explain self-reported offending across types of crime and gender groups. Overall, the analyses lend support to both perspectives and suggest that they are “general” theories of crime. It also appears, however, that differential association theory has more consistent effects, especially for men. Parental attachment is a significantly stronger predictor of female than male participation in violent crime. These results indicate that future studies of criminal behavior risk being misspecified if they do not include measures of these “traditional” theories of crime.

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Since the 1969 publication of Hirschi's *Causes of Delinquency*, social control or control theory and differential association or "cultural deviance" theory have competed vigorously against one another for the status of the preeminent microlevel sociological theory of crime (see also Kornhauser 1978). Even today, spirited exchanges occur in which the logical and empirical adequacy of the theories is debated (see Akers 1996, 1998; Costello 1997; Hirschi 1996; Matsueda 1988, 1997). These paradigms continue to guide research (see, e.g., Akers 1998; Sampson and Laub 1993) not only because of their theoretical parsimony and elegance but also because they accrue a measure of empirical support (Akers 1996; Krohn 1995).

Although noteworthy exceptions exist, most of the tests of social control and differential association theory have been conducted using self-report surveys on juveniles. Particularly instructive are empirical studies in which measures of both theories have been incorporated in the analysis. In general, this research suggests that measures of both theories are related to delinquent or adult criminal involvement, although in some studies, the strength of the differential association variables is greater (Benda 1994; Conger 1976; Kandel and Davies 1991; Macdonald 1989; Matsueda 1982; Matsueda and Heimer 1987; McGee 1992; see also Akers 1998; Burton 1991; Krohn 1995).

A key concern, however, is the generality of social control and differential association theories. These perspectives typically have been seen as having the ability to explain various forms of crime for all people (see, e.g., Akers 1998; Hirschi 1969; Sampson and Laub 1993; Sutherland and Cressey 1955). Clearly, the theoretical power of each of these perspectives hinges on their ability to achieve the status of a general theory. Accordingly, a central empirical and thus theoretical issue is whether social control and differential association theories can explain criminal behavior that extends beyond the delinquency found among community samples of youth.

There have been studies conducted on adult samples that have found support for differential association/social learning theory (Akers 1998; Akers and LaGreca 1988, 1991; Akers et al. 1989; Boeringer, Shehan, and Akers 1991; Dull 1983; Orcutt 1987; Tittle, Burke, and Jackson 1986). Research on social control theory with adult samples also suggests that adult social bonds may reduce criminal behavior (Horney, Osgood, and Marshall 1995; Lasley 1988; Sampson and Laub 1993). Even so, the empirical literature assessing whether social control and differential association theories can explain adult criminal behavior remains limited, especially when one searches for studies that include in their analyses measures of both theoretical perspectives.¹ Among the few adult studies testing social control versus differential association theory, the results show mixed support for both perspectives. Thus, two studies using community samples of adults found stronger support for differential association theory (Burton 1991; Macdonald 1989), while another study revealed that social control theory was better able to account for variation in arrests for men and women drug offenders (Covington 1985).

Even with this research, however, there are typically two limitations. First, especially with adult samples, studies often do not explore whether the effects of variables measuring traditional criminological theories vary by gender. Traditional theories have been criticized for their perceived inability to explain female criminality (Adler 1975; Daly and Chesney-Lind 1988; Leonard 1982) and for ignoring how gender-related factors—such as patriarchal power relations—differentially shape the involvement of gender groups in crime (Heidensohn 1985; Messerschmidt 1993) and victimization (Chesney-Lind and Sheldon 1992). In turn, it is argued that scholars should formulate separate or different theories of crime for women (Leonard 1982; Messerschmidt 1993; Naffine and Gale 1989; Smart 1976).

Second, tests of social control and differential association theory have only infrequently been conducted on samples that include a high base rate of serious offending. As a result, we have only limited information on whether these theories explain more than relatively minor forms of criminal involvement. As Messner and Rosenfeld (1994: 47) note, this "neglect of serious offending by contemporary criminologists" means that it is necessary to employ "other ways of obtaining information from people who commit serious crimes (e.g., they can be interviewed in prison)." Although still not widespread,

criminologists increasingly are undertaking tests of criminological theories that employ serious offenders interviewed in prison or in the community (see Covington 1985; Horney and Marshall 1992; Horney et al. 1995; Longshore, Turner, and Stein 1996; Sampson and Laub 1990, 1993).

Among this body of research on samples of adult offenders, however, research testing social control and differential association theories is rare; research that conducts such studies by gender is virtually nonexistent. The only known exception is Covington's (1985) study of adult heroin addicts in which an attempt is made to explain self-reported total arrests and arrests for property crimes. Covington's analysis revealed that measures of social control were better predictors of women's criminal involvement in property crime and in both men's and women's involvement in overall offending behaviors; differential association measures, however, were able to explain men's property arrests.²

In light of the status of the existing research, the current study attempts to test the generality of social control and differential association theories to a population that has been infrequently studied: young adult felons drawn from the inner city. Social control and differential association theories were selected because they have been found, among existing sociological theories, to have the most consistent empirical support in studies of juveniles.³ Social control theory is also used to explain adult crime in recent important studies (Horney et al. 1995; Sampson and Laub 1993). These theories both predict that their effects will be general—that is, they will account for variation in offending and that this effect will hold for males and females.

These theories also predict that the effects of the competing theory will be spurious (Hirschi 1969). The spuriousness issue is important because most tests with adults have not included measures of both theories (e.g., Horney et al. 1995; Sampson and Laub 1993). As such, findings from previous theoretical tests could be misspecified if the effects of differential association variables account for the findings of social control variables.

Based on previous research on community samples of adults and juveniles that have used both sets of measures, we would anticipate that both variables will have effects. Like members of the community, offenders can be expected to vary in their levels of social control (Horney et al. 1995; Sampson and Laub 1993). We can also expect variation in differential associations and crime-related attitudes. Still, given the lack of previous research testing these theories with a population of offenders extensively involved in crime, the relationship of the theories to criminal involvement remains to be empirically determined.

Thus, the purpose of this article is to test the generality of social control and differential association theories with a sample of young adult felons drawn from the inner city. The study also has the advantage of including males and females. Using a self-report survey, the study examines both overall offending and involvement in specific forms of criminal conduct. By testing the two theories against each other, the central focus will be to discern which theory—if not both theories—can explain variation in offending among young adult men and women felony offenders from an urban area. That is, are social control and differential association theories mainly explanations of juvenile delinquency, or can they help account for participation in crime among young adult male and female felons?



2Method

The procedures used to test differential association and social control theory with 1,153 felony women and men in a community corrections program have been organized into four categories: (1) data collection, (2) sample characteristics, (3) dependent variables, and (4) independent variables.

Data Collection

Data for this study were gathered from felons sentenced to a residential court-ordered boot camp program in Harris County, Texas, which includes the Houston metropolitan area. The boot camp program was designed for a 17- to 25-year-old male or female adult who had been convicted as a first-time felon and had been sentenced to prison. Offenders were considered for the program by judges as a “last stop before prison.” The type of convicted offender (violent, property, or drug) in this program was thus a reflection of judicial discretion.

The three-month coed program emphasized discipline, physical labor, and drills and offered GED education, life skills, and drug awareness classes. The program housed a maximum capacity of 30 women in one smaller barrack and approximately 240 men in five program barracks, with a sixth housing barrack available for incoming “new boots.” Up to 48 men entered the program as a cohort, were housed in the same barracks, and graduated together three months later. Since only about 2 women entered the program every week, there were no distinct female cohorts. Rather, female “new boots” were mixed with more senior women offenders, and the barracks never filled to capacity during the data collection period. For both women and men, the residential stay in the boot camp program was an alternative to jail or prison incarceration. The program was followed by a two-year period of intensive supervision probation in the community (Burton et al. 1993).

Data were collected on participants who entered the boot camp between June 1992 and September 1993. Since a smaller number of women were sentenced to boot camp, we focused our efforts on obtaining responses from the entire population of 124 women in the program over a 15-month time period. Out of the female population in the boot camp program, we were successful at obtaining consent from 122 (or 98.4%) of the women. One woman who did not participate could not understand or speak English, while another woman escaped from the facility prior to our weekly visit. Of approximately 1,200 males who entered the program during that time period, we collected questionnaire responses from 1,031 (or 85.9%) of the men offenders.

All data were collected directly from the participants themselves, who completed a paper-and-pencil questionnaire in the facility housing barracks within two weeks of their arrival. The male cohorts completed their surveys in a group setting with one trained researcher available to answer

TABLE C.1: Sample Characteristics

<i>Characteristic</i>	<i>Women (n = 122)</i>	<i>Men (n = 1,031)</i>
Age (17-28 years)	20.6	19.5
Race/ethnicity (percentage)		
African American	44.3	44.4
Caucasian	45.1	31.4
Hispanic	10.7	23.8
Formal education (years)	10.5	10.3
Marital/partner attachment (percentage attached)	32.0	35.1
Number of children (percentage)		
None	46.7	69.8
One	30.3	21.3
Two	9.8	6.1
Three or more	13.1	2.9
Median household income (in dollars)	16,800	27,500
Current conviction (percentage)		
Drug	41.8	28.9
Person	19.7	19.5
Property	38.5	51.6

questions. The women participants completed their surveys individually with one trained research team member (recall that only two to three women entered the program weekly). We do not believe that the differences in the two data collection methods were significant enough to affect response reliability or validity. The benefits of obtaining a high response rate for the women outweighed any negative effects caused by conducting the men's questionnaire sessions in larger groups. A total of 1,153 usable questionnaires were completed, 10.6% by women respondents.

Sample Characteristics

The sample characteristics of the 1,031 men and 122 women indicated that the vast majority lived in the inner city or surrounding urban area at the time of arrest for their most recent conviction. Men and women were both between the ages of 17 and 28 years, with the average age calculated at 19.5 for men and 20.6 years for women. The African American composition of both samples was identical (44%). However, there were more Caucasian women (45.1%) than men (31.4%), and there were more Hispanic men than women (23.8% and 10.7%, respectively). The amount of formal education completed ranged between 6th grade and three years of higher education, with a mean of a 10th-grade education. Single/unattached women (68.0%) and men (64.9%) comprised the majority of the sample relative to married and cohabiting women and men.

The demographic differences between the men and women in the sample were number of children, median household income, and current conviction. First, about 46.7% of women and 69.8% of men had no dependent children. Of all the fathers and mothers, the women more often reported being the primary caretaker and sole financial respondent for the children. As primary caretakers, the women lived in households that generated much lower incomes than men. The median household income for women (most with children) was \$16,800, while men's reported annual household income was \$27,500.

As for the most recent conviction, crimes of violence were comparably represented by gender; in the sample, 19.7% of women and 19.5% of men were violent offenders. More women (41.8%) than men (28.9%) were convicted of a drug offense. Bear in mind that the offense type of each convicted offender (violent, property, or drug) does not represent felony crimes committed by men and women in prison. Even though women are increasingly being sentenced for felony drug offenses as a result of the war on drugs (Immarigeon and Chesney-Lind 1993; U.S. Bureau of Justice Statistics 1994), our sample more closely resembles first-time felony offenders in other shock incarceration programs as an alternative to jail or prison incarceration (MacKenzie and Brame 1994).

Dependent Variables

Dependent variable measures for the analysis were originally derived from Elliott and Ageton's (1980) scale of delinquent behaviors offenses found in the National Youth Survey (NYS). The NYS is currently "the most highly respected self-report assessment of antisocial behavior" (Caspi et al. 1994). We adjusted certain measures to apply to our young adult sample. Respondents were asked whether they had ever committed 35 different deviant and criminal acts (Hindelang, Hirschi, and Weis 1981). Our prevalence dimension of crime measures offense participation or the number of crime types committed. Other researchers have preferred the use of the prevalence measure of variety:

Variety scores are useful for individual-differences research for several reasons. First, they show the extent of involvement in different types of crimes. . . . Second, they are less skewed than frequency scores. Third, they give equal weight to all delinquent acts, unlike frequency scores, which give more weight to minor crimes that are committed more frequently (e.g., underage drinking) and less weight to serious, less frequent crimes (e.g., rape). (Caspi et al. 1994: 170-71)⁴

In the current study, one point was assigned if a respondent admitted involvement in a specific act; if respondents did not admit involvement, no points were assigned. The general crime scale was summed to obtain a composite score, which ranged from 0 to 35. Items in the general crime scale have been employed in previous tests of criminological theories using samples of adults (Burton et al. 1993, 1994, 1998). In addition, we distinguished type of criminal behavior by dividing the offenses into three subscales: violent, property, and drug. Table C.2 shows the means, standard deviations, and reliability for all dependent and independent variables used in the analysis.

Using Cronbach's (1951) alpha method, the 35-item general crime scale was reliable at .82 for women and .90 for men; the 15-item property crime subscale had a reliability level for women and men of .72 and .85, respectively; the 11-item drug subscale was .76 for women and .81 for men; and the 9-item violent crime subscale was reliable for females at .61 and .66 for males (see the appendix for individual offenses included in each subscale and accompanying frequencies separated by gender). Table C.2 shows that men admitted past involvement in an average of nine crimes: three drug offenses, four property crimes, and two violent crimes. Women engaged in an average of nine total crimes: four drug offenses, three property crimes, and two violent crimes. Although the property crime rate differed slightly for men and women, the types of drug offenses and violent crimes committed by both men and women were similar (see English 1993).⁵

Independent Variables

The items used in this study to measure social control and differential association variables were all drawn from previous theoretical tests (see Burton 1991; Burton et al. 1993, 1994, 1998; Fiftal 1993; Matsueda 1982).⁶ Participants in our sample responded to each item by using a 6-point Likert-type scale that ranged from *strongly agree* (6) to *strongly disagree* (1). Some responses were recoded so that a high score on an item indicated the presence of differential association or social control. The reliability of each composite independent theory measure was checked by Cronbach's (1951) alpha

TABLE C.2: Individual Dependent and Independent Variables by Gender

Variable	Number of Items	Women		Men		Sample F-Ratio
		Reliability	Mean (SD)	Reliability	Mean (SD)	
Dependent						
General crime	35	.82	8.57 (5.12) (range: 0-26)	.90	9.49 (6.85) (range: 0-31)	2.06
Violent crime	9	.61	1.64 (1.25) (range: 0-6)	.66	1.72 (1.70) (range: 0-9)	0.27
Property crime	15	.72	2.98 (2.60) (range: 0-11)	.85	4.19 (3.76) (range: 0-17)	11.99**
Drug crime	11	.76	3.96 (2.55) (range: 0-11)	.81	3.62 (2.72) (range: 0-11)	1.68
Independent						
Social control						
Marital/partner attachment	1	—	0.32 (0.47)	—	0.35 (0.48)	0.48
Parental attachment	3	.75	15.25 (2.98)	.64	14.87 (3.02)	1.77
Peer attachment	2	.81	6.84 (2.91)	.73	7.68 (2.79)	9.58**
Involvement	2	.69	6.44 (2.89)	.56	6.09 (2.69)	1.82
Belief	2	.63	8.88 (2.41)	.51	8.11 (2.40)	11.23**
Differential association						
Individual						
definitions	5	.77	10.97 (4.95)	.62	11.98 (4.52)	5.30*
Others' definitions	3	.71	9.50 (3.79)	.66	10.11 (3.61)	3.11
Criminal friends	1	—	2.87 (1.66)	—	2.77 (1.85)	0.30

* $p < .05$. ** $p < .01$.

method. Finally, factor analysis was performed on each composite measure to ensure that each of the individual measures loaded on one factor. The mean, standard deviation, and reliability of each independent variable, separated by gender, can be found in Table C.2.

Social Control Theory

Hirschi's (1969) social control theory was originally formulated to rival differential association or "cultural deviance" theory as an explanation of why some juveniles conform and others engage in delinquency. More recent research has applied this perspective to adult criminality. Social control theory asserts that individuals with strong ties to family and friends (Covington 1985; Sampson and Laub 1990, 1993) will be protected from criminal involvement. In this study, we measure the adult social bond by marital attachment, attachment to parents, attachment to friends, involvement, and belief.⁷

Marital/partner attachment. Attachment to a significant other of the opposite sex by cohabiting or marriage is perceived as providing informal social control by protecting individuals from participation in criminal and other antisocial activities (Rand 1987; Sampson and Laub 1993). In our analysis, we use marital/partner attachment status as one of the adult social bond measures (0 = not married/unattached and 1 = married/ attached).

Attachment to parents. We include three items to measure attachment to parents to determine the effect of longstanding connections to parents by gender: "Throughout my life, I have had a lot of respect for my mother and father" (LaGrange and White 1985; Rosenbaum 1987). The second item asks whether respondents have "gotten along" well with their parents throughout their lives. This measure is modified from previous tests of social control (Eve 1978; Simons et al. 1980). The third component states, "My family is the most important thing in my life." The level of reliability for the attachment-to-parents scale is .75 for women and .64 for men.

Attachment to friends. The bond to friends is an important part of conventional attachment. The items used in the questionnaire yielded a reliability level of .81 for women and .73 for men. Respondents were asked to respond to the following two items: "It is important for me to spend time with my friends," and "My friends are a very important part of my life" (Agnew 1985; Burton 1991; Canter 1982; Friedman and Rosenbaum 1988; Hindelang 1973; Johnson, Marcos, and Bahr 1987; Matsueda 1982; Paternoster and Triplett 1988; Rosenbaum 1987).

Involvement. Involvement in conventional activities is measured by how much free time individuals have (Agnew 1985; Burton 1991; Canter 1982; Johnson 1979; Rosenbaum 1987). The following two items (reliable at .69 for women and .56 for men) were borrowed from Burton's (1991) study: "Between work, family, and community activities, I don't have much free time," and "Before coming here, I had a lot of free time on my hands."

Belief. Finally, the conventional bond is measured by moral belief in the law, specifically in the police, as measured by the following statement: "I have a lot of respect for the police" (Hindelang 1973; Hirschi 1969). The second item, "It is all right to get around the law if you can get away with it," was also used by Hirschi (1969) in previous tests. The two items have a reliability level of .63 for women and .51 for men.

Differential Association Theory

According to Sutherland's (1947) theory of differential association, individuals develop internalized definitions that are favorable or nonfavorable toward violating the law. As individual exposure to

procriminal values, patterns, and associates increases, the likelihood of criminal involvement also increases. As in previous studies, we use three differential association variables to measure the likelihood of criminal exposure: individual definitions toward the law, others' definitions toward the law, and number of criminal friends.

Individual definitions toward crime. The five-item scale measuring individual definitions toward crime examined an individual's degree of tolerance for criminal behavior, the moral validity of violating the law, and the level of agreement with committing criminal acts. Cronbach's (1951) alpha reliability for the scale for women is .77 and .62 for men. To measure disapproval toward violating the law, we asked for a response to the following item: "No matter how small the crime, breaking the law is a serious matter" (Akers et al. 1989; Jackson, Tittle, and Burke 1986; Short 1960). A second item, "It is morally wrong to break the law," also assessed anticriminal definitions (see Jackson et al. 1986; Matsueda 1989; Silberman 1976; Tittle et al. 1986). In contrast, to measure adults' willingness to violate the law, three items were included: "Sometimes you just don't have any choice but to break the law" (Krohn, Lanza-Kaduce, and Akers 1984; Short 1960), "If someone insulted me, I would be likely to hit or slap them," and "If breaking the law really doesn't hurt anyone, and you can make a quick buck doing it, then it's really not all that wrong" (Burton 1991).

Others' definitions toward crime. According to Sutherland (1947), criminal behavior is influenced primarily through exposure to other individuals holding definitions favorable toward violating the law. Relying on previous tests of differential association (Akers et al. 1979; Cressey 1953; Dull 1983; Griffen and Griffen 1978; Jaquith 1981; Johnson et al. 1987; Short 1960; Tittle et al. 1986), we included the following item: "Many of the people I associate with think it's okay to break the law if you can get away with it." The second item is designed to determine the type of people (criminal or noncriminal) with whom an individual associates. Thus, respondents were presented with the following item: "Most of the people I associate with would never break the law." In previous research, items similar to this have been related to delinquent involvement (Akers et al. 1989; Krohn et al. 1984; Jackson et al. 1986; Orcutt 1987). Finally, the third item assesses the extent to which individuals are "often in situations where people encourage [them] to do something illegal." This three-item scale has a reliability coefficient of .71 for women and .66 for men.

Criminal friends. Many empirical tests of differential association theory have relied on the number of criminal associates as evidence of interaction with criminal members within an individual's primary group (see, e.g., Akers et al. 1979; Dull 1983; Johnson et al. 1987; Warr and Stafford 1993; Winfree, Griffith, and Sellers 1989). In our study, we apply a measure of the actual number of criminal friends in our model by asking, "In the last 12 months, how many of your five closest friends have done something they could have gotten arrested for?"

2 Findings

We assessed the bivariate relationships between the eight independent variables and crime by zero-order correlations. Tables C.3 and C.4 show that for the sample as a whole, all three of the differential association variables (individual definitions, others' definitions, and number of criminal friends) were significantly and directly correlated with property, violent, and drug offenses.⁸ Similarly, these tables reveal that the social control variables of attachment to parents, involvement in conventional activities,

TABLE C.3: Zero-Order Correlations of Theoretical Variables and Crime Scales (men)

	General Crime	Violent Crime	Property Crime	Drug Crime	Peer Attachment	Parental Attachment	Marital/ Partner Attachment	Involvement	Individual Belief	Other Definitions	Criminal Definitions	Friends
General crime	1.00											
Violent crime	.75**	1.00										
Property crime	.91**	.60**	1.00									
Drug crime	.80**	.44**	.53**	1.00								
Peer attachment	.15**	.09**	.14**	.13**	1.00							
Parent attachment	-.23**	-.16**	-.22**	-.18**	-.05	1.00						
Marital/partner attachment	-.05	-.01	-.10**	-.00	-.07*	.04	1.00					
Involvement	-.19**	-.12**	-.20**	-.14**	-.10**	-.01	.10**	1.00				
Belief	-.25**	-.24**	-.20**	-.18**	-.02	.21**	-.02	.18**	1.00			
Individual definitions	.27**	.29**	.24**	.18**	.04	-.22**	-.02	-.17**	-.54**	1.00		
Others' definitions	.37**	.32**	.34**	.24**	.02	-.18**	-.07*	-.28**	-.29**	.28**	1.00	
Criminal friends	.39**	.30**	.37**	.29**	.02	-.12**	-.09**	-.22**	-.27**	.27**	.42**	1.00

* $p < .05$. ** $p < .01$.

TABLE C.4: Zero-Order Correlations of Theoretical Variables and Crime Scales (women)

	General Crime	Violent Crime	Property Crime	Drug Crime	Peer Attachment	Parental Attachment	Marital/ Partner Attachment	Involvement	Individual Belief	Other Definitions	Criminal Definitions	Friends
General crime	1.00											
Violent crime	.61**	1.00										
Property crime	.86**	.41**	1.00									
Drug crime	.83**	.32**	.50**	1.00								
Peer attachment	.32**	.13	.31**	.27**	1.00							
Parent attachment	-.35**	-.24**	-.33**	-.25**	-.12	1.00						
Marital/partner attachment	-.30**	-.09	-.29**	-.26**	-.20*	.08	1.00					
Involvement	-.26**	-.38**	-.13	-.19*	-.10	-.12	-.07	1.00				
Belief	-.22*	-.17*	-.19*	-.16	-.13	.27**	.10	.09	1.00			
Individual definitions	.28**	.23*	.21*	.24**	.19*	-.20*	-.01	-.16	-.50**	1.00		
Others' definitions	.47**	.35**	.35**	.42**	.17	-.24**	-.00	-.32**	-.18*	.33**	1.00	
Criminal friends	.31**	.22**	.28**	.23**	.03	-.10	-.00	-.13	-.12	.14	.28**	1.00

* $p < .05$. ** $p < .01$.

and belief in the law were significantly and inversely correlated with criminal behavior. On the other hand, marriage reduced involvement only in property crime, and attachment to peers was positively correlated with all types of crime.⁹

General Criminal Behavior and Gender

Following the bivariate analysis, we used ordinary least squares (OLS) regression to examine the effects of independent variables on dependent variables. The first dependent variable (general crime) was regressed on three control variables (age, race, and gender), five social control variables, and three differential association variables.¹⁰ Race was dummy coded (white vs. non-white), while age was a continuous variable. Regression coefficients were determined with all variables entered simultaneously into the equation. Table C.5 shows the standardized and unstandardized regression coefficients for men and women when both theories were regressed against each other. Gender groups were analyzed both independently and together.

Social control. Table C.5 shows that three out of five social control variables were significantly related to the overall measure of criminal behavior for the sample. Attachment to peers was significantly and positively related to criminal behavior. Attachment to parents and involvement in conventional activities were significantly and inversely related to involvement in criminal behavior. Those who got along well with their parents and considered them an important part of their lives were less likely to engage in criminal behavior. Furthermore, respondents who were immersed in time-consuming activities (i.e., work, family, and community activities) were also less likely to commit crimes.

We conducted a difference of slopes test on the significant unstandardized regression coefficients and their corresponding standard errors to determine if any significant differences existed between men and women. When conducting a hypothesis test of two samples of this nature, we relied on the formula suggested by Paternoster et al. (1998). We found that attachment to parents

TABLE C.5: Effects of Social Control and Differential Association Variables on General Crime: Standardized Betas (unstandardized *B* coefficients) Reported

Variable Name	Women (n = 122)	Men (n = 1,031)	Women and Men (N = 1,153)
Social control			
Marital/partner attachment (0 = not attached)	.21 (2.27)**	.01 (.08)	.02 (.33)
Parental attachment	-.31 (-.53)**	-.09 (-.21)**	-.12 (-.32)**
Peer attachment	.07 (.12)	.06 (.16)*	.07 (.16)*
Involvement	-.24 (-.43)**	-.06 (-.16)*	-.07 (-.18)*
Belief	.03 (.05)	-.06 (-.17)	-.05 (-.15)
Differential association			
Individual definitions	.11 (.11)	.12 (.19)**	.12 (.17)**
Others' definitions	.18 (.31)*	.16 (.31)**	.16 (.30)**
Criminal friends	.16 (.50)*	.26 (.98)**	.26 (.94)**
Control variables			
Age	-.08 (-.15)	.03 (.08)	.01 (.04)
Gender (0 = male)	—	—	-.05 (-.93)
Race (0 = non-white)	.22 (2.23)**	.19 (2.75)**	.19 (2.64)**
<i>R</i> ²	.51	.29	.30

p* < .05. *p* < .01.

($z = -2.214$) was a significantly stronger predictor of female ($b = -.533$; $SE = .129$) as opposed to male ($b = -.208$; $SE = .070$) crime participation. On the other hand, there were no significant differences between women and men and the level of involvement as a predictor of criminal participation. The effect, then, of involvement on participation in crime is similar for men and women.

One of the strongest predictors for a woman's involvement in crime was whether she lived with a mate or was married. The significance of this relationship was not in the predicted direction of social control theory, which would hypothesize that family relationships, including marriage, insulate against criminal involvement. On the other hand, marital attachment was not significant for predicting men's criminal behavior.

One factor that was significantly related to men's participation in crime was peer attachment. Young men who were attached to their friends were more likely to engage in criminal behavior—a relationship in the direction opposite to that predicted by social control theory. Other studies have interpreted peer attachment and increased criminal involvement as indirect support for differential association theory, depending on whether the friends were delinquent (Conger 1976).¹¹

Differential association. In Table C.5, others' definitions and criminal friends significantly predicted both male and female involvement in crime. A difference of slopes test on criminal friends indicated there were no significant differences between women and men; the effect of criminal friends on participation in crime is similar for men and women.

Individual definitions, although in the expected direction for women, were significant only for men. Furthermore, for men, differential association variables had stronger effects than social control theory variables in predicting their participation in crime. For women, there was some tendency for the social control variables to have stronger effects. The overall explanatory power for both theories in the model for women was $R^2 = .51$ and for men was $.29$.

Control variables. Race/ethnicity significantly predicted criminal involvement for women and men. Specifically, Anglo men and women were more likely to have been involved in crime than non-white individuals. Age was not a significant predictor of overall rates of criminal behavior. To more precisely measure the nature of gender differences and similarities for overall crime, a separate t -test for independent samples was conducted using unstandardized partial regression coefficients while using gender as the grouping variable. Results indicated that the mean for the men (9.88) was significantly higher than for women (8.56) for the general crime scale.

Type of Criminal Behavior and Gender

Table C.6 shows the contribution of social control and differential association theories to individually and simultaneously explain young men's and women's involvement in drug, property, and violent crimes.

Social control. A consistent and significant predictor of all three crime types for women was parental attachment. Parental attachment was also significant in the direction predicted by social control theory for men's property and violent crime. Attachment to parents served as an effective insulator for men and women against criminal involvement, a finding consistent in delinquency studies (Burton et al. 1995). A difference of slopes test indicated that the effect of parental attachment ($z = -2.136$) was a significantly stronger predictor for women ($b = -.122$; $SE = .036$) than for men ($b = -.036$; $SE = .018$) for violent crime participation. The effect of parental attachment on property crime ($z = 1.62$) is similar for males and females since the difference was found to be not statistically significant.

TABLE C.6: Effects of Social Control and Differential Association Variables on Drug, Property, and Violent Crime: Standardized Betas (and unstandardized coefficients) Reported

Variable Name	Drug Crime			Property Crime			Violent Crime		
	Women	Men	Sample	Women	Men	Sample	Women	Men	Sample
Social control									
Marital/partner attachment	.16 (.89)*	.04 (.24)	.06 (.33)*	.21 (1.17)**	-.04 (-.32)	-.02 (-.18)	.08 (.21)	.02 (.07)	.02 (.08)
Parental attachment	-.18 (-.15)*	-.06 (-.05)	-.06 (-.07)*	-.29 (-.26)**	-.10 (-.12)**	-.12 (-.18)**	-.29 (-.12)**	-.06 (-.04)*	-.10 (-.07)**
Peer attachment	-.02 (-.02)	.06 (.06)	.06 (.06)*	.15 (.14)	.06 (.08)*	.07 (.09)*	.01 (.00)	.06 (.04)	.05 (.03)
Involvement	-.22 (-.20)**	-.07 (-.07)*	-.09 (-.08)**	-.10 (-.09)	-.07 (-.10)*	-.07 (-.09)*	-.34 (-.15)**	.01 (.01)	-.02 (-.01)
Belief	.01 (.01)	-.08 (-.09)*	-.07 (-.08)*	.02 (.02)	-.02 (-.03)	-.02 (-.03)	.01 (.01)	-.05 (-.04)	-.04 (-.03)
Differential association									
Individual definitions	.11 (.06)	.08 (.05)*	.09 (.05)*	.06 (.03)	.10 (.08)**	.09 (.08)**	.09 (.02)	.15 (.06)**	.14 (.05)**
Others' definitions	.15 (.18)*	.08 (.06)*	.10 (.08)**	.14 (.21)*	.16 (.16)**	.15 (.15)**	.10 (.03)	.17 (.08)**	.16 (.07)**
Criminal friends	.15 (.22)*	.23 (.34)**	.22 (.33)**	.17 (.23)*	.24 (.50)**	.24 (.48)**	.05 (.04)	.18 (.17)**	.17 (.16)**
Control variables									
Age	.14 (.14)*	.16 (.20)**	.16 (.19)**	-.18 (-.18)*	-.06 (-.11)*	-.08 (-.13)**	-.23 (-.11)**	-.03 (-.02)	-.04 (-.03)
Gender (0 = male)	—	—	.01 (.06)	—	—	-.09 (-1.04)**	—	—	-.01 (-.07)
Race (0 = non-white)	.44 (2.25)**	.26 (1.51)**	.28 (1.62)**	.03 (.14)	.13 (1.07)**	.12 (.96)**	-.07 (-.17)	.02 (.08)	-.00 (-.00)
R ²	.49	.23	.25	.40	.25	.26	.36	.18	.19

*p < .05. **p < .01.

Lack of involvement in conventional activities significantly predicted men's and women's participation in drug crime, as well as women's violent crime and men's property crime. Difference of slopes tests verified that lack of involvement in activities has similar effects for men's and women's involvement in drug crime and overall crime participation.

Marital attachment significantly predicted women's involvement in drug and property crimes but not in the direction predicted by social control theory. In other words, women who were married or living with a mate or boyfriend were more likely to be involved in drugs and/or property offenses. Marital attachment for men, however, did not insulate against or foster crime.

Differential association. For men, all three measures of differential association theory were significantly and positively related to all three types of crime. Thus, when criminal behavior was separated by type, differential association theory more consistently explained men's participation in drug, property, and violent criminal behaviors than did social control theory. For women, though, both differential association and social control theory were related to explaining female drug and property offenses, while social control variables were stronger predictors of women's participation in violent crime. Difference of slopes tests were conducted to detect significant effects on others' definitions and criminal friends between men and women. None of the differences was statistically significant for participation in property, drug, or overall crime. In other words, the effects of criminal friends and others' definitions on criminal participation were similar for men and women.

Control variables. Of the three control variables, age and race/ethnicity were the most consistent and strongest predictors of differences in rates of offending for men and women. As the age of male and female adults increased, involvement in drug crimes also significantly increased, while male and female property and female violent crimes significantly decreased. Anglo men and women were more likely to have been involved in drug crime than non-white men and women. Also, Anglo men were more likely than were African American and Hispanic men to have been involved in property crime.

The only type of crime that varied by gender was property offenses. Men were more likely than women to have committed crimes against property. For independent samples, *t*-tests were conducted for each of the three subscales, using unstandardized partial regression coefficients. Gender was used in each *t*-test as the grouping variable to more precisely measure the nature of gender differences and similarities for drug, property, and violent offenses. Results confirmed that the mean for the men (4.37) was significantly higher than for women (2.98) for the property crime subscale. However, for drug offenses, there was no difference between men (3.75) and women (3.94). The same held true for the violent crime subscale, in which men (1.77) were found to have a mean similar to that of women (1.64).



2 Discussion

If psychology is sometimes referred to as the “science of college sophomores,” then criminology might earn the label of the “science of high school sophomores”; while psychologists run experiments on their students, criminologists rely, over and over again, on samples of adolescents in school. To be sure, such self-report research is important and has considerably advanced our understanding of crime causation. Nonetheless, the skewness in focusing on adolescents and on minor delinquencies means that the applicability of criminological theory to serious and adult offending for men and women has been examined too infrequently.

A strategy employed episodically to rectify this omission has been to test theories on samples of convicted offenders, who have higher base rates of serious criminality (see, e.g., Covington 1985; Horney et al. 1995; Longshore et al. 1996; Sampson and Laub 1993). Building on this research, we have attempted to assess the generality of social control and differential association theories and to explain self-report crime across gender among first-time convicted felons serving a three-month sentence in a shock probation program, as an alternative to jail or prison incarceration. Several salient results were found.

First, both social control theory and differential association theory appear to have general effects. For the sample as a whole, the support for differential association is especially strong and consistent: The three differential association variables are significantly related to the general crime scale and to the drug, property, and violent crime subscales. Note that many studies that assess differential association use only the single measure of “number of delinquent peers.” In a cross-sectional study, the peer-delinquency relationship is subject to the claim of spuriousness—that it is merely a case of “birds of a feather flocking together” (see Gottfredson and Hirschi 1990; Hirschi 1969). In our analysis, however, it is noteworthy that the attitudinal measures of others’ definitions and one’s own individual definitions also are related to all the crime scales for the sample. Some additional support for differential association theory can be drawn from the positive relationships of peer attachment to all the crime measures for the sample. This result is contrary to Hirschi’s (1969) prediction. Furthermore, to the extent that the members of the sample are likely to have delinquent friends, then such attachment might be viewed as an indicator of differential association.

The findings for the social control measures are less impressive but nonetheless offer support for the perspective. Parental attachment had a consistent negative relationship to all of the crime measures for the sample. It appears, therefore, that bonds to parents have continuing effects on serious felons into early adulthood (Sampson and Laub 1993). Furthermore, with the exception of violent crime, involvement in conventional activities was negatively and significantly associated with the crime measures. Previous research on social control theory exploring the relationship between involvement and criminality has revealed mixed findings. While some studies have reported that involvement has few effects on offending (see, e.g., Hirschi 1969), others have found that involvement in conventional activities has a significant and inverse relationship both to minor forms of deviance (Agnew 1985; Friedman and Rosenbaum 1988; Rosenbaum 1987) and to adult offending behavior (Fiftal 1993; Lasley 1988).

Second, the analyses suggest that the “traditional” criminological perspectives can account for offending across the genders. This is not to say, however, that gender-specific theories could not expand our understanding not only of female crime but also of male criminal participation (see, e.g., Chesney-Lind 1989; Hagan 1989; Messerschmidt 1993). Still, the data reveal that differential association and social control variables—albeit with some variation—have similar effects across male and female felons. In fact, for every crime measure, the amount of explained variation is higher for the female sample than it is for the male sample. Furthermore, our results are consistent with a recent meta-analysis of predictors of criminal behavior, which reports that antisocial attitudes/associates and parental/family factors have similar effects for males and females (Andrews and Bonta 1994:68).

Some differences do emerge, however, when analyzing the effects of theoretical variables by gender. We should caution that making interpretations is difficult because the large sample size for the male offenders (1,031 men vs. 122 women) means that the analyses of the males have more power to detect statistically significant relationships. With this caveat stated, it appears that the differential association variables have consistent effects not only across crime types but also across male and female offenders. Only with individual definitions are any gender differences apparent; even here, the relationships, though not significant for women, are in the same direction.

In contrast, the effects of social control variables were stronger for the women than for the men in our sample. We found that the effects of parental attachment significantly and inversely affected males' offending, but the impact of parental attachment on females was significantly stronger for participation in violent offenses. This difference between men and women was not found for property crime, and parental attachment was not significant for male drug crime participation. The effect of a lack of parental attachment as a significant predictor of female violent crime is especially noteworthy for furthering our understanding of female offending.

Covington's (1985) analysis revealed that measures of social control theory were stronger predictors of adult women's criminal involvement. She suggests that as adolescents, females generally are exposed to more parental supervision than male adolescents. Thus, females may be more negatively influenced when familial relations are problematic or when parental supervision is reduced or nonexistent. Covington raises the additional possibility that these findings indicate differential perception of female and male adolescent offending by the juvenile justice system. While male adolescent offending may stem from a variety of causes, "many of the early female [juvenile] arrests may have been based on their detached and unsupervised status as juveniles rather than serious criminality" (Covington 1985:350).

We should note that with the exception of violent crime, being married or attached to a male partner was positively and significantly related to criminal involvement for women. For males, female partner attachment had no effects on any crime scale. The result for males is consistent with Sampson and Laub (1993), who found that marriage only had effects on their sample of former delinquents when marital quality is taken into account (see also Laub, Nagin, and Sampson 1998). Unfortunately, we do not have detailed information on the nature of the marital relationship to disentangle why marriage or attachment fosters criminality.

From a differential association perspective, it may be that the female felons in the sample are involved with men who reinforce their criminality. Research on battered women offenders found that being involved in intimate violent relationships was a main pathway to increasing the risk of offending (Richie 1996). Another possibility is that women from abusive, dysfunctional homes—those who are at a high risk for offending (see, e.g., Chesney-Lind 1989)—attempt to escape family victimization through early marriages and attachments (Miller 1986). These attachments, in turn, influenced the roles these women played in criminal behavior in relation to men (see Alarid et al. 1996). Future research should take into account the quality of the marital relationship, as well as the role that battering and intimate abuse have on subsequent involvement with the criminal justice system.

Another noteworthy finding is that for both males and females, being Caucasian was associated with higher rates of self-reported crime for every scale with the exception of violent offending. These differences could reflect racial differences in criminal justice processing: Compared to minorities, whites had to have more involvement in self-reported crime before being arrested and incarcerated.

An added finding that may have resulted from decisions made during prosecutorial and judicial case processing was the offending patterns of men and women. While men reported having committed more overall crime than women, particularly more property offenses, women and men did not differ significantly in the type and number of drug and violent crimes. These similarities may mean that judges who sentenced young, first-time felony offenders to shock incarceration as a prison alternative were impartial to gender.

In closing, the analyses reported here lend continuing support to the traditional theories of social control and, especially, differential association/social learning. Importantly, the data support the claim that these are "general" theories, explaining variations in self-report criminality among felony offenders and across men and women. As Cole (1975) demonstrates, however, the fate of crime and deviance theories does not always or usually hinge on their empirical vitality but on whether newer "paradigms" offer fresh research opportunities. New theories, of course, should be welcomed and their explanatory power assessed. But in doing so, we would caution that the value of "older" perspectives should be remembered and, as in our research, applied to underresearched topics.

APPENDIX Prevalence of Self-Reported Criminal Behavior: “Have You Ever . . . ?”

	<i>Women</i>		<i>Men</i>	
	<i>n</i>	<i>(%)</i>	<i>n</i>	<i>(%)</i>
Property crime subscale (15 items)				
1. Avoided paying at restaurants, the movie theater, etc.?	29	(23.8)	346	(33.7)*
2. Knowingly bought, held, sold stolen property?	50	(41)	531	(51.8)*
3. Taken someone else's vehicle without their permission?	33	(27)	379	(36.9)*
4. Taken anything (\$5 or less) from your job?	11	(9)	152	(14.8)
5. Taken anything (between \$5 and \$50) from your job?	11	(9)	118	(11.5)
6. Taken anything (over \$50) from your job?	3	(2.5)	102	(10.0)**
7. Taken anything (\$5 or less) from someone (other than work)?	46	(37.7)	317	(31.0)
8. Taken anything (between \$5 and \$50) from someone (other than work)?	25	(20.5)	306	(30.0)*
9. Taken anything (over \$50) from someone else (other than work)?	31	(25.4)	346	(33.7)
10. Damaged/destroyed property belonging to relative/family of origin?	15	(12.3)	166	(16.2)
11. Purposely damaged/destroyed property belonging to an employer?	2	(1.6)	59	(5.7)*
12. Purposely damaged/destroyed property belonging to spouse/partner/friend (someone other than family of origin or an employer)?	22	(18.0)	327	(31.9)**
13. Broken into a building/vehicle?	25	(20.5)	423	(41.2)**
14. Stolen or attempted to steal a motor vehicle?	19	(15.6)	314	(30.6)**
15. Thrown objects at cars/property?	41	(33.6)	419	(40.9)
Drug crime subscale (11 items)				
1. Drank alcoholic beverages before age 21?	92	(75.4)	788	(76.8)
2. Drove a car while drunk?	51	(41.8)	471	(46.0)
3. Bought/provided beer/liquor for someone under 21?	51	(41.8)*	340	(33.2)
4. Had marijuana/hashish?	86	(70.5)**	572	(55.8)
5. Used hallucinogens/LSD?	26	(21.3)	226	(22.0)
6. Had amphetamines?	17	(13.9)	129	(12.6)
7. Had barbiturates?	14	(11.5)	91	(8.9)
8. Had heroin?	6	(4.9)	32	(3.1)
9. Had cocaine?	60	(49.2)**	278	(27.1)
10. Sold marijuana?	34	(27.9)	359	(35.2)
11. Sold hard drugs (cocaine, crack, heroin)?	46	(37.7)	435	(42.5)
Violent crime subscale (9 items)				
1. Been involved in a gang fight?	25	(20.5)	232	(22.6)
2. Used physical force to get money from a relative/family of origin?	4	(3.3)	48	(4.7)
3. Used physical force to get money from someone at work?	1	(0.8)	35	(3.4)

4. Used physical force to get money from someone, a family member, or someone at work?	12	(9.8)	151	(14.7)
5. Hit or threatened to hit a relative/member of family of origin?	42	(34.4)	337	(32.9)
6. Hit or threatened to hit someone at work?	5	(4.1)	144	(14.0)**
7. Hit or threatened to hit friend/partner/spouse?	80	(65.6)**	528	(51.7)
8. Had or tried to have sex with someone against their will?	1	(0.8)	31	(3.0)
9. Attacked someone with the idea of seriously hurting/killing them?	30	(24.6)	264	(25.7)

NOTE: Women, $N = 122$; men, $N = 1,031$.

* $p < .05$. ** $p < .01$.



1. There have been several adult tests of social control and differential association measures assessed against deterrence, low self-control, social learning, strain, or subcultural theory measures (see, e.g., Burton et al. 1994; Ginsberg and Greenley 1978; Makkai and Braithwaite 1991; Tittle 1980).
2. Covington's (1985) tests of social control and differential association theories differed from the variables presented in this study. For example, involvement was not included as a social control variable, and individual definitions toward crime were not included as a differential association variable.
3. Strain theory, a fundamental perspective that also offers explanations on criminal behavior, was not included in the final analysis. Although Agnew's (1985) general strain theory has received some empirical support, Merton's (1938) social strain theory has received less support in previous studies. We originally included social strain variables that tested relative deprivation and blocked opportunities for both men and women in the data set. The variables measuring blocked opportunities were not reliable (.44) and were not used in the analysis. The variables measuring relative deprivation (reliable at .74) were regressed separately with all dependent crime variables. Relative deprivation was not significant for women for any type of crime and was significant only for male property crime but not for male drug or violent offenses. When relative deprivation was regressed against social control theory and/or differential association theory, relative deprivation had no effect for any type of crime.
4. Incidence data (how many times in the past year) were collected on all criminal behaviors but were not used due to a low reliability of the incidence subscales. The 35-item general crime incidence scale was, however, reliable at .61.
5. We are not suggesting that women are becoming more violent in their criminal involvement, especially as they relate to the women's self-reported involvement of violent crime, particularly the three "hit or threatened to hit" measures in the violent crime subscale (see appendix). The similarities in self-reported crime participation by women and men in our study can be accounted for in part by English (1993: 373), who found that incarcerated adult women and men prisoners had similar participation rates for assault, robbery, motor vehicle theft, fraud, and dealing drugs. Our data show, however, that women and men participate in a wide variety of criminal behaviors, from less serious to more serious, which may or may not be related to their conviction offense.

6. A potential weakness of our measures is the varying time frame of our independent and dependent variables (e.g., the time frame for “peer attachment” and “marital attachment” is current, the time frame for “criminal friends” is in the past year, while the time frame for the dependent measure of prevalence is lifetime). We are largely assuming that our measures of our independent variables are relatively stable over time. Furthermore, we believe that our analysis has merit despite these issues. Future research would benefit from longitudinal analysis to determine the stability of theoretical variables over time.
7. Commitment, an element of Hirschi’s (1969) social bond, was not used in the analysis due to its low reliability.
8. Men and women were also analyzed separately using correlations between differential association variables with the dependent variables. Our analyses revealed that a significant correlation existed between all variables. For the sample as a whole, the three differential association measures are more highly correlated with each other than are the five measures of social control. This may increase the likelihood of finding greater consistency with differential association measures.
9. When bivariate correlations were analyzed separately by gender, a mixed portrayal emerged for social control variables. Attachment to parents for both men and women was significantly and inversely related to all types of crime. For men, attachment to friends, involvement, and belief were significantly related to all crime types, with the exception of marital attachment, which was significant only for property crime. For women, attachment to friends and marital attachment were related to drug and property crimes but not violent crime. On the other hand, involvement was significantly related to women’s drug and violent crimes but not women’s property offenses. Finally, belief was significantly related to women’s property crime and violent crime but was not significantly related to women’s drug crime.
10. We separately analyzed the control variables with each of the theories before regressing them together as shown in Table C.5. The results of the separate regressions show a significant relationship between age, race, and self-reported offending behavior. Age was inversely related to crime—that is, as age increased, less crime was committed. Men and women of color reported they committed significantly less crime than did Caucasian men and women. When social control theory was introduced into the equation with the three control variables, all social control variables, except for marital attachment, were significantly related to criminal offending. All social control variables were significant in the predicted direction, except for attachment to friends. When social control variables were removed and differential association variables were regressed with the three control variables, all three differential association variables were significantly and directly related to crime in the predicted direction.
11. To detect the presence of an interaction between peer attachment and criminal friends, we introduced a multiplicative term into each regression equation. A hierarchical *F*-test indicated that an interaction effect was not present for women, but an interaction existed for men for drug, property, and general crime scales (Jaccard, Turrisi, and Wan 1990). The difference between the *R*² values in the main effect and interactive models indicated that the interaction contributed less than 1 percent to each model (.63 percent for drug, .89 percent for general crime, and .90 percent for property offenses).

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