

Fall 1980

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Recommended Citation

Harold G. Grasmick, Donald E. Green, Legal Punishment, Social Disapproval and Internalization as Inhibitors of Illegal Behavior, 71 J. Crim. L. & Criminology 325 (1980)

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LEGAL PUNISHMENT, SOCIAL DISAPPROVAL AND INTERNALIZATION AS INHIBITORS OF ILLEGAL BEHAVIOR*

HAROLD G. GRASMICK** AND DONALD E. GREEN***

Empirical testing of the deterrence doctrine was revived in the late 1960s with the publication of papers by Gibbs, Tittle, and Jensen who reported inverse relationships between the threat of legal punishment and the volume of crime.¹ The studies by Gibbs and Tittle were based on aggregate properties of crime and punishment (Uniform Crime Reports and National Prisoner Statistics for states were used as the unit of analysis), whereas Jensen's research examined individuals' perceptions of the threat of punishment and their self-reported involvement in illegal behavior. These two research strategies—aggregate-level and individual-level analyses—presently constitute the two major traditions in deterrence research. Economists have conducted most of the aggregate-level research and have concentrated both on refining measures of the relevant variables and on adding other variables to equations that predict crime rates. Sociologists generally have focused on individual-level analysis. Even Tittle and Gibbs, whose earlier work with aggregate data sparked renewed interest in deterrence research, recently have shifted their research to individuals' perceptions and behavior.²

The emphasis on perceptions of punishment developed from an awareness that deterrence is a communicative process. In order to deter, actual threats of legal punishment must be communicated

to individuals. In the communication process individuals' perceptions mediate these threats before the threats influence behavior.³ Little research has been conducted on the relationship between actual and perceived properties of punishment although the evidence adduced in the three recent studies suggests a rather low correspondence between the two.⁴ Until more is known about this relationship, many sociologists believe that research on the relationship between individuals' perceptions of the threat of sanctions, rather than the actual threat, and their involvement in illegal behavior is the appropriate test of deterrence theory.

Researchers using individual-level data have devoted the past decade to refining the measurement of variables, perceived certainty and severity of legal punishment, and involvement in illegal behavior. The two other variables considered most frequently are the threat of social disapproval from peers and moral commitment to the law. These two, like the threat of legal punishment, are factors which *inhibit* illegal behavior, as opposed to factors which *motivate* individuals to engage in illegal acts. The three inhibitory variables reflect the three sociological answers to the Hobbesian problem of order which Wrong outlined in his classic essay, "The Oversocialized Conception of Men in Modern Sociology":⁵ (1) internalization of legal norms (moral commitment), (2) fear of informal sanctions from peers (social disapproval), and (3) fear of physical and material deprivation from legally imposed formal sanctions (threat of legal punish-

* This research was conducted as part of the graduate training in methods and statistics in the Department of Sociology, University of Oklahoma. We wish to thank the College of Arts and Sciences for their support and to acknowledge the assistance of George Bryjak, Carol Bridges, Raymond L. Stankey, and Vera Walker.

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¹ Gibbs, *On Crime, Punishment, and Deterrence*, 49 Soc. Sci. Q. 515 (1968); Jensen, 'Crime Doesn't Pay': *Correlates of a Shared Misunderstanding*, 17 Soc. Prob. 189 (1969); Tittle, *Crime Rates and Legal Sanctions*, 16 Soc. Prob. 409 (1969).

² Jensen, Erickson & Gibbs, *Perceived Risk of Punishment and Self-Reported Delinquency*, 57 Soc. Forces 57 (1978); Tittle, *Sanction Fear and the Maintenance of Social Order*, 55 Soc. Forces 579 (1977).

³ Geerken & Gove, *Deterrence: Some Theoretical Consideration*, 9 L. & Soc. Rev. 497 (1975); Henshel & Carey, *Deviance, Deterrence, and Knowledge of Sanctions*, in *PERCEPTION IN CRIMINOLOGY* 57-73 (R. Henshel & R. Silverman ed. 1975).

⁴ Cohen, *Sanction Threats and Violation Behavior: An Inquiry into Perceptual Variation*, in *QUANTITATIVE STUDIES IN CRIMINOLOGY* 84-99 (C. Wellford ed. 1978); Erickson & Gibbs, *Objective and Perceptual Properties of Legal Punishment and the Deterrence Doctrine*, 25 Soc. Prob. 253 (1978); Parker & Grasmick, *The Effect of Actual Crimes and Arrests on People's Perceptions of the Certainty of Arrest*, 17 *CRIMINOLOGY* 366 (1979).

⁵ Wrong, *The Oversocialized Conception of Men in Modern Sociology*, 26 *AM. Soc. Rev.* 183 (1961).

ment). A question occasionally raised in the deterrence literature is whether these variables have simple additive effects on involvement in illegal behavior, or whether the inhibitory effectiveness of one depends on the level of another.

This article incorporates into a single piece of research all previous measurement refinements and all previous hypotheses concerning multivariate relationships among the three inhibitory variables and involvement in illegal behavior. After a brief review of the measurement issues in the individual-level deterrence research and a summary of the current knowledge about the multivariate hypotheses, the authors present data which suggests that the effects of the three inhibitory variables are additive. The simple additive model accounts for over 40 per cent of the variance in involvement in illegal behavior, and demonstrates that each of the three independent variables makes a significant, independent contribution to the explained variance.

I. REFINEMENTS IN MEASUREMENT

Deterrence theory is grounded in the utilitarian paradigm and is closely linked with both the exchange theory in sociology and the utility theory in economics. It posits a model of man as a calculator of potential costs and rewards from projected acts.⁶ The physical and material deprivation attending legal sanctions is a potential cost of a projected illegal act. Therefore, according to deterrence theory, an individual's perception of the certainty and severity of legal punishment should influence his decision whether to commit an illegal act.

Unfortunately, many researchers have used measures of perceived certainty of punishment which are poorly linked to the utilitarian premise. In many studies where respondents have been asked to estimate the probability of arrest for an individual committing an illegal act, researchers have employed as frames of reference "people in general" or "a person like yourself."⁷ Consistency with the utilitarian paradigm, however, necessitates that perceived certainty be measured by asking a re-

spondent to estimate the probability that *he* would be arrested if *he* committed the offense. This approach is a more direct measure of the respondent's perceived potential costs than questions about the perceived consequences of illegal behavior for someone other than the respondent. In a recent article, Jensen used both types of measures and demonstrated that the respondent's perception of the probability of arrest for himself is a much better predictor of involvement in illegal behavior.⁸ This finding should serve as a guideline for future measures of perceived certainty of punishment.

Despite measurement problems, most previous studies report a significant inverse relationship between perceived certainty of punishment and illegal behavior. Few, however, report evidence that perceived severity of punishment is involved in the social control process. Inconsistent with the utilitarian paradigm, the apparent lack of a deterrent effect of perceived severity has cast some doubt on the validity of its measures. The previous measures involve asking respondents (1) to estimate the probability that they would receive some specified penalty such as a jail sentence for an illegal act; (2) to choose from a list of penalties the one they think they would most likely receive; or (3) to estimate the maximum penalty provided by law.⁹

These measures recently have been criticized by Erickson and Gibbs and by Grasmick and Bryjak.¹⁰ There is no *a priori* reason to assume that all individuals would consider a particular penalty equally severe, but this assumption has been implicit in previous measures. For example, two individuals might believe they would be fined \$100 if arrested for an offense. One, however, might consider this penalty trivial while the other considers it extremely costly. Under a utilitarian paradigm, perceived severity should be measured by the respondent subjectively determining the personal cost of the penalty expected by him. Data presented by Grasmick and Bryjak demonstrate that such a measure is a much better predictor of illegal behavior than previous measures of perceived severity.

An additional measurement issue is whether

⁸ Jensen, Erickson & Gibbs, *supra* note 2, at 73-75.

⁹ See, e.g., Teevan, *Subjective Perception of Deterrence*, 13 J. RESEARCH CRIME & DELINQUENCY 155 (1976); Tittle, *supra* note 2; Waldo & Chiricos, *Perceived Penal Sanction and Self-Reported Criminality: A Neglected Approach to Deterrence Research*, 19 SOC. PROB. 522 (1972).

¹⁰ Erickson & Gibbs, *On the Perceived Severity of Legal Penalties*, 70 J. CRIM. L. & C. 102 (1979); Grasmick & Bryjak, *The Deterrence Effect of Perceived Severity of Punishment* (forthcoming in SOC. FORCES).

⁶ Geerken & Gove, *supra* note 3.

⁷ Anderson, Chiricos & Waldo, *Formal and Informal Sanctions: A Comparison of Deterrent Effects*, 25 SOC. PROB. 103 (1977); Grasmick & Appleton, *Legal Punishment and Social Stigma: A Comparison of Two Deterrence Models*, 58 SOC. SCI. Q. 15 (1977); Meier & Johnson, *Deterrence as Social Control: The Legal and Extralegal Production of Conformity*, 42 AM. SOC. REV. 292 (1977); Silberman, *Toward a Theory of Criminal Deterrence*, 41 AM. SOC. REV. 442 (1976).

"perceived threat of legal punishment" is a simple additive combination of perceived certainty and perceived severity of punishment. There are both theoretical and empirical reasons for suspecting that it is not. The utilitarian paradigm implies that perceptions of the severity of punishment if arrested will not influence the decision to violate the law if the actor believes that the certainty of arrest approximates zero. Regardless of the perceived severity of that form of punishment, if the actor believes the certainty of arrest is zero, then the perceived potential cost, in terms of legal sanctions, is zero. Conversely, if the actor believes that the punishment would be inconsequential, then the perception of the certainty of arrest will not influence behavior. Thus, a "threat of legal punishment" exists only when both perceived certainty and perceived severity are above zero. Furthermore, it appears that perceived certainty and perceived severity interact. As perceived certainty increases, the deterrent effect of perceived severity increases. Likewise, as perceived severity increases, the deterrent effect of perceived certainty increases. This type of hypothesis could be tested by the relationship between involvement in illegal behavior and the product (rather than the sum) of perceived certainty and perceived severity.¹¹ Although previous tests for an interaction effect have produced inconsistent results,¹² only the test by Grasmick and Bryjak utilized the preferred measures of perceived certainty and perceived severity described above. Their analysis offers strong evidence of an interaction effect. This result suggests that perceived threat of legal punishment should be operationalized as the product of properly measured perceived certainty and perceived severity.

A final measurement issue concerns the propriety of using self-reported *past* involvement in illegal behavior as the dependent variable with *present* perceptions of the threat of legal punishment as the independent variable. The problem of causal ordering with this strategy has been frequently noted. Tittle has suggested that a respondent's estimate of whether he will commit the offense in

the future might be a more appropriate measure of the dependent variable.¹³ Tittle, in fact, has used such a measure in his own research. Of course, it is impossible to measure future behavior directly without the employment of some type of panel design in which perceptions are measured at Time 1 and behavior is measured at Time 2. Implicit in previous synchronic deterrence research is the assumption that past illegal behavior is a reasonably valid *indicator* of future illegal behavior. There is no *a priori* reason to assume, as Tittle apparently does, that respondents' present beliefs about what they will do in the future is a more valid indicator than is self-reported past behavior. Arguments for and against each type of measure could be made. Therefore, pending resolution of this issue, it is necessary to use both measures and note any discrepancies in the analysis.

II. THREAT OF LEGAL PUNISHMENT AND OTHER INHIBITORY VARIABLES

Even as deterrence research first was being published, some prominent sociologists were criticizing the discipline for not focusing on force as a mechanism of social control.¹⁴ Gibbs has reminded sociologists that deterrence theory, like radical criminology, constitutes an effort to bring the mechanism of force into a more central position in the study of social control.¹⁵ However, no commentator writing from the deterrence perspective has suggested that legal force is the sole mechanism of control, or even that it is the most important mechanism. Rather, what is emerging from deterrence research is a model of social control containing three inhibitory variables—internalization of norms, threat of social disapproval, and threat of legal punishment.

In his essay, Wrong observed that sociological theories of social control attempting to explain inhibition of illegal behavior have limited their focus to internalization and avoidance of social disapproval.¹⁶ The emphasis on internalization derives from the writings of Parsons¹⁷ and ultimately from those of Durkheim, especially *The Elementary Forms of the Religious Life*.¹⁸ From this perspective,

¹³ Tittle, *supra* note 2.

¹⁴ Goode, *Force in Human Society*, 37 AMER. SOC. REV. 507 (1972); Janowitz, *Sociological Theory and Social Control*, 81 AM. J. SOC. 82 (1975).

¹⁵ Gibbs, *Social Control, Deterrence, and Perspectives on Social Order*, 56 SOC. FORCES 408 (1977).

¹⁶ Wrong, *supra* note 5.

¹⁷ T. PARSONS, *THE SOCIAL SYSTEM* (1951).

¹⁸ E. DURKHEIM, *THE ELEMENTARY FORMS OF RELIGIOUS LIFE* (1965).

¹¹ N. NAMBOODIRI, L. CARTER & H. BLALOCK, *APPLIED MULTIVARIATE ANALYSIS AND EXPERIMENTAL DESIGNS* (1975).

¹² Anderson, *et al.*, *supra* note 7; Bailey & Lott, *Crime, Punishment, and Personality*, 67 J. CRIM. L. & C. 99 (1976); Cohen, *supra* note 4; Grasmick & Bryjak, *supra* note 10; Teevan, *Deterrence Effects of Punishment for Breaking and Entering and Theft*, in *FEAR OF PUNISHMENT 122-149* (Law Reform Commission of Canada 1976); Teevan, *Deterrent Effects of Punishment: Subjective Measures Continued*, 18 CAN. J. CRIMINOLOGY & CORRECTIONS 152 (1976).

internalized social norms become "constitutive" rather than merely regulative of human nature."¹⁹ Wrong also traces the second control mechanism, the avoidance of social disapproval or stigma, to Parsons as well as to Linton. Theoretical acceptance of this control mechanism necessitates viewing man as "especially motivated by the desire to achieve a positive image of self by winning acceptance or status in the eyes of others."²⁰

Wrong did not deny the importance of internalization and social disapproval in the social control process; rather, he simply objected to sociology's implicit denial that the quest for material and physical rewards and the avoidance of material and physical deprivation also are powerful motives in human behavior. The core variable in deterrence theory, threat of legal punishment, is the threat of one form of physical and material deprivation. But the other two factors—internalization and social disapproval—have been incorporated into the development of the deterrence perspective. Of the twenty identified studies testing hypotheses about individuals' perceptions of legal sanctions and their involvement in illegal behavior, an overwhelming majority include some measure of moral commitment (internalization) or threat of social disapproval, and thus link deterrence theory to the other major answers to the Hobbesian problem of order in sociology.²¹

Not surprisingly, several studies in the deterrence literature report a strong zero-order inverse relationship between individuals' level of moral commitment and their involvement in illegal behavior.²² More interesting, however, is the "conditional" hypothesis proposed by several writers that the threat of legal punishment has a deterrent effect only upon those individuals who are not morally committed to the law.²³ According to this view, internalization is such a powerful inhibitor that it precludes the possibility of an actor ever

feeling the motivation to deviate. Individuals who have internalized a norm will not violate it even if they perceive legal punishment as unlikely or trivial. Therefore, perceived threat of legal punishment should be related to involvement in illegal behavior only across individuals not morally committed to the legal norm. The effects of moral commitment and perceived threat of legal punishment on involvement in illegal behavior are not additive; rather, the magnitude of the effect of perceived threat of legal punishment is contingent upon the level of moral commitment.

Several years ago, Blake and Davis criticized the argument that internalization "involves a blocking out of deviant motives" as Parsons seemed to suggest.²⁴ Instead, they proposed that, in the presence of deviant motivation, one inhibitor of deviant behavior is moral commitment to the norm and the accompanying threat of "feelings of guilt" consequent to violation of the norms. Deviant motivation, however, might be so high that the actor is willing to incur this cost in order to engage in the deviant behavior. From this perspective, the threat of legal punishment, one of the other inhibitory factors discussed by Blake and Davis, should have a deterrent effect regardless of the level of moral commitment. Whether an actor with deviant motivation will violate an internalized legal norm should depend on the actor's perception of the threat of legal punishment. Thus, according to this view, threat of legal punishment should have a deterrent effect even among the morally committed.

Only two studies in the deterrence literature directly address this issue, and the findings are inconsistent. Silberman's data suggest that the deterrent effect of threats of legal punishment is significantly greater when moral commitment is low,²⁵ but the evidence presented by Jensen suggests that it does not vary significantly with the level of moral commitment.²⁶ Neither of these studies, however, used the measure of perceived threat of legal punishment recommended above.

²⁴ Blake & Davis, *Norms, Values and Sanctions*, in *HANDBOOK OF MODERN SOCIOLOGY* 456-84 (R. Faris ed. 1964).

²⁵ Silberman, *supra* note 7; see also Grasmick & McLaughlin, *Deterrence and Social Control* (Comment on Silberman, ASR June, 1976), 43 AM. SOC. REV. 272 (1978); Jensen, Erickson & Gibbs, *supra* note 2.

²⁶ Elliot, Ageton & Canter, *An Integrated Theoretical Perspective on Delinquent Behavior*, 16 J. RESEARCH CRIME & DELINQUENCY 3 (1979). The link to Hirschi's theory *per se* is not especially profound. However, Elliot *et al.* use the concepts of "commitment" and "involvement" in Hirschi's theory to refer to an individual's relationships with deviant and nondeviant peers and the resulting

¹⁹ Wrong, *supra* note 5, at 186.

²⁰ Wrong, *supra* note 5, at 185.

²¹ See, e.g., Jacob, *Deterrent Effects of Formal and Informal Sanctions*, 2 L. & POL. Q. 61 (1980); Jensen, Erickson & Gibbs, *supra* note 2; Meier & Johnson, *supra* note 7; Silberman, *supra* note 7; Tittle, *supra* note 2; Tittle & Rowe, *Moral Appeal, Sanction, Threat, and Deviance: An Experimental Test*, 20 SOC. PROBS. 488 (1973); Waldo & Chiricos, *Perceived Penal Sanction and Self-Reported Criminality: A Neglected Approach to Deterrence Research*, 19 SOC. PROBS. 522 (1972).

²² See, e.g., Kraut, *Deterrent and Definitional Influences on Shoplifting*, 23 SOC. PROBS. 358 (1976); Meier & Johnson, *supra* note 7; Tittle, *supra* note 2, at 588-89.

²³ See, e.g., J. GIBBS, CRIME, PUNISHMENT, AND DETERRENCE 80 (1975); F. ZIMRING, PERSPECTIVES ON DETERRENCE 44-45 (1971).

The other inhibitory variable which has been considered—the threat of social disapproval—provides a link between deterrence theory and Hirschi's control theory (especially as Elliot has interpreted the concepts of "involvement" and "commitment"),²⁷ Sutherland's theory of differential association, and the recent reformulation of Sutherland's theory by Akers.²⁸ A crucial variable in these theories is whether a person's friends are involved in illegal behavior. If an actor associates with people who do not violate the law, then there is a high threat of social disapproval for the actor if he violates the law. On the other hand, if the actor's friends do engage in illegal behavior, then the threat of informal sanctions for law violations is minimal. Several deterrence researchers report relatively strong positive zero-order relationships between friends' involvement and respondent's involvement in illegal behavior (or strong inverse zero-order relationships between threat of social disapproval and illegal behavior).²⁹

Some writers have proposed that the threat of legal punishment deters individuals from committing deviant behavior only where accompanied by a substantial threat of social disapproval.³⁰ From this perspective, the physical and material deprivation of legal sanctions is not a crucial factor in the social control process. Rather, the real deterrent function of legal punishment is the threat of being exposed as an offender to one's peers who then would impose informal sanctions. Therefore, if there is no threat of these informal sanctions upon exposure, the threat of legal punishment would be an ineffective deterrent. According to this argument, only under the condition of a high threat of social disapproval should perceived threat of legal punishment be inversely related to involvement in illegal behavior.

This conditional hypothesis appears rooted in what Wrong criticized as sociology's "oversocialized concept of men."³¹ Wrong argued that individuals are motivated by physical and material rewards and costs as well as by approval and

disapproval from their peers. Wrong's argument suggests that perceived threat of legal punishment and threat of social disapproval have additive effects on illegal behavior, and that therefore the effect of the threat of legal punishment is not contingent upon the level of threat of informal sanctions. The five studies directly addressing this issue overwhelmingly support the additive hypothesis rather than the conditional hypothesis.³² However, none of these tests used the recommended measure of perceived threat of legal punishment.

In summary, with the exception of Silberman's findings regarding moral commitment as a conditional variable in the relationship between perceived threat of legal punishment and involvement in illegal behavior, the cumulated research suggests that the three inhibitory variables have additive effects. In other words, each of the three mechanisms of control outlined by Wrong makes an independent, significant contribution to the explanation of variation in individuals' involvement in illegal behavior. The research described below tests the conditional hypotheses again but with a new measure of perceived threat of legal punishment. An analysis of the explanatory power of the inhibitory model follows this presentation of research and concludes by suggesting how the inhibitory factors might be linked with motivational factors in a more complete theory of the etiology of crime.

III. RESEARCH PROCEDURES

Data were gathered in a survey of a large metropolitan community in the Southwest during the spring of 1979. A simple random sample of 400 adults was drawn from the Polk City Directory. Contacts to schedule appointments for interviews were made either by phone or at the door, and refusals were replaced by re-sampling. The replacement process continued until the completion of 400 interviews. The analysis excludes ten respondents who were interviewed but failed to answer all items.³³

sanctioning networks. Elliot *et al.* link Hirschi's other two concepts, attachment and belief, to the concept of internalization as we have used it.

²⁷ Wrong, *supra* note 5.

²⁸ Akers, Krohn, Lanza-Kaduce & Radosevich, *Social Learning and Deviant Behavior: A Specific Test of a General Theory*, 44 AM. SOC. REV. 635 (1979).

²⁹ See, e.g., Kraut, *supra* note 18; Tittle, *supra* note 2.

³⁰ See, e.g., Tittle & Logan, *Sanctions and Deviance: Evidence and Remaining Questions*, 9 L. & SOC. REV. 371 (1973); Zimring & Hawkins, *The Legal Threat as an Instrument of Social Change*, 27 J. SOC. ISSUES 33 (1971).

³¹ Wrong, *supra* note 5.

³² Anderson, Chiricos & Waldo, *supra* note 7; Burkett & Jensen, *Conventional Ties, Peer Influence, and the Fear of Apprehension: A Study of Adolescent Marijuana Use*, 16 SOC. Q. 522 (1975); Grasmick & Appleton, *supra* note 7; Jensen, *supra* note 1; Silberman, *supra* note 7.

³³ The sampling procedure generated a sample very similar to the population of the community in selected demographic characteristics from 1970 census data. Eighty-five per cent of the sample, compared to 87% of the population, are white. Forty-four per cent of the sample and 45% of the population are males. The median age of the sample is 45, while the median age of the population is 42.

A. INVOLVEMENT IN ILLEGAL BEHAVIOR

Information was gathered about respondents' involvement in eight illegal activities: theft of property worth less than \$20, theft of property worth \$20 or more, gambling illegally, cheating on tax returns, intentionally inflicting physical injury (battery), littering, illegal use of fireworks within the city limits, and driving while under the influence of alcohol. The first five offenses were drawn from Tittle's research.³⁴ For each of the eight offenses, respondents were asked if they had committed the offense and whether they thought they would commit the offense in the future. Respondents recorded their answers to these questions on a separate sheet and did not have to reveal them to the interviewer. For both past-involvement and estimated future-involvement, a code of 0 was assigned to "no," and a code of 1 was assigned to "yes." Thus, the mean for an offense indicates the proportion of the sample who have committed, or think they will commit the offense. These means and the corresponding variances are in the top two panels of table 1.

B. PERCEIVED CERTAINTY OF ARREST

In accord with the argument presented earlier, respondents were asked to "estimate the chance *you* would be arrested by the police if *you* did each of these things." The response options and their codes for each offense are (1) definitely would not be, (2) probably would not be, (3) probably would be, and (4) definitely would be. The panel labeled "Certainty" in table 1 contains the mean and variance of this item for each offense.

C. PERCEIVED SEVERITY OF PUNISHMENT

Perceived severity of punishment was operationalized as a respondent's assessment of the personal cost of the penalty expected. Respondents were instructed to "imagine you had been arrested and found guilty and the court had decided what your punishment would be." Then they were asked to "think about what that punishment probably would be for you," but were not asked to record what they thought the sentence would be. Instead, they were asked to "indicate how big a problem that punishment would create for your life." The response options and codes were (1) no problem at all, (2) hardly any problem, (3) a little problem, (4) a big problem, and (5) a very big problem. Means and variances of this item for all eight

offenses are in the panel of table 1 labeled "Severity."

D. THREAT OF SOCIAL DISAPPROVAL

Threat of social disapproval, as in most previous studies, was indexed by the extent of friends' illegal behavior. Respondents were instructed to "think of the five adults you know best." For each offense, respondents were asked how many of the five they thought had committed the offense. For later analysis, the scores have been inverted so that a low score on the raw item indicates a high threat of social disapproval. The means in the panel of table 1 entitled "Threat of Social Disapproval," therefore, are the number of the five closest acquaintances who have *not* committed the offenses.

E. MORAL COMMITMENT TO THE LEGAL NORM

As in previous studies, moral commitment was measured by the following item: "For each offense, please tell me if you think it is (1) never wrong to do it, (2) seldom wrong to do it, (3) sometimes wrong to do it, (4) usually wrong to do it, or (5) always wrong to do it." The bottom panel of table 1 contains the mean and variance of this item for each offense.

F. SCALE CONSTRUCTION

Several previous researchers have tested deterrence hypotheses using composite scales rather than, or in addition to, individual offenses. In other words, scales for each type of judgment reflect the aggregate of responses to the question for each of the offenses. Silberman has provided a theoretical rationale for preferring such an analysis. His rationale has the additional advantage of generating variables which approximate an interval level of measurement and which are analyzable with familiar multiple regression techniques.³⁵

To justify using composites in the present analysis, factor analysis was conducted for each set of items to determine if they were unidimensional. Application of the scree test described by Gorsuch to the complete principal components solutions showed that a one-factor model fits the correlation matrix for each set of items.³⁶ Thus, each item set appears to be tapping a single dimension. Next, an examination of the factor loadings on the first principal factor for each set of items demonstrated that loadings for all sets are above .35, and most are in the range of .50 to .70. Each composite scale

³⁴ Tittle, *supra* note 2.

³⁵ Silberman, *supra* note 7, at 455.

³⁶ R. GORSUCH, *FACTOR ANALYSIS* (1974).

TABLE 1
MEANS AND VARIANCES OF ALL ITEMS FOR ALL OFFENSES (N = 390)

Questionnaire Item	Offense							
	Theft, \$20 or More	Illegal Gambling	Tax Cheating	Theft, Less Than \$20	Hurting Someone	Littering	Illegal Fireworks	Drunk Driving
Illegal Behavior (Self-reported Past)								
Mean	.231	.508	.249	.529	.259	.733	.690	.505
Variance	.178	.251	.187	.250	.192	.196	.215	.251
Illegal Behavior (Estimated Future)								
Mean	.082	.464	.313	.169	.149	.503	.464	.300
Variance	.075	.249	.216	.141	.127	.215	.249	.211
Perceived Certainty of Arrest								
Mean	3.005	2.170	2.437	2.400	2.950	1.952	2.050	2.975
Variance	.680	.631	.811	.715	.687	.645	.587	.749
Perceived Severity of Punishment								
Mean	4.258	3.441	3.840	3.617	4.180	2.754	2.556	4.393
Variance	.751	1.301	1.254	1.216	.923	1.375	1.621	.778
Threat of Social Disapproval								
Mean	3.694	2.221	2.947	2.852	3.927	1.283	1.573	2.514
Variance	2.822	3.921	3.705	4.081	2.252	3.367	3.508	3.414
Moral Commitment to the Norm								
Mean	4.873	3.673	4.312	4.835	4.753	4.725	3.965	4.739
Variance	.196	1.680	1.130	.203	.321	.454	1.364	.327

was then constructed by summing the z-score transformation of the item for all eight offenses. Finally, Cronbach's alpha was computed as an internal-consistency measure of reliability for each scale. The values of alpha are .82 for perceived certainty, .88 for perceived severity, .83 for threat of social disapproval, .78 for moral commitment, .73 for self-reported past involvement in illegal behavior, and .74 for estimated future involvement in illegal behavior.³⁷

G. THREAT OF LEGAL PUNISHMENT AS THE PRODUCT OF CERTAINTY AND SEVERITY

Earlier discussion suggested that the threat of legal punishment is a multiplicative function of its perceived certainty and severity. If either of these components is zero, perceived threat of legal punishment is zero. A previous article based on these same data demonstrates the utility of this conceptualization of the core independent variable in deterrence theory.³⁸

The scales of perceived certainty and perceived severity were formed by summing z-score transformations of items. Thus, negative numbers reflect the low scores and positive numbers reflect high scores. Multiplying extremely low scores or ex-

tremely high scores for both variables, would result in a high positive product. To avoid this problem, the lowest score in the distribution was added to each score on certainty and severity scales. This procedure created adjusted scales with all positive scores. The product of these adjusted scales measures perceived threat of legal punishment, and is strongly related to both perceived certainty ($r = .83$) and perceived severity ($r = .74$).

IV. ANALYSIS

A. BIVARIATE CORRELATIONS

Table 2 reports bivariate correlations among all scales to be used in the multivariate analyses. Each of the three inhibitory variables correlates significantly and in the expected direction with both measures of involvement in illegal behavior. With I_p (self-reported past involvement) as the dependent variable, the correlations with L (perceived threat of legal punishment) and M (moral commitment) are approximately equal ($-.40$ and $-.42$), and both are somewhat smaller than the correlation of $-.59$ between S (threat of social disapproval) and I_p . With I_f (estimated future involvement) as the dependent variable, the correlations with S and M are approximately equal ($-.51$ and $-.55$), and both are somewhat larger than the correlation of $-.34$ between L and I_f .

³⁷ The details of this scaling procedure are available from the authors upon request.

³⁸ Grasmick & Bryjak, *supra* note 10.

Although the inhibitory variables correlate significantly with one another (r 's of $+.37$, $+.29$ and $+.42$), these bivariate relationships are not extremely strong. In general, the independent variables are more strongly correlated with the dependent variables than they are with each other. Therefore, the overall R^2 with all three inhibitory variables as predictors of illegal behavior should be greater than any individual r^2 between an independent and a dependent variable. Furthermore, the strong correlation ($r = +.74$) between I_p and I_f , the alternate measures of the dependent variable, suggests that the general pattern of multivariate relationships will be similar for both measures.

B. CONDITIONAL RELATIONSHIPS

The two conditional hypotheses extracted from previous writings are, first, that the inverse effect of L on I_p (or I_f) is greater when M is low than when M is high and, second, that the inverse effect of L on I_p (or I_f) is smaller when S is low than when S is high. Cohen and Cohen describe a procedure for testing such hypotheses.³⁹ The procedure is analogous to analysis of covariance but summarizes all the information in a single regression equation. The conditional variable (in this case, M or S) is dichotomized and assigned scores of 0 and 1 to indicate low and high values. Then, the dependent variable is regressed on the quantitative variable (in this case, L), on the dichotomy, and on the product of the quantitative variable and dichotomy. This regression estimates the coefficients in the equation $Y' = a + b_1X + b_2D + b_3XD$, where X is the quantitative independent variable and D is the dichotomy. The coefficient b_1 is the slope of the regression of Y on X for cases with scores of 0 on D since, when $D = 0$, $Y' = a + b_1X$ (i.e., all terms containing D drop out of the equation when $D = 0$). On the other hand, when $D = 1$, then $Y' = (a + b_2) + (b_1 + b_3)X$. Thus, when $D = 1$, the slope of the regression of Y on X is $b_1 + b_3$. If b_3 is significant, then the difference between these two slopes (effects) is significant.

To use this procedure M and S were dichotomized at their medians and the following regressions were performed: $I' = a + b_1L + b_2M_D + b_3LM_D$, and $I' = a + b_1L + b_2S_D + b_3LS_D$. The hypothesis concerning moral commitment as a conditional variable predicts that in the first equation

b_1 will be negative and b_3 will be positive. In this case $b_1 + b_3$ would be a smaller negative number when $M = 1$ than when $M = 0$. If this is true and if b_3 is significant, then perceived threat of legal punishment would have a greater deterrent (i.e., inverse) effect when moral commitment is low than when moral commitment is high. The hypothesis concerning threat of social disapproval predicts that in the second equation b_1 will be negative and b_3 will be negative. Under this hypothesis, L would have a larger inverse effect on involvement in criminal behavior when S is high ($b_1 + b_3$) than when S is low (b_1).

Table 3 presents the results of this test of the conditional hypotheses. For each hypothesis, I_p and I_f have been used as alternative measures of the dependent variable.

The top two panels of the table contain the results with moral commitment as the conditional variable. With self-reported past involvement in illegal behavior (I_p) as the dependent variable, the b of -0.0116 associated with L is the effect of threat of legal punishment when moral commitment is low (i.e., $M_D = 0$). This b is significant beyond the .001 level. (With the specified degrees of freedom, an F of 10.83 is required for significance at the .001 level). The sum of this b and the b of $+0.0046$ associated with LM_D is the effect of L on I_p when moral commitment is high (i.e., $M_D = 1$). This sum is -0.0070 . Thus, as the conditional hypothesis predicts, the magnitude of the inverse effect of L on I_p is greater when moral commitment is low than when moral commitment is high. However, the difference between the two slopes (i.e., the b associated with LM_D) is not significant at the .05 level. (An F of 3.84 is required for significance at the .05 level). Therefore, the difference between slopes must be attributed to chance. The same conclusion is reached with I_f as the dependent variable in the second panel of table 3. The b of $+0.0027$ associated with LM_D , although in the direction predicted by the conditional hypothesis, is not significant. Thus, the evidence suggests that the deterrent effectiveness of perceived threat of legal punishment is not contingent upon the level of moral commitment.

The bottom two panels of table 3 contain the test for threat of social disapproval as a conditional variable. With I_p as the dependent variable, the b associated with LS_D is positive ($+0.0042$), contrary to the hypothesis from previous writings, but is not significant. Therefore, the deterrent effect of perceived threat of legal punishment does not vary

³⁹ J. COHEN AND P. COHEN, *APPLIED MULTIPLE REGRESSION/CORRELATION ANALYSIS FOR THE BEHAVIORAL SCIENCES* 291-343 (1975).

TABLE 2
BIVARIATE CORRELATIONS AMONG SCALES*

	L	S	M	I _p	I _f
L	(158.4)				
S	+ .37	(5.38)			
M	+ .29	+ .42	(4.90)		
I _p	- .40	- .59	- .42	(4.68)	
I _f	- .34	- .51	- .55	+ .71	(4.71)

* The diagonal entries are standard deviations, and the off-diagonals are Pearsonian correlations. All correlations are significant beyond the .001 level. The scale abbreviations are: L = threat of legal punishment; S = threat of social disapproval; M = moral commitment to legal norms; I_p = self-reported past involvement in illegal behavior; I_f = estimated future involvement in illegal behavior.

TABLE 3
TESTS OF CONDITIONAL HYPOTHESES

Dependent Variable	Independent Variable	Beta	b	F _{1,386}	p	Y-intercept	R ²	F _{3,386}	p
I _p	L	-.392	-0.0116	27.05	<.001				
	M _D	-.468	-4.3728	25.72	<.001	+4.6298	.263	45.83	<.001
	LM _D	+.203	+0.0046	2.70	>.05				
I _f	L	-.258	-0.0077	12.14	<.001				
	M _D	-.513	-4.8340	31.97	<.001	+4.0874	.287	51.82	<.001
	LM _D	+.116	+0.0027	0.94	>.05				
I _p	L	-.377	-0.0111	27.18	<.001				
	S _D	-.535	-5.0010	36.87	<.001	+4.8990	.319	60.39	<.001
	LS _D	+.183	+0.0042	2.53	>.05				
I _f	L	-.371	-0.0111	23.21	<.001				
	S _D	-.505	-4.7594	28.93	<.001	+4.4808	.227	37.89	<.001
	LS _D	+.251	+0.0059	4.17	<.05				

with the level of threat of social disapproval. The results with I_f as the dependent variable, however, are surprising. The b for LS_D is +0.0059 and significant at the .05 level. When S is low, the effect of L on I_f is -0.0111 (i.e., the b associated with L); but when S is high the effect of L on I_f is -0.0052 (i.e., -0.0111 plus +0.0059). This difference in slopes is significant in a direction contrary to that predicted in previous writings. Our data indicate that, with estimated future involvement as the dependent variable, perceived threat of legal punishment has a greater deterrent (inverse) effect when threat of social disapproval is low than when

it is high.

This finding should not be overly emphasized since the F of 4.17 associated with the difference between slopes is only slightly larger than the F of 3.84 required for significance at the .05 level and since no previous test of the conditional hypothesis has yielded such a result. On the other hand, no prior studies have used measures similar to L and I_f, and the deterrence literature has offered a rationale for this unique finding.⁴⁰ Matza's discussion of "drifters" suggests that an individual's having

⁴⁰ Jensen, *supra* note 1, at 196.

ties to people conforming to the law will produce conformity by the individual.⁴¹ Fearing social disapproval, these individuals will conform to the law regardless of their perceptions of the threat of legal punishment. Therefore, among individuals having conventional ties and thus facing a high threat of social disapproval, variation in perceived threat of legal punishment should not produce variation in conformity to the law. But when conventional ties are absent or weak, then the threat of legal punishment becomes a major deterrent to illegal behavior. Consequently, among individuals in a situation of low threat of social disapproval, variations in perceptions of the threat of legal punishment should produce variation in conformity to the law. This argument is relatively weakly supported where I_f is the dependent variable.

Thus, the evidence concerning the proposed interaction effect of threat of legal punishment and threat of social disapproval is mixed. Both I_p and I_f , the indicators of the future illegal behavior, provide no support for the common argument that threats of legal punishment deter only when the threat of social disapproval is high. With one of the indicators, I_f , there appears a slight tendency for the threat of legal punishment to deter more effectively when the threat of social disapproval is low. This finding is not matched with I_p as the dependent variable. In the absence of evidence concerning the relative validities of the two indicators of future illegal behavior, the status of this *ex post facto* hypothesis derived from Matza is uncertain in the presented data.

C. EXPLANATORY POWER OF THE INHIBITORY VARIABLES

Table 4 describes the additive effects of the three inhibitory variables on both I_p and I_f as measures of the dependent variable. When comparing the relative direct effects of two or more independent variables in a single group of respondents, the standardized regression coefficients (Betas) are the appropriate statistics.

For both dependent variables, each of the three independent variables has a significant direct effect. With I_p as the dependent variable, the direct effects of L and M are approximately equal (-.172 and -.178), and both are noticeably smaller than the direct effect of S (-.460). However, all three Betas are significant at the .001 level. With I_f as the dependent variable, the direct effects of M and S are approximately equal (-.389 and -.307), and

both are three times as large as the direct effect of L (-.110). In fact, while the Betas for M and S are significant at the .001 level, the Beta for L is significant only at the .05 level. (However, the F of 6.55 is very near the value of 6.64 required for significance at the .01 level).

By current standards in the area of criminology and deviance research, the values of R^2 for the two regressions are quite large. The simple additive model containing only the three inhibitory variables yields R^2 's of .418 with I_p as the dependent variable and .407 with I_f as the dependent variable. Considering the likelihood of attenuation attributable to random measurement error since the reliability coefficients for the scales are less than 1.0, it appears that the model can explain close to half the variance in involvement in illegal behavior. The model admittedly is eclectic in drawing upon a variety of theories and incomplete in including only inhibitory variables. Nevertheless, it can provide the basis for future development of a more comprehensive theory of the etiology of crime and deviance.

V. DISCUSSION

The three independent variables—moral commitment, perceived threat of legal punishment and threat of social disapproval—appear to constitute a concise and probably exhaustive set of factors which inhibit illegal behavior. Deterrence researchers have considered these variables over the past decade, and the results of this study are basically consistent with their findings. This study's contribution is to incorporate all refinements in measurement and all multivariate hypotheses into a single piece of research.

Although even further refinements in measurement are warranted, the next major step for researchers interested in deterrence, or in the etiology of crime and deviance in general, is to link these inhibitory variables with the various theories concerning motivational factors such as anomie, conformity to deviant subcultural norms, and blocked opportunities.⁴² In the data presented, about 60 per cent of the variance in illegal behavior remains unexplained by the set of three inhibitory variables. Most of this variance is probably attributed to variation in levels of motivation to violate the law among the respondents in the sample. Many people who scored low on measures of illegal behavior

⁴² Eve, *A Study of the Efficacy and Interactions of Several Theories for Explaining Rebelliousness Among High School Students*, 60 J. CRIM. L. & C. 115 (1978).

⁴¹ D. MATZA, *DELINQUENCY AND DRIFT* (1964).

TABLE 4
ADDITIVE EFFECTS OF INHIBITORY VARIABLES ON INVOLVEMENT IN ILLEGAL BEHAVIOR

Dependent Variable	Independent Variable	Beta	F _{1,386}	p	R ²	F _{3,386}	p
I _P	L	-.172	16.46	<.001	.418	92.50	<.001
	M	-.178	16.99	<.001			
	S	-.460	106.29	<.001			
I _F	L	-.110	6.55	<.05	.407	88.20	<.001
	M	-.389	79.43	<.001			
	S	-.307	46.43	<.001			

probably did so because they lacked the motivation to violate the law. Inhibitory factors cannot explain this portion of the variance in the dependent variable. In the absence of motivation to engage in illegal behavior, inhibitory factors should be irrel-

evant in the production of conformity to legal norms. It is suggested, therefore, that the inhibitory model presented here actually applies only to those people who, for whatever reason, are ever-motivated to commit illegal acts.