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DELINQUENCY CAUSATION: A TYPOLOGICAL COMPARISON OF PATH MODELS

MADELINE G. AULTMAN*

INTRODUCTION

Studies of the factors that account for delinquent or criminal behavior encompass a wide range of general theoretical issues. Many plausible accounts have been offered concerning the sociological and social psychological processes involved in the production of delinquency. Numerous attempts have been made to research and evaluate our current theoretical ideas in order to determine their relevance in explaining delinquency causation. These attempts have often yielded relatively favorable results. However, we still find ourselves at a stage where we have difficulty specifying the most important predictors of various forms of criminal behavior. We are not too effective in extracting from our theoretical maze of knowledge the unique processes that are most vital in explaining delinquency production of a certain type.

Perhaps the lack of confidence that is often placed in the ability of current theories to explain delinquency is due to our enormous theoretical expectations. It may be somewhat unrealistic to expect delinquency theories to explain all aspects and instances of a behavioral phenomenon. Yet, critics frequently hinder the development process for various ideas by pointing out the particular cases in which a certain proposition does not fit empirically. As Roebuck noted, "Criminologists appear to delight in the destruction of each others' theories."¹ The theoretical disputes encountered in the literature are both provocative and enlightening, but, in the final analysis, may be destructive because they may distract the scientific community from the important task of explaining certain behavioral forms.

In recognition of the diverse reasons that persons

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¹ J. ROEBUCK, *CRIMINAL TYPOLOGY* 17 (1967).

become delinquent, this article suggests that it is worthwhile to retain the various theoretical ideas and to determine the types of behavior that each most accurately explains. This approach entails the construction of a typology of criminal behavior which will be the basis for a series of statistical analyses. The requirements for an acceptable typology have been outlined by Amos and Wellford.² These criminologists state that a desirable classification scheme would be not only exhaustive and mutually exclusive, but would be causally relevant and treatment-predictive as well. Toward these ends, the present research intends to provide a general grouping of factors related to certain offenses and to point out the causes relevant to each behavioral grouping. Such analysis should prepare the way for later efforts toward construction of a treatment-predictive typology.

REVIEW OF THE LITERATURE

Criminal Typologies

The first known criminal typology was developed by Lombroso in 1876. He classified criminals according to various dimensions resulting in the following major types: the born criminal, the insane criminal, and the criminoid.³ His contemporary, Ferri, divided criminals into the following classes: insane, born, occasional, or criminal by passion,⁴ while Garafolo's classification of criminals displayed them as either murderers, violent criminals, criminals lacking in probity, or lascivious criminals.⁵

More recently, the "behavioral system" approach was the basis for much classification of criminal types. This approach owes much to the work of Sutherland and Cressey, who emphasized the group nature of much crime.⁶ The typologies

² Amos & Wellford, *Typologies and Treatment*, in *FUNDAMENTALS OF CRIMINAL BEHAVIOR AND CORRECTIONAL SYSTEMS* 176 (1973).

³ C. LOMBROSO, *L'UOMO DELINQUENTE* (1876).

⁴ E. FERRI, *CRIMINAL SOCIOLOGY* (1917).

⁵ R. GARAFOLO, *CRIMINOLOGY* (1914).

⁶ E. SUTHERLAND & D. CRESSEY, *CRIMINOLOGY* (1974).

presented by Cavan and by Bloch and Geis were seen as attempts to follow Sutherland's directions.⁷

Other typologies of criminals have centered on the integration of various characteristics. For instance, Ferdinand constructed three ideal typologies based on social class position, delinquent behavior, and personality characteristics.⁸ He also proposed that the elements of each ideal type could be integrated for a synthesis of classificatory elements. Rubenfeld's typology was based on containment theory.⁹ While his classifications revealed organization by class position, he also emphasized internal elements. Thus, the theory he developed can be seen as another one attempting integration. Finally, Roebuck proposed that classifications of criminal types be patterned according to legal offense categories.¹⁰ He found that individuals within certain legal categories exhibited similar behavioral traits.

Treatment Typologies

The usefulness of typologies denoting treatment procedures is that they tie the characteristics of the criminal to the relevant treatment needs. Classification procedures are heavily dependent on the development of typologies efficient in designating appropriate treatment alternatives. It is helpful that characteristics of certain offender groups can be used to provide the type of treatment required. Several of the most popular treatment typologies available now will be considered in this context.

The Pilot Intensive Counseling Organization studied subjects in an attempt to make clinical judgments as to whether they would be amenable to treatment.¹¹ Gibbons generated separate typologies for juveniles and adults which linked behavioral types of suggested treatment methods.¹² The Community Treatment Project involved a typology of psychological development. Known as the Interpersonal Maturity Level Theory, this schema denoted four developmental levels which were based on the extent to which an individual is involved with phenomena external to himself.¹³

⁷ See H. BLOCH & G. GEIS, *MAN, CRIME AND SOCIETY* (1962); R. CAVAN, *CRIMINOLOGY* (1950).

⁸ T. FERDINAND, *TYPOLOGIES OF DELINQUENCY* (1966).

⁹ S. RUBENFELD, *FAMILY OF OUTCASTS* (1965).

¹⁰ J. ROEBUCK, *CRIMINAL TYPOLOGY* (1967).

¹¹ Adams, *Interaction Between Individual Interview Therapy and Treatment Amenability in Older Youth Authority Needs*, in CALIFORNIA BD. OF CORRECTIONS, *INQUIRIES CONCERNING KINDS OF TREATMENTS FOR KINDS OF DELINQUENTS 27* (1961).

¹² D. GIBBONS, *CHANGING THE LAWBREAKER* (1965).

¹³ Sullivan, Grant & Grant, *The Development of Interper-*

sonal Maturity: Applications to Delinquency, 20 *PSYCH.* 373 (1957).

Embodying an integration of various theoretical schemes, this typological construction implies the type of treatment appropriate for an individual based on his or her demonstrated maturity level.

METHODOLOGY

Through the use of theoretical models, the ability of current theories to explain various types of delinquent behavior will be evaluated. Three behavioral models will be used in this analysis. By comparing the theories and the complete models in terms of their ability to explain particular delinquent behaviors, we should arrive at a more precise understanding of the causes of delinquency. The models that will be employed in this analysis have been tested elsewhere using a combined measure of delinquency as the dependent variable.¹⁴ The theories which are discussed in this analysis are also reviewed in many texts.¹⁵

Presentation of the Models

The National Strategy for Youth Development Model. Three of the most popular social and social psychological notions concerning crime causation (anomie, alienation, and labeling) have been included in a recent theoretical model developed and tested by the National Strategy for Youth Development.¹⁶ The theoretical model is displayed in Figure 1. The model proposes that both limited access to desirable social roles (e.g., anomie) and negative labeling processes result in delinquent behavior directly and indirectly through the intervening variable of alienation.

The alienation variable is viewed as distinct from the concept of anomie. It is displayed as a more proximate cause of delinquency, an intervening variable that specifies the causal process in greater detail. According to the theory of differential opportunity structures, an individual must be relieved of conventional normative constraints before the lack of legitimate opportunities will result in delinquency. A process of social alienation may be seen to occur when an individual attributes failure in

sonal Maturity: Applications to Delinquency, 20 *PSYCH.* 373 (1957).

¹⁴ M. Aultman, *An Empirical Examination of Some Major Delinquency Correlates* (1976) (doctoral dissertation, Florida State University).

¹⁵ N. DAVIS, *SOCIOLOGICAL CONSTRUCTIONS OF DEVIANCE* (1975).

¹⁶ Behavioral Research & Evaluation Corp., *National Evaluation of Youth Service Systems: Final Report* (Boulder, Colo., 1974).

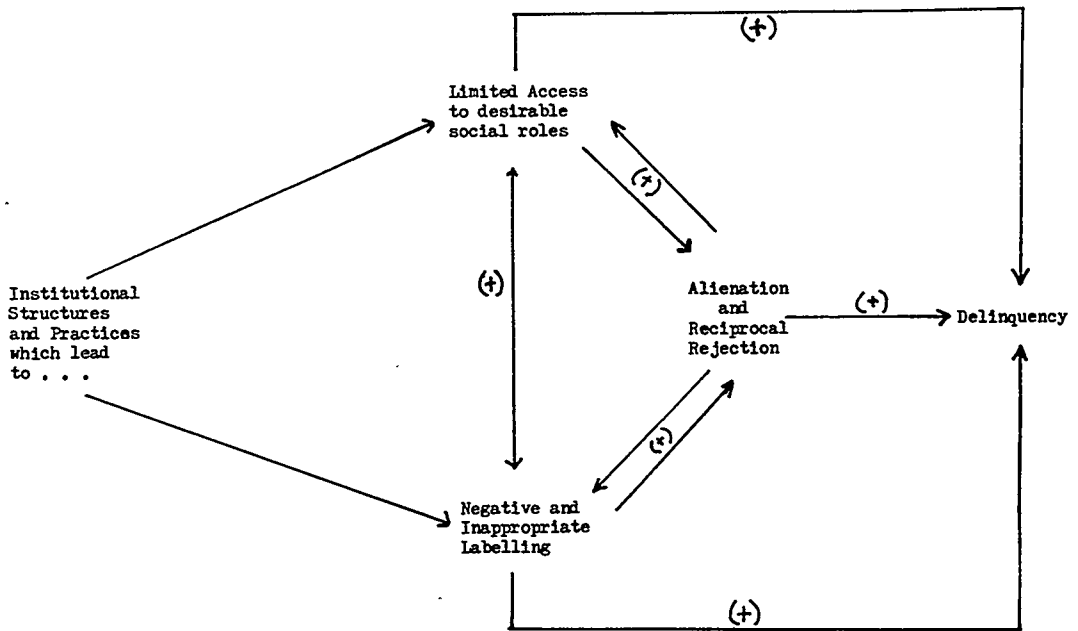


FIGURE 1
Diagram of National Strategy for Youth Development Model.

attaining goals to some inherent injustice in the system rather than to personal shortcomings. This alienation concept has been described in the literature as incorporating components of normlessness,¹⁷ powerlessness,¹⁸ and societal estrangement.¹⁹

This complete model was first tested by the Behavioral Research and Evaluation Corporation.²⁰ The model was found to explain different amounts of the variance for different ethnic groups. For white youths, the model explained 19% of the variance in delinquency. For Blacks and Chicanos, it explained 12% and 40% respectively. In a replication of these findings, it was found that 11% of the delinquency variance was explained by this model, regardless of type of ethnic group.²¹

Hirschi's Social Control Model. The theory of social control as presented by Hirschi is diagrammed in Figure 2.²² This model incorporates all the bonding

elements that Hirschi proposed would restrain man from his natural tendencies to deviate. Hirschi theorized that delinquency would be the result of the loosening of various elements of the social bond including attachment to meaningful persons, commitment to conventional goals, involvement in non-delinquent activities, and belief in the validity of social rules. He also described several ways in which the bonds would work together to control delinquent tendencies. This theoretical scheme is the basis for the second model tested in this analysis. The testing of this model without controlling for type showed that it allowed for the explanation of 20% of the variance in delinquency.²³

The Model of Interpersonal Control. Figure 3 displays the final model tested.²⁴ The Interpersonal Control Model attempts to emphasize the various ways in which controls from other persons influence whether or not an individual becomes delinquent. The theoretical framework assumes that a lack of controls from others could result in delinquency directly, could lower one's self-esteem (which would lead to delinquency), or could account for informal labelling by others resulting in delinquency by reducing one's opportunities for goal achievement

¹⁷ Seeman, *On the Meaning of Alienation*, 24 *AM. SOC. REV.* 783 (1959).

¹⁸ Otto & Featherman, *Social Structural and Psychological Antecedents of Self-Estrangement and Powerlessness*, 40 *AM. SOC. REV.* 701 (1975).

¹⁹ Srole, *Social Interaction and Certain Correlates*, 21 *AM. SOC. REV.* 709 (1956).

²⁰ Behavioral Research & Evaluation Corp., note 16 *supra*.

²¹ Aultman, note 14 *supra*.

²² T. HIRSCHI, *CAUSES OF DELINQUENCY* (1969).

²³ Aultman, note 14 *supra*.

²⁴ *Id.*

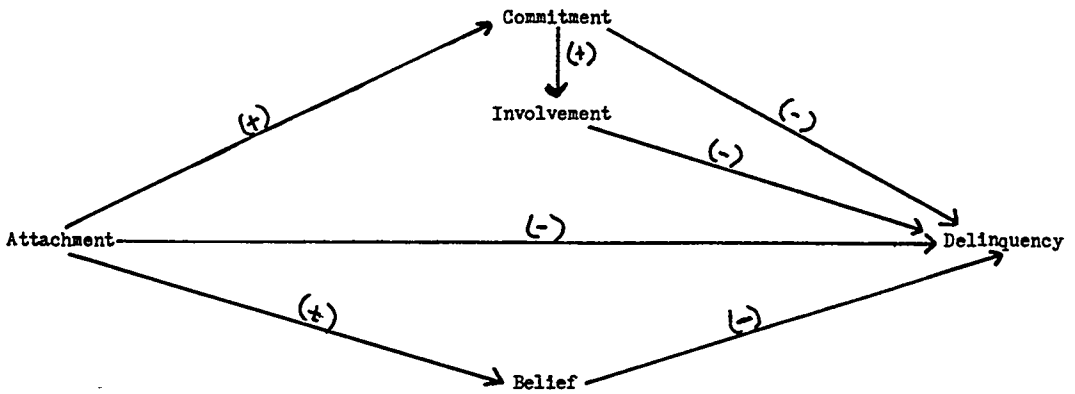


FIGURE 2
Diagram of Hirschi's Social Control Model.

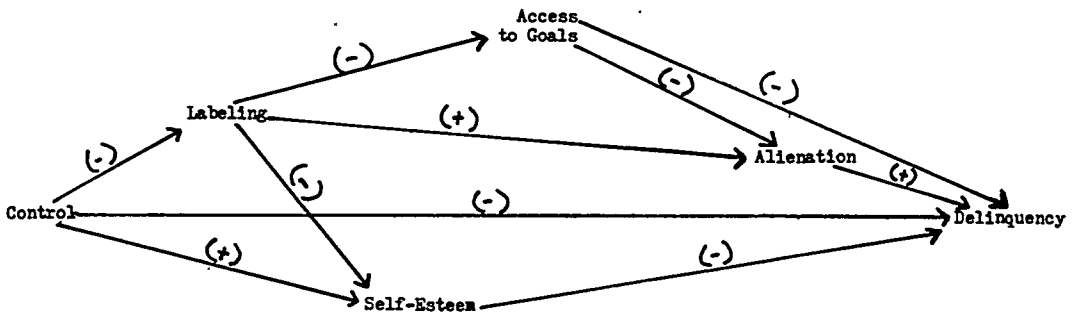


FIGURE 3
Diagram of the Model of Interpersonal Control.

or by increasing one's alienation from society. Previous research has shown that this model allows for 24% of the variance in the combined delinquency variable to be explained.²⁵

Operationalization of Variables

The National Strategy for Youth Development Model. Scale variables were used in the testing of the model.²⁶ Anomie was measured by a combination of two scales which concerned perceived access to desirable educational and occupational roles. The social alienation variable was composed of three scales: normlessness, societal estrangement, and powerlessness. These three scales respectively assessed the extent to which an individual believes that socially unapproved behaviors are required to achieve given goals, the extent to which one feels

alienated from the larger society, and the amount of control that one seems to possess over life events. The labelling variable was also a composite variable. It combined an assessment of how a person thinks parents and teachers would evaluate him or her with feelings of rejection by parents and self-esteem.

Hirschi's Social Control Model. Individual items were combined to achieve the required measures in testing the second model. Attachment was measured according to the individual's educational and occupational goals and the extent to which one was attached to friends (considering that high attachment to non-delinquent friends would serve as a control against delinquency). Commitment was measured by the attitudes of the individual towards school. Assessment of the juvenile's reactions to the opportunities available for conventional activities constituted the measure of involvement. Belief in social rules was reflected in items concerning the individual's attitude toward the validity of laws.

²⁵ *Id.*

²⁶ The scales have been tested for reliability and validity. The reliability coefficients are approximately .7 for most of the scales.

The Model of Interpersonal Control. In testing this model, scale variables were employed. The control variable referred to an individual's perceived rejection by parents and the pressures felt from peer groups. The labelling variable was measured according to perceived labelling by parents and teachers. The variable concerning goal access was measured by the individual's perceived access to desirable educational and occupational roles. The measurement of alienation included the normlessness, powerlessness, and societal estrangement scales. Self-esteem concerned an individual's feelings of self-worth.

Data Collection

This research involves a sample survey of approximately 1,500 students in Leon County, Tallahassee, Florida. The sample was taken by the Youth Needs Survey in March 1975. It was drawn randomly to ensure representativeness. A self-report instrument was used and appears to give a depiction of delinquency that is independent of any factors that may differentiate official delinquents from those not so designated. The sample involved a selection of individuals from grades six through twelve. A stratified cluster sampling technique was used to select a certain number of homerooms for each grade level. A random number was applied to a list of homerooms to generate the requisite number.

DATA ANALYSIS

Construction of the Typology

The typological tool used in this analysis involves the use of legal categories. Such a classification system was based on the type of offense which the individual offender committed. Five categories of offenses were developed: status offenses, petty offenses, property offenses, violent offenses, and drug offenses. Table 1 shows the behaviors that comprise each of these categories of delinquent acts.²⁷

²⁷ This note will provide a statistical attempt to construct a natural typology of delinquency from the data.

Intending to construct a typology of delinquent types, factor analysis was employed to determine which behaviors are similar. Factor analysis is a method used to determine the number and the nature of the underlying variables among some larger number of variables. From sets of measures, it is possible through factor analysis to extract the variance that is common to various factors. Investigating the relations among variables through factor analysis shows us which factors share the same common factor variance and which do not. The method of factor analysis that was employed in this study is termed

The Path Analyses

The National Strategy for Youth Development Model. In order to obtain the relevant path coefficients, regression analyses were performed on each constructed delinquent type. Standardized regression coefficients were set equal to path coefficients. The independent variables were numbered in the following way: variable 1 = anomie; variable 2 = labelling; variable 3 = alienation. The dependent variable (variable 4) could reflect any of the various types of delinquency.

The correlation between the exogenous variables (variables 1 and 2) was set at the zero-order correlation between the variables (which is .233) and remains unanalyzed in this system. From regressing variable 3 on variables 1 and 2, we obtained p_{31} .023 and p_{32} = .342. These coefficients remain the same in the analysis of each delinquent type. The coefficients p_{41} , p_{42} , and p_{43} were obtained by regressing variable 4 on variable 1, 2, and 3. The differences in these coefficients for each model provide some indication as to the relative predictive powers offered by the theoretical variables. Table 2 exhibits the relevant path coefficients. Figure 4 shows the results of the analysis of petty offenses.²⁸

The path analyses of two of the delinquent types (petty and violent offenses) revealed a similarity in the explanation offered by each of the theoretical variables. Alienation consistently showed the highest path coefficient, with the labelling variable having the second strongest direct effect on the

"principal factors method." The major feature of this method is that a maximum amount of variance is extracted as each factor is calculated. See F. KERLINGER, *FOUNDATIONS OF BEHAVIORAL RESEARCH* (1973).

By employing factor analysis in the construction of an offense typology, it was hoped to designate offense types in accordance with factor clusterings. Using the principal factor form of analysis, however, only one substantial factor clustering was located. The table of coefficients that expresses the relations between underlying factors and test variables is called the "factor matrix." *Id.* at 653. This matrix can be seen in Table A and shows the two factors that were located. It is clear that only one of the factors is very highly correlated with the test variables. In Table B, the correlation matrix depicts the variance shared by the variables. Table C provides clarification of the labels used. Substantial correlation between variables indicates common factor variance. All of the correlations in the matrix are greater than .45, suggesting that they all are measuring something in common. Therefore, the attempt to construct a typology through the use of factor analysis was not successful.

²⁸ Only the analysis of the delinquent types which are best explained by each model is presented.

TABLE 1
CONSTRUCTED TYPOLOGY OF DELINQUENT BEHAVIORS

Status	Types of Delinquencies			
	Petty	Property	Violence	Drugs
Give teacher a fake excuse	Taken little things	Taken a car	Beat up kids	Used marijuana
Broken into a place	Taken from kid's locker	Taken something worth \$50	Participate in gang fights	Sold marijuana
Run away	Damaged property		Used force to get money	Used hard drugs
Skipped school without excuse	Taken something worth \$5 to \$50			Sold hard drugs

TABLE A
FACTOR MATRIX OF DELINQUENT BEHAVIORS

Variable	Factor 1	Factor 2	Communality
FAKE	.717	.141	.534
TAKE	.754	-.065	.573
BROK	.824	-.215	.726
CAR	.792	-.192	.665
LOCK	.797	-.199	.676
DAM	.814	-.106	.674
BEAT	.742	-.256	.617
GANG	.768	-.295	.677
TAKE50	.813	-.238	.718
R	.778	-.250	.669
TK5	.827	-.137	.703
FORCE	.762	-.060	.584
UMJ	.699	.543	.785
SMJ	.812	.267	.732
SKIP	.727	.455	.735
SNIF	.771	.020	.595
UDRG	.804	.199	.687
SDRG	.811	.035	.659
UAL	.699	.509	.749

dependent variable. Status offenses showed almost equal effects from the alienation and labelling variable. Anomie had the smallest effect on delinquency for each of these types. Property offenses were affected most largely by alienation. Anomie and labelling showed smaller and roughly equivalent coefficients. For drug offenses, labelling had a more important effect than did alienation, with anomie having an almost negligible input. Thus, the most seemingly important difference in terms of relative size of the path coefficients was between drug offenses and the other delinquent types. For status, petty, violent, and property offenses, alienation was equal to or more significant in the ex-

planatory model than was labelling. However, labelling had a stronger effect than alienation in the case of drug offenses. Nonetheless, anomie showed a small overall contribution that is not significant even in the analysis of violent and drug offenses.

In terms of the total amount of variance explained in each path analysis, the Multiple R^2 for property offenses (.045) was somewhat less than it was for each of the other types. This indicates that the theoretical model is able to explain only 4% of the variance in property offenses. The model is most useful in explaining petty offenses committed by juveniles, where the Multiple R^2 is .089. The other offenses are explained nearly equally. For status, drug, and violent offenses, the National Strategy Model leaves approximately 92% of the variance unexplained.

Two concluding statements may be offered. First, it appears that the theoretical variables may generally be listed in the following order of importance: alienation, labelling, and anomie. However, drug offenses represent an exception to this listing, as labelling is more important to the analysis than alienation. It should also be noted that, while labelling is shown to be of secondary importance to alienation in terms of direct effects, labelling in all cases clearly has a large indirect effect on the dependent variable. The indirect route of interest in this model involves the effect of labelling on alienation ($p_{32} = .342$) which, in turn, has an effect on the various types of delinquent behavior. Thus, labelling is of more importance in delinquency production than is indicated by an analysis of the direct effects.

Secondly, an analysis of the instances in which each theoretical variable is most important to the explanation reveals which types of delinquency yield best to the form of explanation offered by

TABLE B
CORRELATION MATRIX FOR FACTOR ANALYSIS

	FAKE	TAKE	BROK	CAR	LOCK	DAM	BEAT	GANG	TAKE50	R
FAKE	1.000	.578	.587	.551	.568	.571	.502	.523	.554	.504
TAKE	.578	1.000	.654	.599	.625	.638	.546	.540	.608	.536
BROK	.587	.654	1.000	.686	.683	.701	.619	.629	.715	.552
CAR	.551	.599	.686	1.000	.667	.637	.621	.638	.625	.645
LOCK	.568	.625	.683	.667	1.000	.675	.601	.605	.675	.634
DAM	.571	.638	.701	.637	.675	1.000	.633	.628	.667	.624
BEAT	.502	.546	.619	.621	.601	.633	1.000	.680	.566	.582
GANG	.523	.540	.629	.638	.605	.628	.680	1.000	.572	.652
TAKE50	.554	.608	.716	.626	.675	.667	.566	.672	1.000	.687
R	.504	.536	.652	.646	.634	.624	.582	.652	.687	1.000
TK5	.545	.664	.722	.626	.690	.659	.584	.632	.763	.644
FORCE	.450	.474	.608	.575	.551	.583	.590	.581	.583	.574
UMJ	.539	.495	.472	.477	.474	.531	.401	.422	.456	.427
SMJ	.528	.557	.616	.579	.575	.612	.517	.538	.592	.576
SKIP	.639	.512	.487	.511	.501	.559	.457	.456	.506	.452
SNIF	.430	.542	.562	.566	.572	.563	.531	.563	.601	.591
UDRG	.520	.538	.586	.565	.534	.565	.514	.535	.572	.570
SDRG	.475	.502	.614	.606	.601	.582	.547	.579	.616	.627
UAL	.550	.503	.498	.458	.479	.533	.434	.412	.461	.439
	TK5	FORCE	UMJ	SMJ	SKIP	SNIF	UDRG	SDRG	UAL	
FAKE	.545	.450	.539	.528	.638	.430	.520	.475	.550	
TAKE	.664	.474	.495	.557	.512	.542	.538	.502	.503	
BROK	.722	.608	.472	.616	.487	.562	.586	.614	.498	
CAR	.626	.575	.477	.579	.511	.566	.565	.606	.458	
LOCK	.690	.551	.474	.575	.501	.572	.534	.601	.479	
DAM	.650	.583	.531	.612	.559	.563	.565	.502	.533	
BEAT	.584	.590	.401	.517	.457	.531	.514	.547	.434	
GANG	.632	.581	.422	.538	.456	.563	.535	.579	.412	
TAKE50	.763	.583	.456	.592	.506	.601	.572	.616	.461	
R	.644	.574	.427	.576	.462	.591	.570	.627	.439	
TK5	1.000	.574	.503	.605	.553	.565	.614	.649	.540	
FORCE	.574	1.000	.457	.624	.472	.656	.675	.695	.476	
UMJ	.503	.457	1.000	.705	.689	.505	.589	.521	.730	
SMJ	.605	.624	.705	1.000	.623	.647	.731	.713	.629	
SKIP	.553	.472	.609	.623	1.000	.529	.598	.532	.704	
SNIF	.565	.656	.505	.647	.529	1.000	.733	.713	.465	
UDRG	.614	.675	.589	.731	.598	.733	1.000	.820	.572	
SDRG	.649	.695	.521	.713	.532	.713	.820	1.000	.510	
UAL	.540	.476	.730	.629	.704	.465	.572	.510	1.000	

each theoretical variable. Alienation shows its largest effect in the analysis of violent offenses, where its direct effect is .233. Anomie is found to be best in explaining property offenses, where its direct effect on delinquency is .085, while it is not significant to an analysis of either violent or drug offenses. The labelling variable shows the most substantial coefficient when explaining a juvenile's resorting to the use of drugs ($p_{42} = .205$).

Hirschi's Social Control Model. The independent variables in this model were numbered as follows:

variable 1 = attachment; variable 2 = commitment; variable 3 = involvement; variable 4 = belief. The dependent variable (variable 4) again could take the value of any of the constructed delinquent types. Three of the path coefficients were set at the zero-order correlation in each analysis because the model assumed they were directly affected by only one variable. These path coefficients have the following values: $p_{21} = .128$; $p_{41} = .298$; $p_{32} = .275$. The coefficients p_{51} , p_{52} , p_{53} , and p_{54} were obtained by regressing the dependent

TABLE C

KEY TO THE VARIABLES USED IN THE FACTOR ANALYSIS

Variable Label	Description
FAKE	Give teacher a fake excuse
TAKE	Taken little things
BROK	Broken into a place
CAR	Taken a car
LOCK	Taken from a kid's locker
DAM	Damaged property
BEAT	Beat up other kids
GANG	Participated in gang fights
TAKE50	Taken something worth \$50
R	Run away
TK5	Taken something worth \$5 to \$50
FORCE	Used force to get money
UMJ	Used marijuana
SMJ	Sold marijuana
SKIP	Skipped school without an excuse
SNIF	Sniffed glue
UDRG	Used hard drugs
SDRG	Sold hard drugs
UAL	Used alcohol

variable on variables 1 through 4. They demonstrate the explanation which each variable can offer independent of the effects of the others. The comparison may be seen in Table 3.

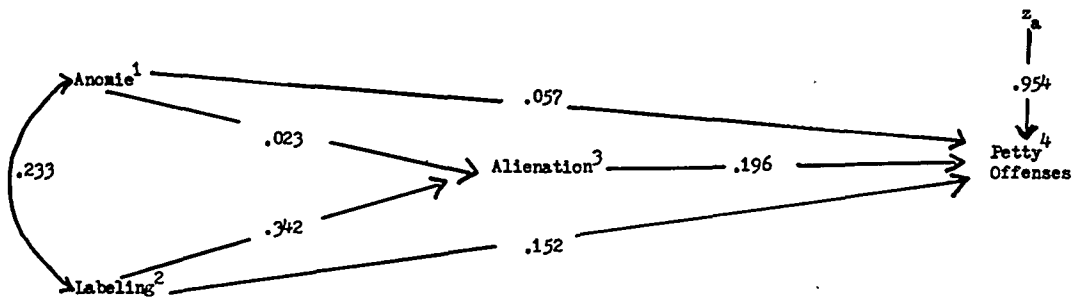
From an inspection of the manner in which the delinquent types were explained by the independent variables, certain contrasts were seen. Status offenses were explained in a manner different from the explanations of the other delinquent behaviors. For petty, property, violent, and drug offenses, belief was better in explaining the behavior than were the other control elements. The variable showing the second largest effect on each of these types was attachment. The only other meaningful direct effect was that of involvement on drug offenses. In contrast, the emphasis on the controlling elements is shifted when status offenses were considered. Belief again appeared to be the most important control, yet involvement had the second largest impact in controlling the behavior.

The results of the path analysis for status offenses

TABLE 2
DIRECT EFFECTS OF NATIONAL STRATEGY VARIABLES ON DELINQUENCY TYPES*

Theoretical Variables	Delinquency Types				
	Status	Petty	Property	Violence	Drugs
Alienation	.160	.196	.138	.233	.128
Anomie	.064	.057	.085	.020	-.004
Labelling	.159	.152	.084	.087	.205
Multiple R ²	.077	.089	.045	.077	.076

* The numbers in the table reflect the relevant path coefficients.



Multiple R = .298
Multiple R² = .089

FIGURE 4

The Path Diagram of National Strategy for Youth Development Model with Petty Offenses as the Dependent Variable.

may be seen in Figure 5. While belief showed the largest direct effect on status offenses, attachment was theoretically assumed to also have an indirect effect on the dependent variable through its effect on commitment and belief. The direct effect of attachment on commitment was .128 and its effect on belief was .298. Considering the amount of variance explained in each of the delinquent types by the social control model, it is evident that the model is best in explaining status offenses. For this type of offense, 16% of the variance is explained by the model.

The Model of Interpersonal Control. In this model, the variables were numbered as follows: variable 1 = control; variable 2 = labelling; variable 3 = access to goals; variable 4 = alienation; variable 5 = self-esteem. The dependent variable is variable 6 and could take on the values of each delinquent

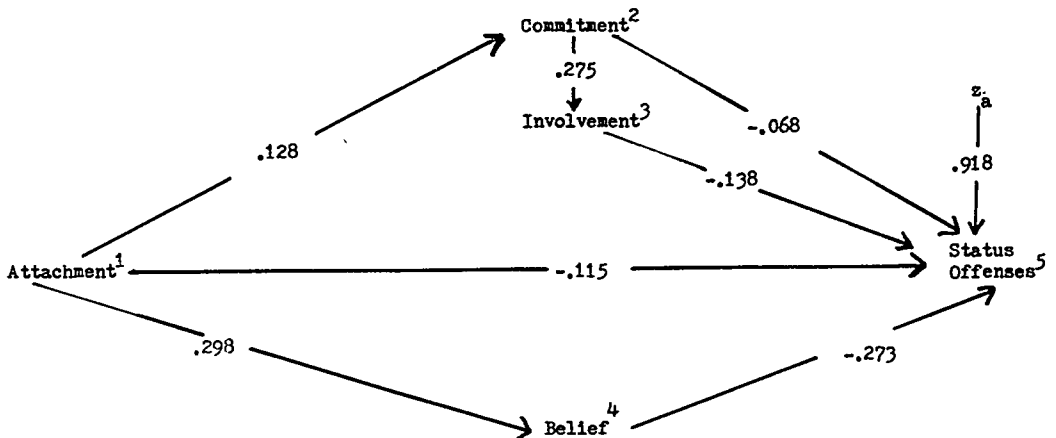
type. The direct effect of control on labelling was set at the zero-order correlation of $-.316$. Similarly, the direct effect of labelling on access to goals was set at the zero-order correlation of $-.271$. Regressing goal access and labelling on alienation and regressing labelling and control on self-esteem yielded the following path coefficients: $p_{43} = -.157$ and $p_{42} = .297$; $p_{51} = .233$ and $p_{52} = -.202$. Table 4 shows the direct effects on each delinquent type.

From an analysis of the direct effects of the independent variables on each behavioral type, it is clear that two of the theoretical ideas are of most importance in explaining all behaviors. For petty, property, and violent offenses, alienation showed the largest direct effect. For status and drug offenses, controls from others seemed to play the largest part in determining behavior. The self-

TABLE 3
DIRECT EFFECTS OF SOCIAL CONTROL VARIABLES ON DELINQUENCY TYPES*

Theoretical Variables	Delinquency Types				
	Status	Petty	Property	Violence	Drugs
Belief	-.273	-.202	-.129	-.122	-.143
Attachment	-.115	-.238	-.296	-.218	-.181
Commitment	-.068	-.058	-.040	-.055	.008
Involvement	-.138	-.060	.004	-.050	-.069
Multiple R ²	.157	.148	.133	.094	.078

* The numbers in the table reflect the relevant path coefficients.



Multiple R = .396
Multiple R² = .157

FIGURE 5

The Path Diagram of Hirschi's Social Control Model with Status Offenses as the Dependent Variable.

teem and access variables were of less importance in each typological analysis. While labelling had only indirect effects in this model, the importance of its contribution in that respect is worth noting.

Figure 6 shows the results of the path analysis with status offenses as the dependent variable. Similar to the social control model, this delinquency model was best able to explain the variance in status offense behavior, with a Multiple R² of .153. Clearly, the most important variable in explaining status offenses was the control variable. With a direct effect of $-.291$, the control variable exerted more impact on the behavioral outcome than did any other variable.

A Comparison of the Models. Table 5 contrasts the amount of variance in each of the types of delinquent behavior. The National Strategy Model seemed best able to explain acts of petty delinquency because the amount of explained variance was almost 9%. The model also showed reduced

ability to explain other types of delinquent behaviors. It was especially deficient in attempts to explain the causal processes operating in the production of property offenses, where the Multiple R² is only .045. This is disappointing since property behavior is of most concern to the control of juvenile crime.

The Hirschi model was best in explaining status offenses, where 16% of the variance was explained in the path analysis. Again, the result is disappointing since the recent trend is toward removing such behaviors from the jurisdiction of the criminal justice system. However, the social control model was better than either of the others in explaining property offenses, where it explained 13% of the variance.

The Model of Interpersonal Control appeared very similar to the Hirschi model in terms of explained variance. For status and petty offenses, the two models explained approximately the same de-

TABLE 4
DIRECT EFFECTS OF INTERPERSONAL CONTROL VARIABLES ON DELINQUENCY TYPES*

Theoretical Variables	Delinquency Types				
	Status	Petty	Property	Violence	Drugs
Self-esteem	.126	.045	.015	.037	.019
Control	-.291	-.197	-.122	-.125	-.241
Access to Goals	-.082	-.028	-.017	-.017	.006
Alienation	.152	.215	.16	.24	.12
Multiple R ²	.153	.147	.074	.119	.12

* The numbers in the table reflect the relevant path coefficients.

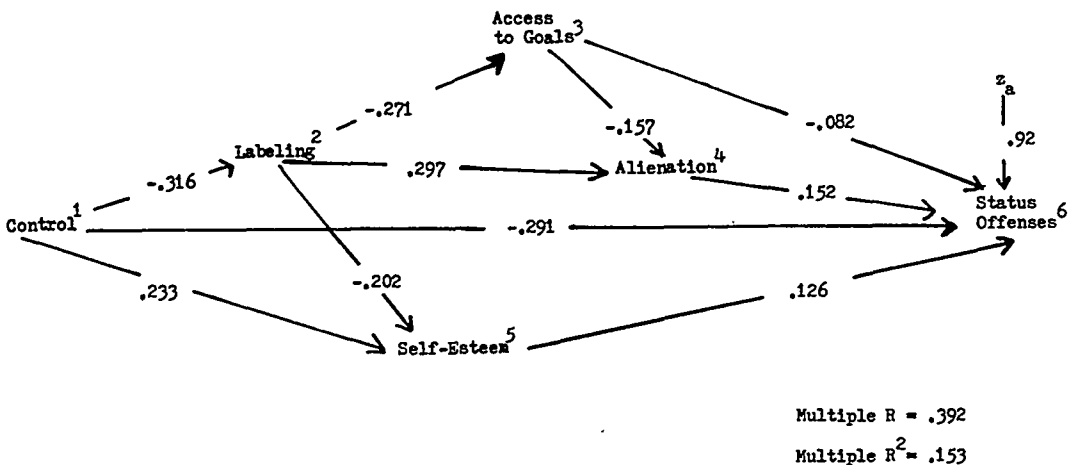


FIGURE 6

The Path Diagram of the Model of Interpersonal Control with Status Offenses as the Dependent Variable.

TABLE 5
A COMPARISON OF THE EXPLAINED VARIANCE OFFERED BY THE PATH MODELS*

Types	National Strategy	Models	
		Hirschi	Interpersonal Control
Status	.077	.157	.153
Petty	.089	.148	.147
Property	.045	.133	.074
Violence	.077	.094	.119
Drugs	.076	.078	.120

* The figures in the table refer to the Multiple R² of the model variables for each delinquent type.

grees of variance. The Interpersonal Control Model was somewhat less efficient in explaining property offenses, but covered a little more of the variance in violent and drug offenses. It is interesting that the Interpersonal Control Model (which actually adds only one scale variable to the National Strategy Model) was able to explain nearly twice as much variance for each delinquent type. This must be considered a reflection of the nature of the additional variable. The peer group pressure variable included in the measurement of control allowed the Interpersonal Control Model to explain the larger amount of variance. Additional testing showed similar results when the peer pressure scale was used as the sole component of the control variable. This suggests that reduced controls from peers was an important factor in determining an individual's delinquency. Considering that the Hirschi model and the Interpersonal Control Model explained more and similar amounts of variance, it can be concluded that control is an important concept in efforts to understand delinquency.

DISCUSSION

In testing the National Strategy Model, it was interesting to observe that labelling held more importance for the explanation of drug offenses than did alienation. This seems surprising in view of the popular association of drug use with that sector of the youthful population which experiences alienation from the dominant society. Perhaps the larger effect that labelling had on drug use in this study suggests that, in the 1970's, youths use drugs for different reasons than they did earlier. Drug use appears to be not only a response to social alienation, but a consequence of negative reactions from others and unfavorable feelings about self. The Model of Interpersonal Control provided another interesting perspective on the causes of drug use by revealing that reduced controls from others play a significant part in the participation in the

drug culture. This emphasizes the importance of peer pressure in drug involvement.

Another key observation is that some theoretical variables were of minute importance in explaining even a specific type of delinquency. The most outstanding example was that the anomie variable was found to be of questionable utility in virtually all cases. That finding supports the popular notion that anomie is a less important explanation than once thought. It is also true, however, that variables reflecting poverty situations should really be useful only when dealing strictly with a sample of lower-class subjects. Other variables that tested poorly were the self-esteem variable and Hirschi's commitment and involvement variables.

When comparing the amount of variance explained by the models in each of the types of delinquency, it becomes clear that the explained variance in all cases was rather low. Comparing these results to those obtained from the same data base where the dependent variable of delinquency was not broken down into types, it is noted that the variance in delinquency explained by the National Strategy Model, the Hirschi Model, and the Interpersonal Control Model was 11%, 20%, and 24% respectively.²⁹ This loss of explained variance with increased specificity is statistically reasonable, but illustrates that the explanation of global concepts is more easily achieved than is the more precise kind of information required for a meaningful analysis.

Finally, when we specify more narrowly the type of delinquency we are explaining, it is with the less serious forms of delinquency (*i.e.*, status and petty offenses) that we are the most successful. This seems likely to be a result of the type of theories which are available for inclusion in such models of causation. The theories with which we attempt to explain delinquency seem to be aimed toward

²⁹ Aultman, note 14 *supra*.

minor misbehaviors by youth. Criminology might be more productive if it considered the more serious displays of delinquent behavior and turned its attention to the development of theories which focus on those aspects of delinquent behavior.

CONCLUSION

In this study, all three of the tested models worked best when directed towards the explanation of status and petty offenses. The types of behavior more important to efforts towards treatment and prediction (*e.g.*, property and violent offenses) are

less well explained by the models. This suggests that criminologists should give more attention to developing theoretical models effective in explaining the variance in these particular types of delinquency. Also, control models consistently explained more variance in each type of delinquency than did a model in which the control aspect was absent (*e.g.*, the National Strategy Model). The conceptualization of control in terms of parental regulation and peer pressure implicit in both the Hirschi and Interpersonal Control Models appears to be one of the most important variables yet developed for explaining delinquency.