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# Seriousness of Offenses: An Evaluation by Offenders and Nonoffenders, The

Robert M. Figlio

# THE SERIOUSNESS OF OFFENSES: AN EVALUATION BY OFFENDERS AND NONOFFENDERS

## ROBERT M. FIGLIO *

The research reported here concerns the determination of the subjective severities of various kinds of criminal offenses as judged by convicted offenders and by nonoffenders. The study aims to determine if convicted offenders rate the seriousness of offenses in the same manner as do middle-class nonoffenders with regard to (1) offense ranking, (2) absolute and relative weight given to each offense and, (3) degree of consensus about the seriousness of each offense.

There are few precedents in the literature dealing with this topic.[1] Prison inmates have not been asked to evaluate general offensive behavior in these terms systematically with a sensitive instrument. Until very recently an undertaking such as this would have been difficult to accomplish. While the literature abounds with discussions and tables so familiar to criminologists concerning the numbers and kinds of crimes observed among individuals, groups, societies, etc., little has been available regarding the subjective content of the criminal acts. The various types of criminal or delinquent behavior have been a traditional interest for criminologists but, surprisingly, a carefully conceived attack on the determination of the seriousness of violative activity did not begin until the published work of Sellin and Wolfgang in 1964.[2]

Building on the work of S. S. Stevens in the field of psychophysical scaling, Sellin and Wolfgang developed a subjective measuring stick for assessing the severity of various delinquent acts based on the judgments of juvenile court judges, police officers and college students.[3] They were able to scale the gamut of delinquent behavior involving components of injury, theft and/or damage down to the rather insignificant forms of deviant activity resulting in no injury, theft or damage along a continuum for which a power function was found to be an adequate fit.

The stimuli developed for this purpose have been administered to a variety of cross-cultural subject groups in Canada, England, Belgian Congo, Taiwan, Indonesia, Brazil, Mexico and Puerto Rico.[4] Cultural differences have ap-

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[1] But see Hsu, A Study of the Differential Responses to the Sellin-Wolfgang Index of Delinquency, 1969 THE SOCIOLOGICAL COMMENTATOR 41, where the author found that the ordering of offenses by eighty-four inmates at the Ashland, Kentucky reformatory was roughly similar to that reported by Sellin and Wolfgang, although the assigned values were markedly different. See also Sechrest, Comparison of Inmate's and Staff's Judgments of the Severity of Offenses, 6 J. RES. CRIME & DELINQUENCY 41 (1969), where research found no difference between inmates and prison staff on a scale developed by M. Warren and E. Reimer. M. WARREN & E. REIMER, THE WARREN-REIMER OFFENSE SEVERITY SCALE (1959).

[2] See T. SELLIN & M. WOLFGANG, THE MEASUREMENT OF DELINQUENCY (1964).

[3] For a discussion of psychophysical scaling techniques and their applications in this subject matter see Akman, Figlio & Normandeau, Concerning the Measurement of Delinquency—A Rejoinder and Beyond, 7 BRIT. J. CRIM. 442 (1967); Rose, Concerning the Measurement of Delinquency, 6 BRIT. J. CRIM. 414 (1966); Stevens, A Metric for the Social Consensus, 151 SCIENCE 530 (1966); Stevens, On the Operation Known As Judgment, 54 AM. SCIENTIST 385 (1966); Wilkins, New Thinking in Criminal Statistics, 56 J. CRIM. L.C. & P.S. 277 (1965). For discussions on the application of magnitude (ratio) estimation procedures to non-physical continua see R. Hamblin, Ratio Measuremnt and Sociological Theory (unpublished manuscript at Washington University, St. Louis, Missouri).

[4] See Akman & Normandeau, The Measurement of Crime and Delinquency in Canada: A Replication Study, 1 ACTA CRIM. 135 (1968); Akman & Normandeau, Towards the Measurement of Crime and Delinquency in England, CRIM. L. REV. (1968); Akman, Normandeau & Turner, Replication of a Delinquency and Crime Index in French Canada, 8 CANADIAN J. CORRECTION 1 (1966); De Boeck & Houchon, Prologomenes a Une Statistique Criminelle Congolaise, VI CAHIERS ECONOMIQUES ET SOCIAUX, nos. 3–4 (1968). See also J. BRYAND, M. CHAMBERS & D. FALCON, PATROL DEVELOPMENT (Department of Operational Research of the University of Lancaster) (1968); P. ENNIS, CRIMINAL VICTIMIZATION IN THE UNITED STATES: A REPORT

peared, although the Canadian and English respondents appear to rate offense severities somewhat similarly to Americans. This "index of delinquency" has also been used successfully in a variety of research settings to supplement the usual "counts and classifications" approach to criminal behavior.[5]

Sellin and Wolfgang assert that American society is based on the middle-class value system, and that their scale is a measure of that set of values, at least as applied to the seriousness of various kinds of offenses. That some of the replications, particularly those in Canada,

have yielded quite similar scales lends support to the thesis that something reproducible is happening and that a degree of confidence is justified in the use of the scale. In any event we shall accept the scale as it stands for the purpose of this investigation in order to maintain comparability with the Sellin-Wolfgang findings. Thus, this study shall attempt to determine if the people who actually commit serious crimes consider the severity of that behavior in ways similar to or divergent from a middle-class sample.[6]

## METHOD[7]

From Rahway Prison, an adult penal institution of some 1000 inmates situated in the Trenton-New York conurbation, a sample of some 200 respondents was drawn (of which 193 actually took part), while the whole population of 524 residents of Annandale Farms, a juvenile detention center in rural New Jersey, was asked to take part in the study. The problems of scheduling and security were such that the number of participants had to be limited at Rahway Prison.

In addition, the undergraduate sociology classes (216 students) of the University of Pennsylvania were asked to respond to the Sellin-Wolfgang scale, first, to provide test-retest capability with the original study of 1964[8]

OF A NATIONAL SURVEY, (National Opinion Research Center, University of Chicago) (1967); A. Brancato, Replications of the Sellin-Wolfgang Index of Delinquency, 1970 (unpublished manuscript at the University of Pennsylvania); Hsu, *supra*, note 1; M. Hsu (with the collaboration of A. Normandeau), The Measurement of Crime and Delinquency in Taipei, 1968 (unpublished manuscript at the University of Pennsylvania); A. Normandeau and A. Sa'danoer, Towards the Measurement of Crime and Delinquency in Indonesia, 1968 (unpublished manuscript at the University of Padang); G. Reiss and A. Normandeau, Measuring Criminality in Brazil, 1968 (unpublished manuscript at the University of Rio); B. Bell and A. Normandeau, A Crime Index for Mexico, 1968 (unpublished manuscript at the University of Mexico); A. Velez-Diaz, An Investigation of Differences in Value Judgments between Youthful Offenders and Non-Offenders in Puerto Rico, 1969 (unpublished manuscript at Florida State University); A. Walker, Replication of Philadelphia-Montreal Scaling of Seriousness of Offenses, 1966 (unpublished manuscript at Harvard University).

[5] *See* A. Normandeau, *Trends in Robbery as Reflected by Different Indexes*, in DELINQUENCY: SELECTED STUDIES (T. Sellin & M. Wolfgang, eds. 1969); M. WOLFGANG, R. FIGLIO & T. SELLIN, DELINQUENCY IN A BIRTH COHORT (1972); W. MAHONEY, MEASURING THE EFFECTIVENESS OF CRIMINAL REHABILITATION PROGRAMS, OCCASIONAL PAPERS #5, DEPT. OF HEALTH, EDUCATION AND WELFARE (1968); W. MAHONEY & C. BLOZAN, COST-BENEFIT EVALUATION OF WELFARE DEMONSTRATION PROJECTS: A TEST APPLICATION TO JUVENILE REHABILITATION; RMC REPORT UR-040, DEPT. OF HEALTH, EDUCATION AND WELFARE (1968); F. Cannavale, Testing the Usefulness of the Index of Delinquency for Police, 1967 (unpublished mimeo at the University of Pennsylvania); F. Cannavale & B. Curnow, A Comparison of Delinquency Indices, 1967 (unpublished mimeo at the University of Pennsylvania); N. McGravy & D. Delahanty, Community Rehabilitation of the Younger Delinquent Boy, 1967 (final report of H.E.W. on the results of the activities of the Parkland Non-Residential Group Center in Louisville, Ky.); Craig & Budd, *The Juvenile Offenders: Recidivism and Companions*, 13 CRIME AND DELINQUENCY 344 (1967); Gold, *Undetected Delinquent Behavior*, 13 J. RESEARCH IN CRIME & DELINQUENCY 27 (1966).

[6] It is not the intent here to overlook the problem of unreported crime, "hidden delinquency" or other factors which may have a bearing upon the defining of the dichotomy offender-nonoffender. It may be that the so-called "nonoffender" sample used in this study may have offenders in it. However, for our purposes, at this time, we need only consider the modal type of each group. On that level, at least, convicted offenders surely represent a different social grouping than do college students.

[7] In 1967 Dr. Lloyd W. McCorkle, then Director of Institutions and Agencies for the State of New Jersey, was asked to lend his approval of and aid to this project which required contact with prisoners. Through his associate, Mr. Albert C. Wagner, Director of the Division of Correction and Parole, meetings with Mr. James Benedict, statistical assistant in charge of research and records, Mr. Warren Pinto, Superintendent of Rahway Prison, and Mr. U. Samuel Vukcevich, Superintendent of Annandale Farms, were conducted over a period of some months so that the project could be explained and its feasibility within the prison system determined. Needless to say, without the enthusiastic cooperation and assistance of these men, the undertaking of this project would have been impossible.

[8] *See* T. SELLIN & M. WOLFGANG, *supra* note 2, at 281–83.

and second, to enable testing of the comparisons among the various respondent groups. Such testing is not possible with data from *The Measurement of Delinquency* because the offense dispersions were not presented in a form congenial to this purpose.

Test booklets similar to those used by Sellin and Wolfgang were distributed to the inmates and students[9] and instructions for filling out the booklet appeared in each booklet and were read by the author to each group. Questions regarding the meaning of the various stimuli were entertained during the complete test period. In those cases where the respondent was unable to read, the scale was read aloud and the response entered by the author or one of his assistants.

As in the Sellin-Wolfgang study, two kinds of scales were administered: category and magnitude.[10] In the category scale each subject was asked to circle the number from one to eleven (least to most serious) which best represented how serious he thought that particular offense was. In the magnitude scale, the subject was asked to choose any number which adequately represented the seriousness of that particular offense description. The category scale has the advantage of being easy to visualize and to understand, but it is also numerically constraining. The magnitude scale, while having no such constraint, requires greater abstraction in the thought process. Thus, even though the utility of the category scale suffers because of its mechanical simplicity, it was included as a "back-up" to provide at least some indication of the judged severity of offense if the magnitude stimuli were too difficult for the inmates to score. Such fears later proved groundless, as the prisoners were quite able to make magnitude judgments.

The items of the scale were revised slightly to keep the language as simple as possible.[11] Both scales use the same stimuli with the items randomly assigned so as to minimize the effect of earlier responses on any subsequent evaluation. In the aggregate, the impact of these a posteriori intrusions is minimal. The following constituted the list of stimuli:

## TABLE I
### *Offense Stimuli*

A) The offender is a male.
   An offender takes $5 worth of property. He did it by himself and he did *not break into or enter a building*.

B) The offender is a male.
   An offender takes $20 worth of property. He did it by himself and he did *not break into or enter* a building.

C) The offender is a male.
   An offender takes $50 worth of property. He did it by himself and he did *not break into or enter* a building.

D) The offender is a male.
   An offender takes $1000 worth of property. He did it by himself and he did *not break into or enter* a building.

E) The offender is a male.
   An offender takes $5000 worth or property. He did it by himself and he did *not break into or enter* a building.

F) The offender is a male.
   An offender takes $5 worth of property. He did it by himself and he *broke into a building*.

G) The offender is a male.
   An offender *without a weapon* threatens to hurt a victim unless the victim gives him money. The offender takes the victim's money ($5) and leaves without hurting the victim.

H) The offender is a male.
   The offender *with a weapon* threatens to hurt a victim unless the victim gives him money. The offender takes the victim's money ($5) and leaves without hurting the victim.

I) The offender is a male.
   An offender injures a victim. The victim *dies* from the injury.

J) The offender is a male.
   An offender injures a victim. The victim is treated by a doctor and his injuries require him to be *hospitalized*.

K) The offender is a male.
   An offender injures a victim. The victim is treated by a doctor, but his injuries do *not* require him to be hospitalized.

L) The offender is a male.
   An offender shoves (or pushes) a victim. The vcitim does *not* require any medical treatment.

M) The offender is a male.
   An offender forces a female to submit to sexual intercourse. No other physical injury is inflicted.

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[9] *See* T. SELLIN & M. WOLFGANG, *supra* note 2, at 253–55.

[10] For a discussion of the details of these two scale types see T. SELLIN & M. WOLFGANG, *supra* note 2, at 236–53.

[11] For the original version see T. SELLIN & M. WOLFGANG, *supra* note 2, at 397–98.

TABLE I—Continued

N)  The offender is a male.
    An offender takes an automobile which is recovered undamaged.
O)  The offender is a male.
    The offender is found firing a rifle for which he has no permit.
P)  The offender is a male.
    An offender prowls in the backyard of a private residence.
Q)  The offender is a male.
    The offender is a customer in a house where liquor is sold illegally.
R)  The offender is a male.
    The offender disturbs the neighborhood with loud, noisy behavior.
S)  The offender is a male.
    A juvenile runs away from home and thereby becomes an offender.
T)  The offender is a male.
    A juvenile plays hookey from school and thereby becomes an offender.

## THE CATEGORY SCALE

The category scale, because of its limits, presents few problems for the respondent. Table II presents these category mean scores, standard deviations and analysis of variance tests for the twenty offenses across the three (Rahway, Annandale and Penn) groups. The differences among the category means are significant for all offenses except larceny of five dollars, minor injury and rape. One may reject the hypothesis that there are no differences among the means in an absolute sense, although it is clear that within the frame of reference of each group there is strong agreement as to the ordering of the severities of crime. The high intercorrelations in Table III support the observed uniformities of Table II.

Thus all three groups consider murder and rape as very serious; Penn and Annandale placed murder above rape (9.62 and 9.05, 9.20 and 8.68 respectively), while Rahway reversed the order (8.42 for rape and 8.06 for murder).

All groups agreed that larceny of five dollars and minor injury were very insignificant and that the nonindex offenses (offenses with no components of injury, theft or damage) were also of relatively little harm. The relationship between the seriousness score given to larceny appears to be strongly related to the dollar amount stolen for the Annandale and Penn raters and only slightly so for the Rahway con-

victs. The relationship between the amount of injury sustained by a victim and the seriousness score given by all three rating groups is strong and positive.

Of particular interest for this study is the finding that overall, Rahway offenders rate offenses with less severity than do the Annandale subjects who, although they have responded in a fashion similar to that of the Penn students, also rated the offenses somewhat less serious than did the students. In short, there is strong agreement about the relative severity of assaultive offenses across the three groups, and strong agreement between Annandale and Penn about the relative seriousness of property offenses. The general moral system which places offenses in a particular order and spacing seems to penetrate from the middle class students through the Annandale Farms group to the "hard" inmates of Rahway Prison. But the absolute force of impact of that system is greatest among the students and least among the Rahway offenders. These findings must be interpreted cautiously, however, because of the small amount of response variability which is possible within a one to eleven scale. The correlation coefficient, particularly, may be overly supportive of hypotheses of similarity under such conditions.

Another way to look at these data is to consider the degree of consensus about the seriousness score of each offense. We expect that because of the greater incidence of near illiteracy and the concomitant increased likelihood of marginal comprehension, the responses from the offenders will display greater variability than those from the student group. In fact the standard deviations of the offender groups are greater than those of the Penn students, ranging from about two to three score units for the former and from about one to two units for the latter. In summary, the ordering of offense severities and the spacing of these severities within each rating group are similar; Penn students tended to evaluate offenses as being more serious than did the Annandale sample who, in turn, rated more severely than did inmates of Rahway Prison.

## THE MAGNITUDE SCALE

The examination of the magnitude responses is the core interest of this report because it is

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TABLE II

THE SERIOUSNESS OF OFFENSES: CATEGORY MEANS AND STANDARD DEVIATIONS

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| Offense Type | Rahway N = 140 | | Annandale N = 253 | | Penn N = 58 | | F(df = 2,448) |
|---|---|---|---|---|---|---|---|
| | $\overline{x}$ | s | $\overline{x}$ | s | $\overline{x}$ | s | |
| A. Larceny, $5................ | 2.9286 | 2.5800 | 3.2648 | 2.4731 | 3.2241 | 2.2246 | .8526* |
| B. Larceny, $20............... | 3.2429 | 2.5583 | 3.8696 | 2.6850 | 4.0862 | 1.8570 | 3.4622** |
| C. Larceny, $50............... | 3.1571 | 2.5226 | 4.3004 | 2.6764 | 4.8966 | 2.0148 | 12.9356*** |
| D. Larceny, $1000............ | 3.6357 | 2.5167 | 6.3162 | 2.9349 | 7.2931 | 2.0596 | 36.3759*** |
| E. Larceny, $5000............ | 3.7429 | 2.4388 | 6.8419 | 3.0182 | 7.1897 | 1.9597 | 65.1698*** |
| F. Burglary, $5.............. | 4.2857 | 2.8342 | 5.4032 | 2.9860 | 4.8103 | 1.9418 | 7.1650*** |
| G. Robbery $5 (no weapon)..... | 4.7214 | 2.7798 | 5.3004 | 2.9433 | 5.9138 | 1.8944 | 4.1519** |
| H. Robbery $5 (weapon)....... | 5.6786 | 3.1008 | 6.5534 | 2.9076 | 6.8448 | 1.9449 | 5.3133*** |
| I. Assault (death)............ | 8.0643 | 3.1238 | 9.1976 | 2.5418 | 9.6207 | 1.7555 | 10.6547*** |
| J. Assault (hospitalization)..... | 5.3929 | 2.8655 | 6.5257 | 2.8515 | 7.4310 | 1.9021 | 13.3377*** |
| K. Assault (T&D)............. | 3.5857 | 2.4553 | 5.2579 | 2.8510 | 5.9828 | 1.8964 | 24.6331*** |
| L. Assault (minor)............ | 2.4929 | 2.4626 | 3.0079 | 2.6003 | 2.5000 | 1.5247 | 2.4435* |
| M. Rape (forcible)............ | 8.4214 | 3.1350 | 8.6759 | 3.0637 | 9.0517 | 1.4680 | .9783* |
| N. Auto Theft................ | 3.0929 | 2.3225 | 4.6285 | 2.7739 | 5.5517 | 2.1372 | 24.4407*** |
| O. Rifle—no permit........... | 3.1786 | 3.0090 | 4.9328 | 3.2243 | 3.7414 | 2.6328 | 15.3880*** |
| P. Trespassing................ | 3.2643 | 2.7422 | 3.9289 | 2.7965 | 2.7069 | 1.3638 | 6.3759*** |
| Q. Illegal liquor.............. | 2.1714 | 2.2630 | 4.7668 | 3.0804 | 2.0000 | 1.1994 | 54.7587*** |
| R. Disorderly conduct.......... | 1.9856 | 2.1390 | 3.1858 | 2.5152 | 1.8621 | .9991 | 16.6879*** |
| S. Runaway................... | 2.3786 | 2.3088 | 3.1779 | 2.6555 | 1.9310 | 1.2685 | 8.9580*** |
| T. Hookey.................... | 2.3143 | 2.3782 | 2.5731 | 2.6636 | 1.3793 | .8950 | 5.7607*** |

* Not significant,     ** p < .05,     *** p < .01.

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TABLE III

*Correlations between Category Scores by Rating Group*

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| Group | Correlations |
|---|---|
| Rahway vs. Annandale............ | .9515*** |
| Rahway vs. Penn................. | .8646*** |
| Annandale vs. Penn.............. | .9334*** |

*** p < .01

from the magnitude estimate of a given stimulus that Stevens based his work in psychophysical scaling and upon which Sellin and Wolfgang developed their scale. Our task here will be to determine if the response patterns observed above are observable when no numerical constraint is placed on the subjects' choice of offense seriousness. In accordance with Stevens' method, the analysis will discuss geometric means whenever the term "mean" is mentioned.

The variability of magnitude estimations has been found to grow approximately in proportion to the magnitude and to produce distributions that are roughly log normal. Consequently, averaging is done best by taking geometric means of the estimations. This method of averaging also has the advantage that, despite the different ranges of numbers used by different observers, no normalizing is needed prior to averaging.[12]

Table IV displays the means, standard deviations and analysis of variance "F" values of magnitude score against offense type for each group.

Here again it is eminently clear that strong agreement exists among all three groups[13] as to what offenses are serious both in magnitude

[12] Stevens, *A Metric for the Social Consensus*, 151 SCIENCE 531 (1966). Geometric means were also computed by Sellin and Wolfgang.

[13] The subjects in these three groups who responded to the magnitude scale are different subsamples of the three groups from those in the category analysis of Chapter IV.

TABLE IV

THE SERIOUSNESS OF OFFENSES: GEOMETRIC MEANS BY OFFENSE TYPE AND RATING GROUP

| | Rahway N = 49 | | Annandale N = 263 | | Penn N = 158 | | F(df = 2,467) |
|---|---|---|---|---|---|---|---|
| | $\overline{x}$ | s | $\overline{x}$ | s | $\overline{x}$ | s | |
| A. Larceny, $5............. | 4.3063 | 3.5672 | 6.5830 | 3.4760 | 4.4344 | 2.7483 | 6.7913*** |
| B. Larceny, $20........... | 5.4744 | 3.2746 | 9.2303 | 2.8499 | 8.3528 | 2.4082 | 5.2424*** |
| C. Larceny, $50........... | 5.4958 | 3.9653 | 10.1077 | 3.3932 | 12.0516 | 2.3156 | 9.0863*** |
| D. Larceny, $1000......... | 9.4744 | 3.2265 | 23.8790 | 4.8685 | 23.0761 | 2.1829 | 10.4465*** |
| E. Larceny, $5000......... | 11.1373 | 3.7020 | 33.4315 | 6.7200 | 36.2232 | 2.2142 | 11.6728*** |
| F. Burglary, $5........... | 8.7111 | 4.0906 | 14.8678 | 3.4920 | 13.2381 | 2.2600 | 4.5657** |
| G. Robbery $5 (no weapon). | 15.8679 | 3.7939 | 13.6426 | 3.7191 | 19.8959 | 2.8439 | 4.5681** |
| H. Robbery $5 (weapon).... | 28.6914 | 3.4614 | 21.2063 | 3.7655 | 32.6975 | 2.5403 | 6.7373*** |
| I. Assault (death).......... | 68.4497 | 3.9649 | 171.1088 | 16.5386 | 181.3084 | 4.4906 | 3.6261** |
| J. Assault (hospitalized).... | 28.7230 | 3.5987 | 30.9415 | 3.6594 | 60.5215 | 3.0805 | 15.9564*** |
| K. Assault (T and D)....... | 18.2488 | 3.4840 | 17.2032 | 3.7017 | 32.7237 | 2.9308 | 13.9983*** |
| L. Assault (minor).......... | 3.1440 | 3.8041 | 7.4090 | 3.6480 | 4.3158 | 3.6692 | 14.0798** |
| M. Rape (forcible).......... | 50.9528 | 4.3119 | 96.0529 | 12.2803 | 98.3959 | 3.8547 | 2.0878* |
| N. Auto theft.............. | 5.3892 | 3.2864 | 10.1482 | 2.8227 | 10.5349 | 1.6246 | 11.1651*** |
| O. Rifle—no permit......... | 2.6413 | 3.6703 | 12.2717 | 3.9637 | 7.8005 | 3.6718 | 28.2746*** |
| P. Trespassing............. | 4.3535 | 4.2261 | 8.9459 | 4.2866 | 4.3089 | 3.0752 | 16.8107*** |
| Q. Illegal liquor............ | 2.5322 | 3.6958 | 12.3320 | 3.6557 | 2.0538 | 2.5218 | 125.7120*** |
| R. Disorderly conduct....... | 2.3138 | 2.9288 | 5.6598 | 3.1371 | 2.0472 | 2.4480 | 50.6511*** |
| S. Runaway................ | 1.8380 | 2.9329 | 5.1820 | 2.5180 | 1.8776 | 2.5168 | 46.6241*** |
| T. Hookey................. | 2.0488 | 3.4531 | 4.1954 | 3.5819 | 1.5247 | 2.1976 | 41.4592*** |

* not significant;     ** p < .05;     *** p < .01.

and sequence. The significant differences among the means observed for all of the offense types (excluding rape) are the result of the disparate absolute values given by the Rahway offenders. The responses of the Annandale group are essentially the same as those of the Penn students. Penn rated murder at 181 and Annandale at 171, while Rahway felt it was worth only 68. Similarly, Penn and Annandale agreed as to the seriousness of rape, 98 and 96 respectively, while the Rahway score was 51. The Penn and Annandale increments in judged severity of increasing dollar theft are very similar, while Rahway respondents seemed much less sensitive to thievery. Penn and Annandale gave scores of 36 and 33 respectively, to a theft of $5000; the Rahway score was 11. Similar patterns obtain for the other index offenses, although the differences are not so large.

Interestingly, the significant differences in the mean scores for the very minor offenses of trespassing, illegal possession of liquor, disorderly conduct, running away from home and playing hookey are not the result of the disparity between Penn and Annandale on the one hand, and Rahway on the other, but rather they are due to the agreement between Penn and Rahway. The Annandale raters considered these offenses as more serious (4 to 12 points as opposed to 2 to 4 points) than did the two other groups. There is no readily apparent explantation for this reversal other than the hypothesis that these offenses are more relevant for the juvenile age-group of which they are members.

Stevens claimed in his empirical investigations to have found confirmation of the psychophysical law because about three dozen different continua have been adequately fitted by the power function $Y = aX^b$.[14] These continua contained such stimuli as sound level, time du-

[14] The psychophysical law of Stevens states that equal stimulus ratios produce equal perceptual ratios; that is, the "perceived magnitude $\psi$ grows as the physical value $\phi$ raised to a power $\beta$ $\psi = K\phi^\beta$." Stevens, supra note 12, at 530.

FIGURE 1
THE POWER FUNCTION OF MONEY
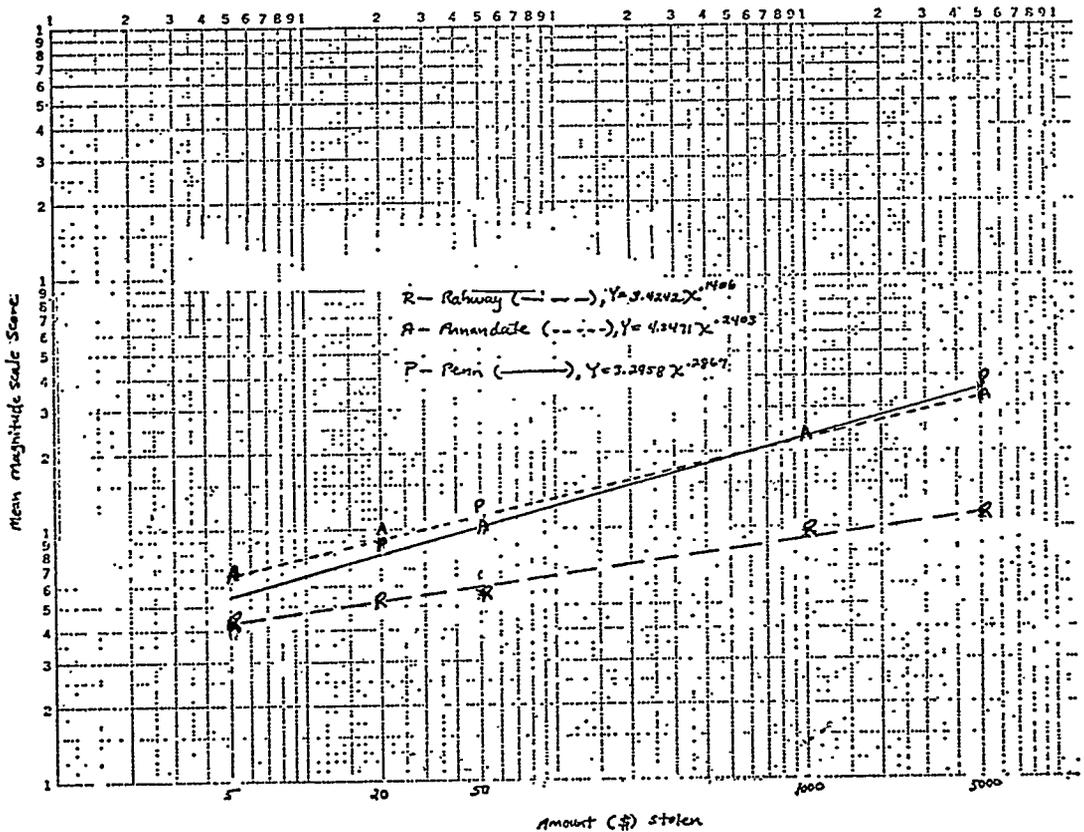


ration, pleasantness of odors, occupational preference, various types of attitudes and so on. It was of considerable interest, then, when Sellin and Wolfgang showed that the relationship between the judged seriousness of thefts was a power function of the dollar value stolen.[15]

We have also found in this study an almost perfect concordance between the logarithm of the perceived seriousness of theft of money and the logarithm of the dollar value.

The straight lines on the log-log plots of Figure 1 substantiate the claim that the relationship is a power function. As the beta weights indicate, to double the perceived seriousness score the amount of the theft must increase by about thirty-five times for the Penn raters, forty-two times for the Annandale subjects and about seventy times for the Rahway

15 *See* T. SELLIN & M. WOLFGANG, *supra* note 2, at 285. The replications by Normandeau, *et al.*, have also yielded a similar power function relationship.

TABLE V

*Regression of Seriousness Score on Dollar Value Stolen, by Rating Group*

| Rating Group | r | b |
|---|---|---|
| Rahway | .9917 | .1406 |
| Annandale | .9965 | .2403 |
| Penn | .9878 | .2867 |

inmates. The Penn and Annandale subjects have generated fairly similar power functions, although one may still conclude that the sensitivity to change in dollar value stolen as observed in the change in seriousness score is greatest for the Penn group, somewhat less for Annandale and least for the Rahway prisoners.[16]

16 Sellin and Wolfgang found a beta not too much greater than that of the Rahway offenders (.1652).

Another finding, which Stevens substantiated in his work, is that the relationship of a category scale to a magnitude scale of the same measure is characteristically concave downward, a nonlinear function somewhere between linear and logarithmic.[17] Sellin and Wolfgang found such a relationship, as have we (Figure 2 is the Penn plot and the two offender group plots are similar). Although this portion of the study deals with intensive stimuli, the response items are qualitative (excepting the dollar values); it is a numerical peg that we are attempting to generate for each item. Therefore, it cannot be determined for non-numerical items if the scale is, in fact, a power function except by analogy. That analogy must be drawn from the similarity of the relationships between category and magnitude scales which have been generated in those instances where the input stimuli could be measured and from the form of the relationship derived in the Sel-

[17] Stevens, *supra* note 12, at 532.

lin-Wolfgang study and in this project. Of course, the form of the relationship is clearly logarithmic for dollar stimuli. Nonetheless, without input stimuli which are measurable on some scale other than that from estimates of raters, no definite statement may be made regarding the shape of the relationship. We must rely upon the growing weight of evidence that the shape of relationship between category and magnitude estimates is somewhat stable when a power function is plotted against an equal interval category scale.[18]

[18] *See* Eissler, *Empirical Test of a Model Relating Magnitude and Category Scales*, 3 SCANDINAVIAN J. PSYCHOLOGY 87 (1962); Enzen & McBurney, *Magnitude & Category Scales of the Pleasantness of Odors*, 68 J. EXPERIMENTAL PSYCHOLOGY 435 (1964); Galanter & Messick, *The Relation Between Category and Magnitude Scales of Loudness*, 38 PSYCHOLOGICAL REV. 363 (1961); Perloe, *The Relations Between Category-rating and Magnitude-estimation Judgments of Occupational Prestige*, 76 AM. J. PSYCHOLOGY 395 (1963); Stevens & Galanter, *Ratio Scales and Category Scales for a Dozen Perceptual Continua*, 54 J. EXPERIMENTAL PSY-

FIGURE 2
CATEGORY V. MAGNITUDE SCORES
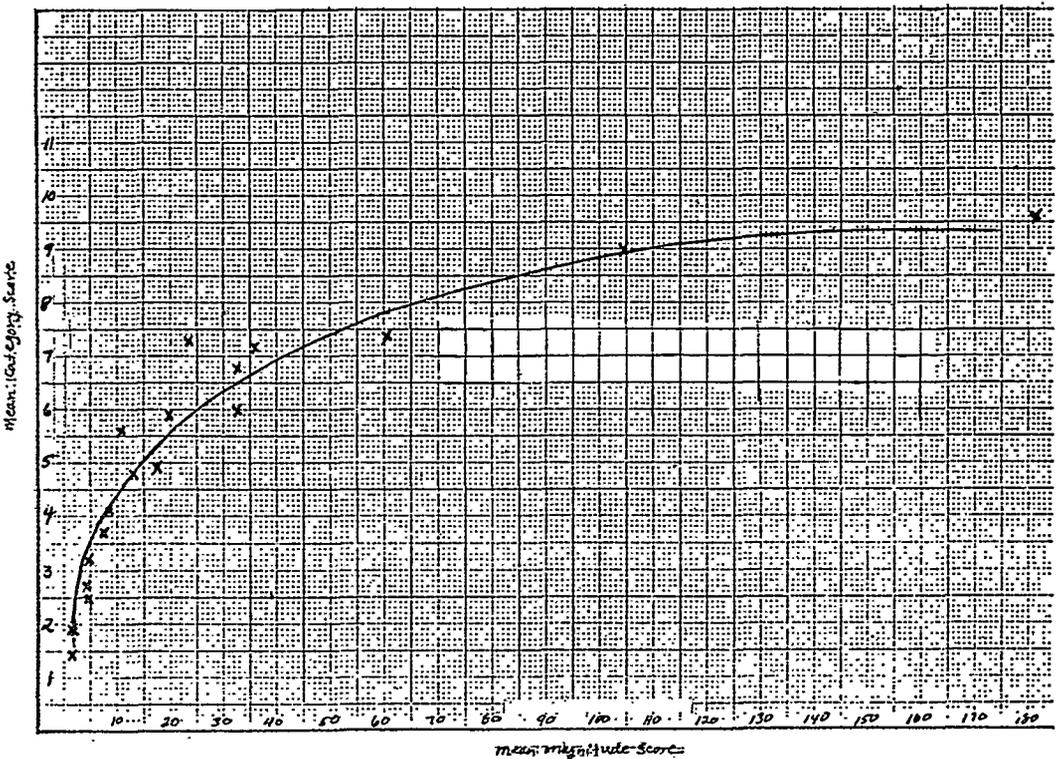
So far it has been shown that the evaluation of the seriousness of thefts is logarithmically related to the dollar value of the theft, that there is a considerable degree of agreement as to the ordering and spacing of the seriousness of various kinds of criminal behavior, and that, overall, the students rate offenses slightly more seriously than do the Annandale subjects and that the Rahway inmates view practically all violative behavior significantly less seriously than either of the two other groups. As was found with the category scores, the Penn sample exhibited somewhat greater consensus than did the two offender groups in the magnitude estimation process. The standard deviations for the Penn sample are smaller than those of the other two groups. Most of the offenses are characterized by roughly the same amount of agreement with the serious offenses of rape and murder exhibiting comparatively large dispersions. This is due, of course, to the unlimited upper end of the magnitude scale and the resulting extreme values entered by some individuals for these very severe forms of criminal behavior.

It will be recalled that the scale was administered to the Penn students for two reasons: a) to develop the necessary distributions for assessing the major problem of differential evaluation of the seriousness of criminal behavior by the offender/nonoffender variable, and b) to test a group some ten years later similar to the one that generated the Sellin and Wolfgang offense scores. In Table VI the two sets of magnitude scores are displayed. This set of magnitude scores forms the basis for the Sellin-Wolfgang Index of Delinquency. The offenses were rated about one-half as severe in absolute terms by the Penn students than in the original study. Assuming that the scale is reliable, one can conclude that the temporal trend has been to judge offenses as less serious than ten years ago. However, within each rating group the relative judgment of seriousness of the offenses in terms of ordering and spacing has remained about the same.

Sellin and Wolfgang were not particularly

TABLE VI

SELLIN-WOLFGANG AND PENN RETEST MAGNITUDE SCORES

| Offense Item | Sellin-Wolfgang Mean Values | | Penn Retest Mean Values |
|---|---|---|---|
| Larceny, $1 [a] | 16.93 | | 3.2958 |
| Larceny, $5 | 22.09 | | 4.4344 |
| Larceny, $20 | 27.77 | | 8.3528 |
| Larceny, $50 | 32.31 | | 12.0516 |
| Larceny, $1000 | 52.99 | | 23.0761 |
| Larceny, $5000 | 69.13 | | 36.2232 |
| Burglary, $5 | 40.62 | | 13.2381 |
| Robbery $5 (no weapon) | 52.25 | | 19.8959 |
| Robbery $5 (weapon) | 86.33 | $r = .9880$ | 32.6975 |
| Assault (death) | 449.20 | $b = .4246$ | 181.3084 |
| Assault (hospitalized) | 115.60 | | 60.5215 |
| Assault (T and D) | 69.32 | | 32.7237 |
| Assault (minor) | 22.50 | | 4.3158 |
| Rape (forcible) | 186.30 | | 98.3959 |
| Auto theft | 27.19 | | 10.5349 |
| Forcible entry [b] | 18.53 | | 8.8037 |
| Intimidation (verbal) [c] | 30.15 | | 15.4615 |
| Intimidation (weapon) [d] | 64.24 | | 28.2631 |

a) derived from the power function of money.

b) the difference of Burglary $5—Larceny $5.

c) the difference of Robbery $5 (no weapon)—Larceny $5.

d) the difference of Robbery $5 (weapon)—Larceny $5.

These derivations were suggested by Sellin and Wolfgang so that the relevant components from delinquent events could be isolated and weighted as to their severity because the separate elements were not given to the subjects to score. The assumption of additivity is implicit in this procedure.

interested in the absolute values given to the offense stimuli because they were not comparing different groups in terms of the judged "absolute" gravity. Rather they developed a weighting system based on the relative degree of judged harm by dividing each mean score by the smallest score of the list of offenses, thus yielding a set of ratio weights.[19] These

[19] T. SELLIN & M. WOLFGANG, *supra* note 2, at 289.

weights express the ratio of severity existent between a particular offense and the least serious one. A five for a particular offense would mean (in round terms) that the offense was judged as being five times more serious than the least serious offense and so on. Those simple ratios have been computed and displayed along with the Sellin-Wolfgang ratio scores in Table VII. Here it can be seen that while the original Sellin-Wolfgang study found that homicide was rated as twenty-six times more serious than larceny of one dollar, the Penn retest group considered it as fifty-five times more serious, even though in absolute terms, they considered murder less serious. The spread of *relative* seriousness is greater in the retest group, while the *absolute* evaluation of the gravity of the offense is less.

The patterns of the relative differences among three rating groups in this study are similar to the absolute difference patterns discussed earlier. The range of relative severity was smallest for Rahway (21.8), followed by Annandale (39.4) and Penn (55).

If we disregard the small changes in seriousness in larceny of one dollar, minor injury and larceny of five dollars, the ratios of the remaining more severe forms of offensive behavior may be divided by two (dividing by a constant does not alter the ratios) with the minor offense scores of less than one rounded up to one. The purpose of this operation is to indicate more vividly the close agreement of *ratios* of relative offense severity for the more serious offenses over the ten year span which has already been suggested by the high correlation coefficient reported in Table VI. The Penn retest group has produced ratios almost identical to the Sellin-Wolfgang raters. The collapsing of the ratio distance for Annandale and, particularly, for Rahway is again clear and dramatic; offenders do not rate offenses as being as serious in absolute terms as do nonoffenders, nor do they place as much distance between severe and moderately severe offenses.

Our study demonstrates that the relationship between the category and magnitude versions of the Sellin-Wolfgang scale is similar to that

## TABLE VII
### OFFENSE RATIO SCORES BY RATING GROUP

| Offense Type | Rahway ÷ 3.14 | | Annandale ÷ 4.34 | | Penn ÷ 3.30 | | S-W* |
|---|---|---|---|---|---|---|---|
| | a | b | a | b | a | b** | |
| Larceny $1................... | 1.1 | 1 | 1.0 | 1 | 1.0 | 1 | 1 |
| Larceny $5................... | 1.4 | 1 | 1.5 | 1 | 1.3 | 1 | 1 |
| Larceny $20................. | 1.7 | 1 | 2.1 | 1 | 2.5 | 1 | 2 |
| Larceny $50................. | 1.8 | 1 | 2.3 | 1 | 3.7 | 2 | 2 |
| Larceny $1000.............. | 3.0 | 2 | 5.5 | 3 | 7.0 | 4 | 3 |
| Larceny $5000.............. | 3.5 | 2 | 7.7 | 4 | 11.0 | 6 | 4 |
| Burglary $5................. | 2.8 | 1 | 3.4 | 2 | 4.0 | 2 | 2 |
| Robb. $5 (no weap.).......... | 5.0 | 2 | 3.1 | 2 | 6.0 | 3 | 3 |
| Robb. $5 (weap.)............. | 9.1 | 5 | 4.9 | 2 | 9.9 | 5 | 5 |
| Assault (death).............. | 21.8 | 11 | 39.4 | 20 | 55.0 | 28 | 26 |
| Assault (hosp.).............. | 9.1 | 5 | 7.1 | 4 | 18.4 | 9 | 7 |
| Assault (T and D)............ | 5.8 | 3 | 4.0 | 2 | 9.9 | 5 | 4 |
| Assault (minor).............. | 1.0 | 1 | 1.7 | 1 | 1.3 | 1 | 1 |
| Rape (forcible).............. | 16.2 | 8 | 22.1 | 11 | 29.9 | 15 | 11 |
| Auto theft.................. | 1.7 | 1 | 2.3 | 1 | 3.2 | 2 | 2 |
| Forcible Entry.............. | 1.4 | 1 | 1.9 | 1 | 2.7 | 1 | 1 |
| Intimidation (verbal)........ | 3.7 | 2 | 1.6 | 1 | 4.7 | 2 | 2 |
| Intimidation (physical)...... | 7.7 | 4 | 3.4 | 2 | 8.6 | 4 | 4 |

\* Scores rounded by the authors.
\*\* "a" scores divided by 2 and rounded as in T. Sellin and M. Wolfgang, *supra* note 2.

found in the original study and to that found in numerous examples in psychophysical scaling. This research has also shown that the Rahway prisoners do not consider offenses as being as serious as do the Annandale or Penn groups. All three groups perceive the seriousness of thefts as a power function of the dollar value of the theft, with the Penn students reacting most strongly and the Rahway group least strongly to the increase in the dollar value of theft. The temporal effect on the scale has been the reduction, in absolute terms, of the amount of seriousness attached to each offense, while the order and spacing of the offense severities has remained roughly unchanged.

## SUMMARY AND CONCLUSIONS

This analysis has been concerned with the determination of the differential evaluations of the seriousness of offenses by officially labeled offenders and by nonoffenders, and the temporal trends, if any, in the judgment of the seriousness of offenses as reflected in the application of the Sellin-Wolfgang index of delinquency to a similar group ten years later.

The offender group consisted of two incarcerated samples: 193 Rahway prison inmates and 524 Annandale Farm residents. The mean age of the former group was thirty-one years and eighteen years for the latter. Both groups were 60 to 70 per cent nonwhite. Their job histories were characterized as short-term, unskilled, operative or menial. Seventy-five per cent of the Rahway sample exhibited some form of emotional disorder on admission and one-third of them were drug users. Most of the men in both groups never finished high school, were low achievers on the Scholastic Aptitude Test and exhibited moderate to low I.Q. scores. The Annandale responders were predominantly property offenders, while the majority of the Rahway subjects were assaulters. Against the responses from these offender groups we set the evaluations of the representatives of the "nonoffender middle-class community," 216 University of Pennsylvania undergraduate students.

The same stimuli were administered in both an eleven-point category and an unrestricted magnitude estimation scale. The agreement as to the ordering and spacing of offense severi-

ties in the category responses was quite strong, yielding correlations among the groups of about ".9." However, the Rahway subjects consistently gave lower values of seriousness to the offenses than did either the Annandale or Penn responders, although the Annandale values were generally lower than those of the Penn students.

The amount of consensus about the severity of the offenses was greatest among the Penn category raters and about the same for both offender groups. The same continuum of Rahway, Annandale and Penn in order of increasing value given to the seriousness of offenses in absolute terms obtained in the magnitude responses, although again the differences between Annandale and Penn were small. The correlations among these groups were again centered around .9, although Penn and Annandale rated most offenses as being roughly twice as serious as the values derived from the Rahway responses. The spread from the least to the most serious estimates was greatest in the Penn data and least in the Rahway responses. The degree of consensus was greater among the Penn raters than among the two offender groups which were similar to one another.

Both offenders and nonoffenders agree as to the ordering of offenses along a scale from least to most serious. They agree less on the spacing of the items and do not agree at all on the absolute value of the harm inflicted by each of the described criminal acts. Offenders respond less directly to changes in the dollar value of theft and to increases in the amount of physical injury resulting from an offense than do nonoffenders. In fact, that response appears to be a function of the degree of criminal "hardening" which has taken place. Thus the Rahway prisoners are less likely to increase the judged seriousness of violative behavior with increased stimuli strength than are the Annandale subjects, who are younger and apparently less entrenched in that value system expressed by the older prisoners.

With regard to temporal effects on the scale, the study revealed, that, overall, the Penn students considered offenses as only about one-half as serious as did their counterparts ten years ago. However, the judged relative severity of the offenses within each group, particularly for the more serious forms of property

and bodily violations, were found to be almost unchanged. The differences in the absolute impact of criminal behavior between today's Penn students and those of a decade ago are almost of the same magnitude as those differences between today's students and today's prisoners.

The students have maintained the same relative regard for offenses but they have been desensitized in absolute terms. Nonetheless, the relative weight given to each offense as a ratio of the lesser offenses has remained remarkably stable.