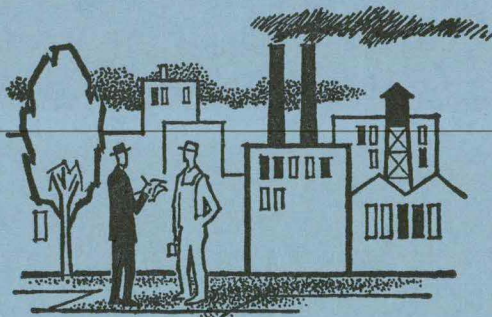


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Scaling Juvenile Delinquency

by Lyle W. Shannon

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JOURNAL OF RESEARCH IN CRIME AND DELINQUENCY
January 1968
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Scaling Juvenile Delinquency

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The basic data in this research consist of a 40 per cent systematic sample of police contacts with juveniles aged six through seventeen in Madison, Wis., over a six-year period. Earlier research reports have described the distribution of police contacts, referrals for official action, and the distribution of individual delinquents according to social areas of the city. No attempt has previously been made to place the various types or patterns of delinquent behavior on an empirically derived scale or delinquency continuum.

The data in this paper cast considerable doubt on the hypothesis of unidimensionality and the hypothesis of distinctive types of delinquent careers. Actually, relatively few delinquents who had police contacts had what could be called a career in delinquency. Juveniles with multiple contacts and what might be defined as careers in delinquency engaged in quite diversified behavior. One must tentatively conclude that the total number of police contacts by a juvenile for those reasons that involve a violation of the law or more serious juvenile misbehaviors (serious as perceived by the public and authorities in the community) will serve as an index of juvenile misbehavior about as well as or better than either Guttman scale or geometric scores. However, this conclusion must be tentative, pending a similar analysis of juvenile contact data for Racine, Wis., since Madison may be an unusual case.

JUVENILE DELINQUENCY is often viewed as a clinically defined misbehavior, clearly discernible and easily classified. Actually, "delinquency" is a catchall category determined by court action. Juveniles become delinquents by adjudication, not clinical diagnosis. For researchers and other professionals this poses the problem of determining when, in terms of behavior, a juvenile should be classified as nondelinquent, delinquent, or per-

haps seriously delinquent. Sociologists, juvenile bureaus, and juvenile court personnel alike have employed simple typologies of seriousness or additive scales as indicators of the seriousness of delinquent careers. Sometimes the contacts a juvenile has with the police are cumulated, with a marker of one color placed on his file card when he has had five contacts with the police, and a marker of another color when he has had ten

contacts with the police. However, taking the number of contacts that the juvenile has had with the police as an index of the seriousness of his delinquent career, when there are differences in types of offenses, may introduce an element of ambiguity and lack of meaningfulness of seriousness scores derived in such fashion.

The most casual inspection of juvenile bureau files reveals that the pattern of offenses for those juveniles who have had multiple contacts with the police is not the same. Some juveniles have had a series of contacts with the police for traffic violations; others have had numerous contacts for burglary and theft. For this and other reasons, the measurement of delinquency has become a difficult and as yet unresolved task. Two basic problems are involved: (1) determining the seriousness of individual offenses and (2) determining how individual offenses comprising a delinquent career should be combined into a seriousness of career scale.¹

This paper is based on an analysis of police contacts with 1,688 juveniles in Madison, Wis., from 1950 through 1955. Police contact is defined as any type of interaction between a Madison police officer and a juvenile resulting in the officer's filing a record on the appropriate Crime Prevention Bureau form. Selection of the sample was made systematically by taking two-fifths of the cases in the records of the Crime Prevention Bureau, each

case consisting of one or more police contacts with a juvenile during 1950-55. The universe for study was defined as juveniles aged six to eighteen who had committed delinquent or other acts resulting in police contacts. Acts or contacts were excluded from the study if police records were for an earlier period than the beginning date of the study (529), if the address at the time of the contact could not be verified (41), or if the address at the time of contact was outside Madison (799). Most acts excluded were for these reasons. On the other hand, absence of several other crucial pieces of information such as age of the juvenile (67), sex (3), or the year of police contact (10) resulted in elimination of the case from the sample.

SCALE DETERMINANTS

Should reasons for police contact with juveniles prove scalable, a basis may exist for saying that underlying these diverse reasons for contact there is a single dimension called juvenile delinquency. If reasons for police contact scale, it becomes possible to rank various types of delinquent careers unambiguously on a scale from the least serious to the most serious types of delinquent careers.

If the data do not scale, they may support an alternative hypothesis that there are various subtypes of juvenile delinquency, rather than a unidimensional continuum. There may well be groups of delinquents with careers markedly different from others—careers in vandalism, careers in offenses against persons, careers in various types of theft, and so on. Although patterns or configurations of offenses may not be readily observable, the distribution of geometric scores should enable us to discern whether

¹ A sophisticated discussion of the entire range of problems encountered in measuring delinquency is contained in Thorsten Sellin and Marvin Wolfgang, *The Measurement of Delinquency* (New York: John Wiley, 1964), pp. 55-70, 114-30, 292-318, and 334-49. For an early study, see Sophia M. Robison, *Can Delinquency Be Measured?* (New York: Columbia University Press, 1936).

certain combinations of offenses are more characteristic of juveniles from one area than another or whether certain types of careers have a higher probability of leading to adult crime than do others.² A follow-up study is in progress in order to answer the latter question.

Short and Nye have scaled admitted delinquencies with notable success, but this leaves unsolved the problem of reliability of admitted delinquencies as a measure of delinquent behavior.³ Police contact re-

² If a juvenile has had a police contact for each of the ten different reasons cited in a scale, then his scale score is 10, but his geometric score is 1,023. Each different configuration of responses has a different geometric score. Some of these geometric scores represent perfect scale types, and others represent types that have errors in the Guttman sense. One of the things in which we are interested is the distribution of juveniles by scale types and the relationship of these scale types to such relevant criteria as continued delinquency or embarkation on an adult career in crime. The number of contacts a juvenile has had or the unidimensionality of the scale is not important in this approach. If certain configurations have geometric scores that permit a high degree of efficiency in predicting the criterion, then the scale is useful without reference to its additiveness or unidimensionality.

³ See F. Ivan Nye and James F. Short, Jr., "Scaling Delinquent Behavior," *American Sociological Review*, June 1957, pp. 326-31, and James F. Short, Jr., "Psychosomatic Complaints, Institutionalization, and Delinquency," *Research Studies of the State College of Washington*, June 1956, pp. 150-59. See also William R. Arnold, "Continuities in Research: Scaling Delinquent Behavior," *Social Problems*, Summer 1965, pp. 59-66. This research does not enable us to make a parallel test of either the Short-Nye or any other self-reported scale since the broad categories for police contact are dissimilar to the more specialized subcategories of behavior utilized by Short, Nye, Arnold, and others.

Although John P. Clark and Larry L.

ports do not include all juvenile misbehavior or even all juvenile misbehavior known to the police. The data on police contacts to which we shall refer indicate that the extensiveness of police reports is in itself a function of policy established by police administrations.⁴ Nevertheless, police reports of juvenile misconduct do provide a basis for testing the hypotheses that (1) delinquency is unidimensional, (2) delinquency is typological, and (3) juvenile delinquency, as operationally defined by scale scores, has an area distribution meaningfully related to the distribution of social deprivation in the community.

TWO SCALING ATTEMPTS

Reasons for police contact were classified according to a system of twenty-five separate categories. Each category was defined operationally by listing the behaviors that would fit into that particular category. This approach was consistent with the fact that delinquency statuses are themselves enumerative. Juvenile contacts were classified as follows: robbery; burglary; theft (except auto); auto theft; disorderly conduct; vagrancy; liquor offenses; incorrigible and run-away; truancy; assault; sex offenses;

Tift, "Polygraph and Interview Validation of Self-Reported Deviant Behavior," *American Sociological Review*, August 1966, pp. 516-23, have dealt with the problem, their conclusions only force us to be even more concerned about the validity of responses to items included in delinquency scales. See also Lois B. De Fleur, "On Polygraph and Interview Validation," *American Sociological Review*, February 1967, pp. 114-15 and a reply by Clark and Tift, pp. 115-17.

⁴ Reports of police contact with juveniles doubled when a record-oriented captain was appointed head of the Crime Prevention Bureau in Madison.

narcotic and drug offenses; forgery; homicide; moving vehicle violations; all other traffic violations; weapons; fraud; family offenses; gambling; escapes; violent property destruction; contact; obscene literature; and other.

Madison was divided into three areas—Central, East, and West. Although each of these areas is somewhat heterogeneous, each tends to differ from the other on a variety of social and economic indicators.⁵ The average income of West Side families is higher than that of East Side families, which, in turn, is higher than that of families in the Central area. The juvenile population for each of these areas was developed from school census data made available by the superintendent's office. The Central area contained 39.97 per cent of the juvenile population of Madison, aged six to eighteen, 1950-1955; the West, 30.40 per cent; the East, 29.61 per cent.

The ten most numerous categories of police contact, males and females combined, were selected for the initial scaling attempt. The coefficient of reproducibility was .900 but the minimum coefficient of reproducibility was .835, indicating very little improvement in reproducibility above that which was possible from the modal categories of the marginals.

Every juvenile included in the scale had at least one police contact for one of the reasons listed. Scaling, as it turns out, is more of a heuristic

device than anything else. The average number of different categories of police contacts per juvenile in the scaled sample was only 1.64—a large proportion of the juveniles had only one type of contact with the police. Hence, this group of one-type contact was different from all other types unless the contact or contacts were for disorderly conduct. The scaling program assigned single-type contacts to either the zero contact category or to scale types 1 or 2. This grouped the vast bulk of the juveniles in scale types 0, 1, and 2 (particularly 0, since it would be the least error type for single-type contacts other than incorrigibility and disorderly conduct), minimizing error and lending an immediate impression that delinquent contacts did, in fact, constitute a Guttman scale. We must realize at the outset that reasons for police contact are likely to have a coefficient of reproducibility that satisfies the traditional minimum of .90 simply on a basis of high marginal reproducibility.

Therefore, we should think of the scaling process as a means of ordering the data to see what proportion of the total number of persons fall into types 1 through 10 (even with error) and, if this is not a large proportion, reject the hypothesis of a continuum of delinquent types, each type being consistently more serious than the ones before it. In the first scaling attempt only 62 per cent of the juveniles with police contacts fell in the categories 1 through 10, and of these only 36 per cent were perfect scale types. If we include individuals who are only one error from being a perfect scale type, we are still describing only 45 per cent of those in categories 1 through 10.

⁵ Differences in these areas are described in detail in Lyle W. Shannon, "Types and Patterns of Delinquency in a Middle-sized City," *Journal of Research in Crime and Delinquency*, January 1964, pp. 53-66, and "Types and Patterns of Delinquency Referral in a Middle-sized City," *British Journal of Criminology*, July 1963, pp. 24-36.

TABLE 1
JUVENILE DELINQUENCY SCALE 1*

Frequency of Scale Type								Description of Scale Type
Male				Female				
Total	Central	East	West	Total	Central	East	West	
447	204	139	104	144	88	36	20	0—Has had no contact with police.
281	110	95	76	83	48	24	11	1—Has had contact with police for incorrigibility.
285	132	81	72	61	35	15	11	2—Has had contact with police for incorrigibility and disorderly conduct.
80	38	27	15	14	9	5	0	3—Has had contact with police for incorrigibility, disorderly conduct, and suspicion, investigation or information.
44	28	12	4	10	4	4	2	4—Has had contact with police for incorrigibility, disorderly conduct, suspicion, investigation or information, and vagrancy.
28	11	12	5	4	3	1	0	5—Has had contact with police for incorrigibility, disorderly conduct, suspicion, investigation or information, vagrancy, and traffic offenses.
32	22	6	4	9	6	3	0	6—Has had contact with police for incorrigibility, disorderly conduct, suspicion, investigation or information, vagrancy, traffic offenses, and theft.
16	11	4	1	2	1	1	0	7—Has had contact with police for incorrigibility, disorderly conduct, suspicion, investigation or information, vagrancy, traffic offenses, theft, and liquor offenses.
2	0	2	0	0	0	0	0	8—Has had contact with police for incorrigibility, disorderly conduct, suspicion, investigation or information, vagrancy, traffic offenses, theft, liquor offenses, and burglary.
9	7	1	1	1	1	0	0	9—Has had contact with police for incorrigibility, disorderly conduct, suspicion, investigation or information, vagrancy, traffic offenses, theft, liquor offenses, burglary, and auto theft.
1	1	0	0	0	0	0	0	10—Has had contact with police for incorrigibility, disorderly conduct, suspicion, investigation or information, vagrancy, traffic offenses, theft, liquor offenses, burglary, auto theft, and sex offenses.
1,225	564	379	282	328	195	89	44	Total

* Coefficient of Reproducibility = .9000; Minimum Coefficient of Reproducibility = .8356. The categories of police contact and the number of juveniles with at least one contact of that type are as follows: incorrigibility, 577; disorderly conduct, 505; contact under suspicion, for investigation or information, 384; vagrancy, 269; traffic—operating and parking, 267; theft, 252; liquor offenses, 140; burglary, 63; auto theft, 63; sex offenses, 35.

This may appear to result in a somewhat negative judgment, considering that police are only aware of a portion of the juvenile behavior that could have resulted in police contacts for each juvenile. However, the question is whether or not police contacts do permit the unambiguous ranking of juveniles from those whose behavior has been chance, sporadic, and confined to behaviors perceived as only minor transgressions, to those who have engaged in the entire spec-

trum of delinquent acts, including those perceived by the community as serious violations of the mores. Visual inspection of the scalogram enables one to conclude almost immediately that the distribution of police contacts does not permit the ranking of juveniles in such a neat, orderly fashion. And had we included all twenty-five categories for police contact, the results would have been even less scalable.

The results of this scaling attempt

TABLE 2
JUVENILE DELINQUENCY SCALE 2*

Frequency of Scale Type								Description of Scale Type
Male				Female				
Total	Central	East	West	Total	Central	East	West	
173	85	59	29	62	36	22	4	0—Has had no contact with police.
294	135	84	75	66	39	16	11	1—Has had contact with police for disorderly conduct.
125	70	33	22	43	29	7	7	2—Has had contact with police for disorderly conduct and vagrancy.
61	37	11	13	15	10	5	0	3—Has had contact with police for disorderly conduct, vagrancy, and theft.
39	20	15	4	11	7	4	0	4—Has had contact with police for disorderly conduct, vagrancy, theft, and liquor offenses.
16	7	9	0	1	1	0	0	5—Has had contact with police for disorderly conduct, vagrancy, theft, liquor offenses, and burglary.
18	12	4	2	1	1	0	0	6—Has had contact with police for disorderly conduct, vagrancy, theft, liquor offenses, burglary, and auto theft.
1	1	0	0	0	0	0	0	7—Has had contact with police for disorderly conduct, vagrancy, theft, liquor offenses, burglary, auto theft, and sex offenses.
727	367	215	145	199	123	54	22	Total

* Coefficient of Reproducibility = .9062; Minimum Coefficient of Reproducibility = .8085. The categories of police contact and the number of juveniles with at least one contact of that type are as follows: disorderly conduct, 505; vagrancy, 269; theft, 252; liquor offenses, 140; burglary, 63; auto theft, 63; sex offenses, 35.

are shown in Table 1. The figures opposite each scale type indicate how many juveniles most nearly approximate that scale type.

Persons whose only contact with the police was for suspicion, investigation or information, traffic offenses, or incorrigibility were eliminated from the sample in the second scaling attempt, thus reducing the scaling sample from 1,553 to 926. The categories eliminated contributed the most to the total errors of the first scaling attempt, and, with the exception of traffic offenses, would not result in formal action if committed by adults rather than juveniles. The coefficient of reproducibility, again based almost entirely on the fact that high marginal reproducibility was present at the outset, was .906 and the minimum coefficient of reproducibility was .808, indicating a small improvement in scale reproducibility over minimum reproducibility. Only 75 per cent of the juveniles are included in scale types 1 through 7 and, of these, only 57 per cent are perfect scale types,

most of these falling in type 1, however. The results of the second scale attempt are shown in Table 2.

Several other characteristics of the scales should be noted at this point; namely, that time and age variables were related to frequency of contact (time and age increased the frequency of contact in an actuarial fashion if not in some sociological explanatory framework). Scale scores become higher with the age of juveniles for the period that they were included in the study (with the exception of those who were too old to have had their early careers well reported by the newer police reporting system), but scale scores were not as closely related to age as were the average number of police contacts for categories included in the scale. In other words, older delinquents were in difficulty with the police more frequently than would be indicated by the scales we have constructed, but they had either multiple contacts for the categories included in the scales or contacts for categories not included in the scale. This was

TABLE 3
AVERAGE SCALE SCORES AND AVERAGE NUMBER OF CONTACTS WITH POLICE
FOR CATEGORIES INCLUDED IN SCALES ACCORDING TO AREAS, MADISON, WIS.,
1950-55

Area	Scale 1		Scale 2	
	Average Scale Score	Average Number of Contacts	Average Scale Score	Average Number of Contacts
	Males			
Central	1.66	2.85	1.58	3.66
East	1.41	2.47	1.45	3.22
West	1.23	1.87	1.28	2.44
	Females			
Central	1.17	1.88	1.35	2.24
East	1.29	2.15	1.13	2.59
West	.93	1.20	1.14	1.18

true for both males and females, but the frequency of contacts with age was greater for males than for females. Although there tended to be an increase in scale scores with age at first contact, early first contacts having the highest scores, again the relationship was not as apparent for the scale scores as for the average number of police contacts. Furthermore, time

in the sample was related to scale scores for both males and females, more so for males (see Table 3), but the relationship for average number of police contacts to time in the sample was far greater, particularly for the males.⁶

Without accepting either scale attempt as a better index of delinquency than a simple count of police con-

⁶ Scale scores for males and females by time and age variables are as follows:

	Scale 1		Scale 2	
	Average Scale Score	Average Number of Contacts	Average Scale Score	Average Number of Contacts
Males				
Year of Birth				
1935 or earlier	.78	2.00	.92	2.52
1936-1940	1.73	3.16	1.82	4.22
1941-1945	1.46	1.99	1.27	2.49
1946 or later	1.26	1.42	1.00	1.67
Age at First Contact				
0-9	1.42	1.94	1.27	2.46
10-13	1.77	2.85	1.59	3.69
14-17	1.43	2.61	1.59	3.53
18-21	.33	1.24	.48	1.24
Time in Sample				
6 years	1.88	4.01	1.72	5.04
5 years	1.60	3.21	1.66	3.94
4 years	1.87	3.01	1.74	3.77
3 years	1.41	2.17	1.45	2.89
2 years	1.23	1.75	1.15	2.17
1 year	1.07	1.22	1.03	1.40
Females				
Year of Birth				
1935 or earlier	.88	1.82	1.09	2.03
1936-1940	1.18	1.95	1.30	2.38
1941-1945	1.43	1.83	1.37	2.15
1946 or later	.90	1.25	1.00	1.40
Age at First Contact				
0-9	1.10	1.58	1.46	1.85
10-13	1.65	2.00	1.44	2.60
14-17	1.06	1.93	1.23	2.27
18-21	.50	1.06	.45	1.09
Time in Sample				
6 years	.97	2.10	1.46	2.50
5 years	1.20	2.01	1.43	2.37
4 years	1.57	2.36	.73	2.96
3 years	.96	1.53	.94	1.78
2 years	1.52	2.09	1.41	2.41
1 year	.83	1.25	.97	1.50

tacts, we shall now examine the distribution of scale types by social areas of the city.⁷ Each scale attempt and a simple additive measure of delinquency—total contacts for the categories employed in the scales—are related to the social areas of Madison in Table 3. In scale attempt 1, the area distribution of scale types for neither males nor females was significantly different from the expected distribu-

⁷ The reader may first wish to consider the basic data presented in earlier reports to which we have referred. The number of police contacts by areas in Madison, Wis., 1950-55, is shown in the A column below, as is the average number of police contacts per 1,000 juveniles a year. When the expected number of police contacts by area, based on the juvenile population of Madison by areas, was compared with the number of contacts observed, the difference was statistically significant at the .001 level. The Central area has a disproportionately high number of contacts, the West area has a disproportionately low number of contacts, and the East area has essentially the number of contacts expected.

tion at the .01 level, but the male distribution differed significantly from that of the null hypothesis at the .05 level. The disproportional number of delinquents residing in the Central area of the city is accompanied by a disproportional number of high-scoring male juveniles or serious delinquency types.⁸

In scale attempt 2, the distribution of scale types for males was significantly different from the expected distribution at the .01 level, but for

When the expected number of referrals by areas, based on the number of contacts by area and the rate of referral for the city, was compared with the number of referrals observed, the difference was significant at only the .05 level, as shown in Column B. The differences follow the pattern for police contacts.

The number of juveniles having police contact is shown in the C columns. The deviation by areas, based on their juvenile population, was significant at the .001 level. Juveniles having ten or more police contacts are shown in the D columns and vary significantly by areas at the .001 level.

	A	B	C	D
	Number of Police Contacts	Number of Referrals	Juveniles Having Any Police Contact	Juveniles Having Ten or More Police Contacts
Central	2,545	1,024	945	42
East	1,347	566	550	20
West	662	228	379	4
Total	4,554	1,818	1,874	66
	$\chi^2 = 665.4$ $p < .001$	$\chi^2 = 6.4$ $p < .05$	$\chi^2 = 115.3$ $p < .001$	$\chi^2 = 31.18$ $p < .001$
	Average Number of Police Contacts per 1,000 Juveniles per Year	Average Number of Referrals per 1,000 Juveniles per Year	Average Number of Juveniles Having Any Police Contact per 1,000 Juveniles per Year	Juveniles Having Ten or More Police Contacts per 1,000 Juveniles
Central	192.9	77.5	71.6	1.274
East	137.9	57.9	56.3	.817
West	66.0	22.7	37.8	.164
Madison	138.1	55.1	56.8	.806

females the area distribution was again not significant. As in the first scale, higher scores were found in the Central area of the city disproportionately to their numbers in the community.

Although scale scores were significantly different by area of the city, it should also be noted that Guttman scale scores differed less than did the average number of contacts of juveniles in the scaling sample. Juveniles in each of the zones were not really markedly differentiated by their average scale scores, and, as in the case of much sociological research, these significant differences are not really differences that add much to our knowledge about juvenile delinquency.

Nonetheless, before we dismiss scale scores entirely, it should be noted

that whenever age was controlled, a disproportionately large number of high scale scores appeared in the Central area and a disproportionately low number of high scale scores appeared in the West area. When only those juveniles born between 1936 and 1945 were included, the differences in the area distribution of scale scores for scale 2 were maximized.⁹ The distribution of males was significantly different at the .001 level with disproportionately high scores in the Central area. The distribution of females was also significantly different and at the .001 level.¹⁰ When only those juveniles born between 1936 and 1940 were included, the male difference was significant at the .01 level but the female difference was significant only at the .05 level.¹¹

GEOMETRIC SCORES AND THEIR MEANING

The introduction to this paper stated that failure of the juvenile con-

⁸ The null hypothesis presumed a distribution of delinquency types based on the proportion of delinquents in each area and the total number of each type of delinquent careers in the community. For scale attempt 1, the value of X^2 for males with 16 degrees of freedom was 29.5225, $p < .05$; the value of X^2 for females with 6 degrees of freedom was 11.2775 (not significant), $p > .05$. When the distribution of scale scores was dichotomized at that point which most efficiently discriminated between areas of the city, the male distribution of serious delinquency differed from the null hypothesis at the .001 level, with serious delinquency occurring to a disproportionate extent among delinquents residing in the Central area. The value of X^2 with two degrees of freedom was 15.9532, $p < .001$. Although the dichotomization of female scores did not result in a distribution of serious delinquency disproportional to the null hypothesis, the ratio of serious to less serious delinquency was always consistent with the general hypothesis whether scale 1 or scale 2 was employed.

For scale attempt 2, the value of X^2 for males with 10 degrees of freedom was 26.1720, $p < .01$; the value of X^2 for females with 6 degrees of freedom was 11.7609 (not significant), $p > .05$.

⁹ The youngest group of juveniles had not had time to develop their delinquent careers fully so that there tended to be a number of young single-contact juveniles in all areas. Differences between areas increased with the age of juveniles except that there were also a number of older juveniles whose first contact was at such a late date that delinquency did not become a pattern of behavior, or, if it did, the behavior became part of their records as adult offenders.

¹⁰ The null hypothesis was that delinquency scores would be distributed by social area based on the proportion of delinquents in each area and the number of each of the delinquent scale scores in the community. The value of X^2 for males with 10 degrees of freedom was 78.6282, $p < .001$; for females with 6 degrees of freedom, X^2 was 26.7530, $p < .001$.

¹¹ The value of X^2 for males with 10 degrees of freedom was 24.1630, $p < .01$; for females with 8 degrees of freedom, X^2 was 17.1457, $p < .05$.

tact data to scale would suggest a different hypothesis; namely, that there are different types of delinquent careers, types that differ in kind rather than degree of seriousness. The literature has been quite convincing in its descriptions of various types of delinquent careers. The basic question in this paper has been whether the kinds of delinquency that have been encountered in urban areas are points on a continuum rather than a menagerie of types. Should the conclusion be that the hypothesis of unidimensionality ought to be rejected, or at least retained only tentatively, we may turn to the geometric scores in exploring the substitute hypothesis.

Unfortunately, the data were coded in such a way that the existence of some of the types suggested in the literature and their relationship to the social areas of Madison cannot be fully tested.¹² Whether or not traffic, liquor, and sex are intertwined in some cases cannot be stated because the records of the juvenile bureau were not coded to indicate the presence of multiple offenses at time of contact. We have been able to describe only those combinations of categories or reasons for police contact that occur over a period of time.

If we observe the various patterns of delinquency that are possible with ten different variables, there are 1,023 different geometric scores possible. That, of course, assumes every person had an equal chance of appearing in any one of the total number of patterns of contacts possible. Now, we

also know that, as far as the sample is concerned, this total number of combinations and permutations of reasons for police contact could not have been 1,023 for the simple reason that there were many juveniles with the same single reason for a police contact, thus reducing the number of juveniles who might be left to fall in other combinations of reasons for police contact. For example, the single-offense juveniles compose 66.7 per cent of the juveniles included in the sample for the first Guttman scale. If we take the juveniles who had police contact for only two or three reasons, 211 of them fall in the eleven most frequent patterns involving contact for more than one reason. This means that 80.2 per cent of all the juveniles in the sample are in either the single-contact category or the ten most frequent combinations. In other words, twenty-one different geometric scores or types out of hundreds of possible combinations and permutations make up 80.2 per cent of the total. The data are shown in Table 4.

In the second scaling attempt—in which incorrigible, runaway, truancy, disorderly conduct, and unspecified contacts with the police were eliminated—668, or 74.1 per cent, of the juvenile police contacts had one of the single seven remaining reasons for police contact, and 148 additional juveniles were in another ten categories with two to four reasons for police contact, thus giving us 90 per cent of the juveniles in a total of seventeen types of delinquent careers. Considering the fact that 127 different permutations and combinations are possible, this is indicative of considerable clustering, but it is also based on the fact that three-fourths of the juveniles had only one type of police contact. Of

¹² An excellent discussion of various approaches to constructing delinquent types is presented in Theodore N. Ferdinand, *Typologies of Delinquency* (New York: Random House, 1966).

these, as far as both the first and second scaling attempts were concerned, the persons who had a single contact were distributed so unevenly that the probability of there being more than a relatively few types was certainly not great. When 74 per cent of the contacts, as in the case of the

second scaling attempt, were for the seven categories of single offenses included, leaving only one-fourth of the juveniles, there was not much chance that they would be distributed over the entire range of categories possible.

In the sample utilized in the first

TABLE 4
TYPES OF DELINQUENT CAREERS IN MADISON, WIS., 1950-55

	First Scale—Ten Reasons for Police Contact	Second Scale—Seven Reasons for Police Contact
Incorrigible, Runaway, Truancy	287	
Disorderly Conduct	231	337
Contact, Suspicion, Investigation, Information	151	
Vagrancy	86	130
Traffic	132	
Theft	76	107
Liquor Violations	43	60
Burglary	11	18
Auto Theft	10	17
Sex Offenses	10	17
Total Single-Contact Types	1,037 (66.7%)	686 (74.1%)
Incorrigible, Runaway, Truancy, Disorderly Conduct	48	
Incorrigible, Runaway, Truancy, Contact	29	
Disorderly Conduct, Contact	23	
Incorrigible, Runaway, Truancy, Disorderly Conduct, Contact	11	
Incorrigible, Runaway, Truancy, Vagrancy	20	
Disorderly Conduct, Vagrancy	12	28
Contact, Vagrancy	11	
Incorrigible, Runaway, Truancy, Traffic	11	
Disorderly Conduct, Traffic	17	
Contact, Traffic	14	
Theft, Incorporrigible, Runaway, Truancy	15	
Disorderly Conduct, Theft		29
Vagrancy, Theft		17
Disorderly Conduct, Vagrancy, Theft		19
Disorderly Conduct, Liquor		9
Vagrancy, Liquor		9
Disorderly Conduct, Vagrancy, Liquor		11
Theft, Liquor		8
Disorderly Conduct, Vagrancy, Theft, Liquor		9
Disorderly Conduct, Auto Theft		9
Most Frequent Multiple-Contact Types	211 (13.5%)	148 (15.9%)
Most Frequent Types	1,248 (80.2%)	834 (90.0%)
Total Juveniles in Sample	1,553 (100.0%)	926(100.0%)

scaling attempt, there were a total of 184 different types among the 1,553 juveniles, and in the sample for the second scaling attempt there were a total of sixty-two types among the 926 different juveniles. As far as describing the pairs or triplets of reasons for contact is concerned, it need only be noted that in the first scaling attempt the pairs of reasons for contact consisted in the main of pairs of the most frequent single reasons for contact. Theft, liquor, burglary, auto theft, and sex offenses (the five least frequent single-offense categories) seldom showed up in pairs with the five most frequent single reasons for police contact. For example, there were only eight cases in which disorderly conduct and theft were paired.

In essence, the vast bulk of the juveniles have had a contact or contacts for one of the ten reasons for contact included in the first scaling attempt or had multiple contacts for only two or three separate reasons selected from the five most frequent reasons for contacts. With the exception of traffic offenses, these constitute a rather loosely defined group of juveniles who were incorrigibles, runaways, truants; disorderly; juveniles in some cases categorized as vagrant; or in many cases juveniles who simply had a contact with the police for suspicion, in connection with an investigation, or because the police were seeking information from them. At the bottom of the geometric scale are a few juveniles who had a contact with the police as sex offenders in addition to a contact for incorrigibility or disorderly conduct or an unspecified contact or, in two cases, a contact for vagrancy, and so on.

The nature of this mixed bag of juveniles is readily apparent, for ex-

ample, when one notes that four juveniles had contact for burglary and incorrigibility, four had contacts for auto theft and disorderly conduct, and so on.

Turning back to the sample for the second scaling attempt, we have noted that 74 per cent of the juveniles involved had engaged in only one type of behavior and in most cases where there were two reasons for police contact, these consisted of a mixture of different types of categories—disorderly conduct and vagrancy, or disorderly conduct and theft, or vagrancy and theft, or disorderly conduct, vagrancy and theft.

The point is that, even with only ten or seven different reasons for police contact, juveniles are a heterogeneous lot; they do not have similar types of police contact. Had we considered all the juveniles in the larger sample for all the possible reasons for police contact, we would have had even more indication of diversified careers.

CONCLUSIONS

The data in this paper cast considerable doubt on the hypothesis of unidimensionality and the hypothesis of distinctive types of delinquent careers. Actually, relatively few of those delinquents who had police contacts had what could be called a career in delinquency. Juveniles with multiple contacts and what might be defined as careers in delinquency engaged in quite diversified behaviors. One must tentatively conclude that the total number of police contacts by a juvenile for those reasons that involve a violation of the law or more serious juvenile misbehaviors (serious as perceived by the public and authorities in the community) will serve

as an index of juvenile misbehavior just about as well as or better than either Guttman scale scores or geometric scores. This conclusion must be tentative at the moment, however, pending a similar analysis of juvenile contact data for Racine, Wis., since Madison may be an unusual case.

The Racine data will cover a ten-year period for 1,370 juvenile careers. The range of offenses in Racine is considerably greater than in Madison

and includes a considerably larger proportion of juveniles who have committed Crime Index offenses, such as theft, robbery, auto theft, and assault. The social areas in Racine have a greater range from lowest to highest in socio-economic status than Madison. The Racine data will permit a better test of the two competing hypotheses, undimensionality vs. types of delinquent careers.

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