48241

A Study of Base Expectancy Tables for Juvenile Probationers

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I. Introduction

From 1950s there has been a world-wide development in practising Base Expectancy Table (prediction table) in the field of probation and parole. In short, Base Expectancy Table provides tools for (1) decision-making for parole and other kinds of dispositions, (2) case assignment for differential treatment programs, and (3) comparison of efficiency among various treatment methods.

From 1967 in Japan one kind of prediction table for juvenile probationers and parolees has been practised for the purpose mentioned in (2) above, which consists of twenty items and uses simple pointscoring system. It aims at classifying the subjects (supervisees) into either "A" group (difficult) or "B" group (not difficult) and providing them with treatment of differential intensity according to the expected degree of difficulty in treatment. But the efficiency of the present table ("the Classification Table"), which has called for an overall reassessment, has not been fully examined so far.

II. The Purpose of This Study

The purpose of this study is to examine the efficiency of the present Classification Table for evaluating the non-recidivism base expectancy of juvenile probationers, and, at the same time, to explore the possibility of the construction and validation of new tables.

III. Methodology

A total of 1493 juveniles were drawn randomly from those placed on probation from December, 1971 to February, 1972 throughout the country, and their backgrounds, application of the Classification Table and recidivism were investigated as of November 10, 1973. Recidivism was crosschecked with the fingerprint sheets of the National Police Board. The number of the variables on their backgrounds so investigated was seventy-four. The length of follow-up period was two years. Those placed on probation for traffic offenses, either simple or causing death or bodily injury, were excluded.

Figure 1
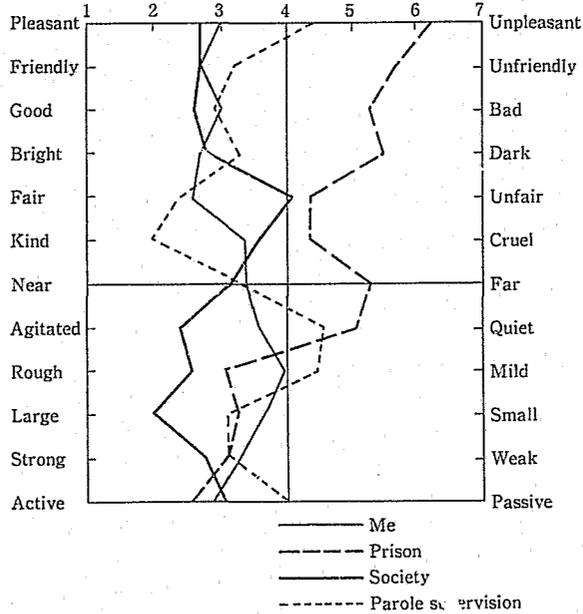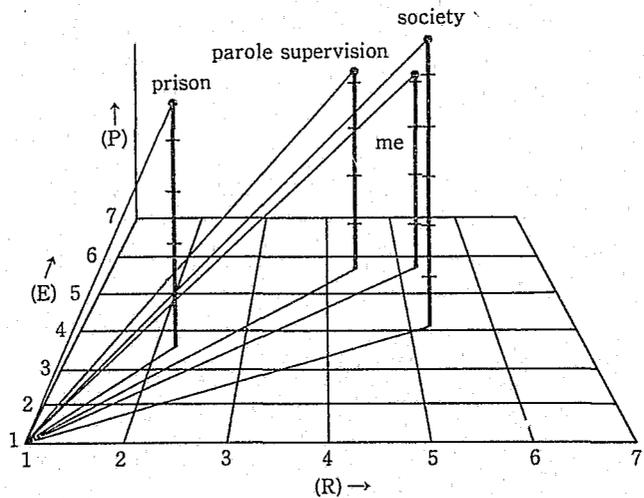### PAROLEES' PERCEPTION OF FOUR CONCEPTS QUANTIFIED BY SEMANTIC DIFFERENTIAL SCALES
N=282

Pleasant							Unpleasant
Friendly							Unfriendly
Good							Bad
Bright							Dark
Fair							Unfair
Kind							Cruel
Near							Far
Agitated							Quiet
Rough							Mild
Large							Small
Strong							Weak
Active							Passive

———— Me
— — — — Prison
———— Society
- - - - - - - Parole su ervision

Figure 2
Co-ordinates of the
Four Concepts

society

parole supervision

prison

(P)

me

(E)

(R) →

The outcome of the Two years' follow-up study are as follows.

(1) Non-Failure group (No absconding and No arrest)   53.2%

(2) Petty Failure group (Absconding; Dismissal with or without
       hearing for a fresh offense)   31.8%

(3) Major failure group (Fresh probation order; Training School
       order; Suspension of prosecution; Fine; Imprisonment)   14.9%

In this study, consideration was given to the plural criteria as follows, not to any single criterion.

Criterion I. Those mentioned in (1) above are defined as success group and the others as failure group.

Criterion II. Those mentioned in (1) above and those who have experience of absconding in the course of probation are classified as success group and the others as failure group.

Criterion III. Those mentioned in (1) and (2) above are classified as success group and the others as failure group.

Criterion IV. Those mentioned in (1) above are classified as success group, those mentioned (2) above as middle group, and those mentioned (3) above as failure group.

The subjects were assigned randomly to either construction sample or validation sample, so that base expectancy tables constructed by the former could be validated in regard to their efficiency and stability by applying them to the latter.

For the preliminary screening of predicting items, Chi-square test of the cross correlation table of Criterion I and each variable was conducted in the construction sample. Items with especially low Chi-square values, items in which number of subjects was extremely concentrated on a single category, and items involving many in the "no-information" category were excluded, leaving only forty items for further analysis. The two multiple correlation methods mentioned later were used concurrently to screen the items further and to construct new tables.

Values of Mean Cost Rating were used in measuring the predicting power of these tables.

IV. Results

(1) Practice of the present Classification Table and its discriminating power

Practice of the present Classification Table is as follows. The average points per head is 5.4 with the standard deviation 2.36, which appears to be small. The points range from 0 to 14 and none gets more than 14. According to the present principle of classifying those who get more than 10 as "A", only six per cent fall under the criterion, which means only a part of wouldbe recidivists can be earmarked as "A".

A collation of the score classes with the progress of the individuals to evaluate the predicting power of the Classification Table revealed that discriminating power by Criterion II is the lowest and by Criterion I the second. The power was greatest in Criterion III, but it still proved to be too low a level for a prediction table of practical use. In the validation sample, the discriminating power of each criterion turns out to be lower. The points given by the Classification Table in the beginning of probation showed an agreeable power in predicting levels of adjustment evaluated by probation officers two years later. Yet such levels still seemed too subjective to be a criterion of prediction that called for more precise definition.

The overlapping of the twenty items is not so large as expected, judging from the fact that no correlation co-efficient is over 0.36. It was found, however, that some items contributed very little to prediction, and some did even inversely.

(2) Construction and validation of tables by discriminant analysis (weighted integer scoring method) using multiple correlation ratio

In the first place, an examination was made to tap the possibility of modifying the Classification Table to improve its efficiency without introducing new items by multiple correlation ratio method. Fourteen items of the original table were selected and given varied weights ranging from 1 to 7. Predicting power of Criterion III was examined by calculating individual scores. The results showed the power in the construction sample was high enough, but it shrank severely in the validation sample and did not stay at a level warranting practical use.

Secondly, the same analysis was done using the present Classification Table items with forty new items mentionetd earlier. From them were selected fourteen items which included four items of the present Table. Predicting power of the new table thus worked out was high enough and, though the shrinkage as it was applied to the validation sample was considerably great, the table still maintained a level warranting practical use. Table 1 is the prediction table thus formulated.

(3) Construction of tables by multiple linear regression analysis using multiple correlation method

Here, too, modification of the present Classification Table was attempted first. This method does not require a criterion to be dychotomized (0 or 1), so the Criterion IV was adopted. The results by multiple correlation analysis also proved the use of fourteen items of the present Classification Table to be optimal. Each item was weighted and predicting power of the table was measured. The results showed a considerable efficiency in discriminating non-failure group from two other group... Although the table superseded the present method even with a considerable shrinkage of power in the validation sample, it failed to reach an efficiency level of practical use.

Secondly, an analysis of the same method was carried out using twenty-six items of above-mentioned forty items, mixed with thirteen items of the present Classification Table. The results showed constructing a table with thirteen items or nine items to be optimal. Both tables are shown as Table 2 below. But measuring of individual scores, and examination and validation of the table by such scores is not yet finished. So the efficiency of these two tables will be left to the examination in a forthcoming report. In the meantime, however, the value of multiple correlation coefficient observed suggests considerable predicting power.

Examination of Criterion I and II with the same data and method have proved difficulty in reaching a sufficient level of predicting power, so the construction of a table by them was given up.

Table 3 shows predicting power of all the tables constructed and validated in this study in MCR values. It seems thus far that the new fourteen-item table produced by multiple correlation ratio method is most efficient and qualified to substitute for the present Classification Table in predicting two year's conduct of juvenile probationers.

V. Conclusion

It is said not so easy to foretell the future of the juveniles as that of adults, which, perhaps, owes to the changeability of the former. Also from the viewpoint of data collection it may be easier to construct a prediction table for adult palorees. Psychological test results, which was not available in a number of cases in this study, may be an indispensable tool in constructing a more efficient table.

Various methods presently available for producing a prediction table have their respective weakpoints. Some asserts convincingly that classification of the offenders by one method and construction of multiple tables by another method for sub-groups so classified will be more efficient. In this study it was desired at first to adopt configural analysis for such preliminary classification of the sample, but various conditions did not allow this to be realized, leaving such an approach to a future study.

Table I: New Table Produced by Multiple Correlation Ratio Method

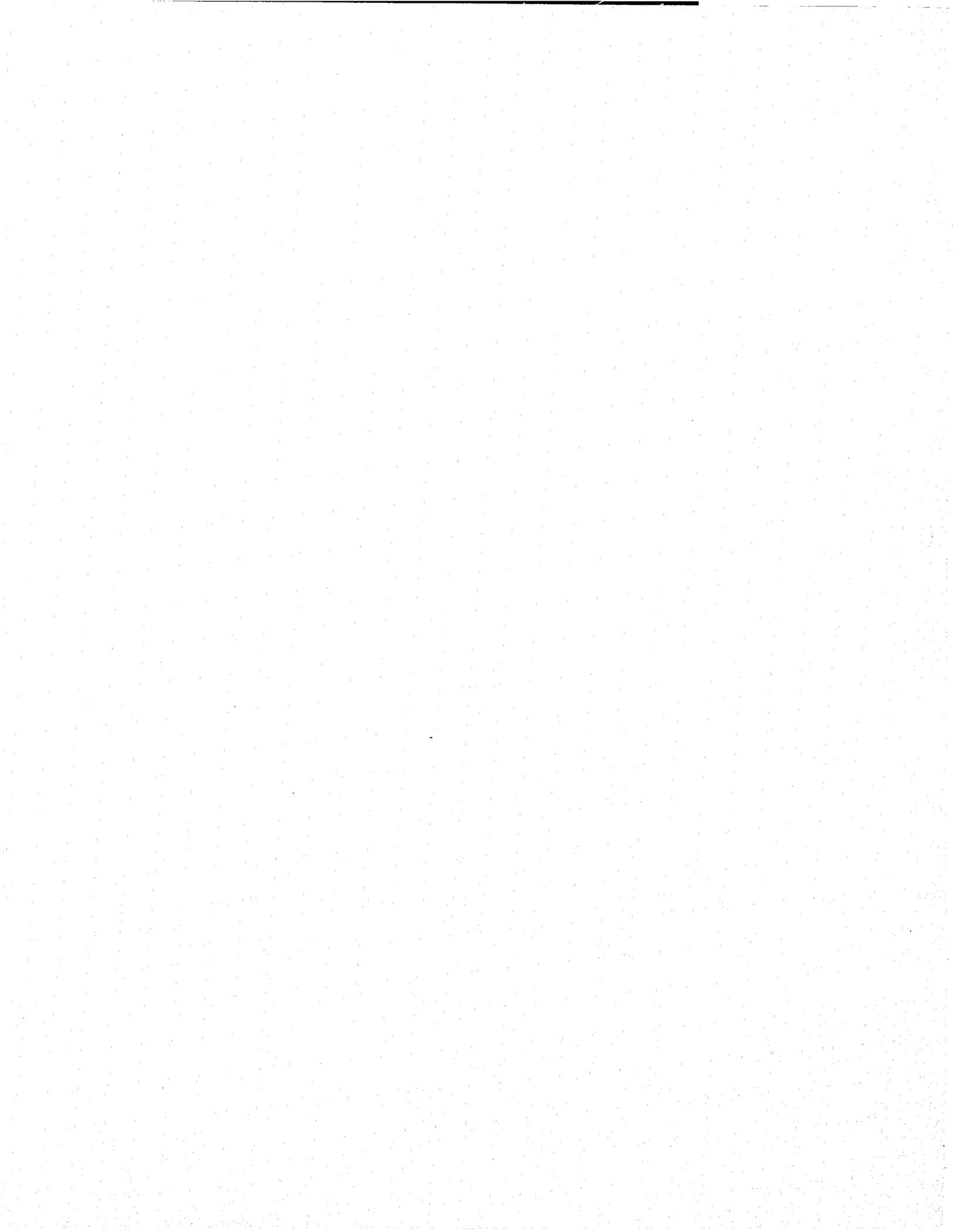| Variables (items)	Conditions for giving Points	Weights
1. Attitude toward probation	Good, Fair, Unknown	2
2. Runaway or vagrancy	None	1
3. Previous achievement in probation*	Not bad, no record	1
4. Shortest interval of dispositions	No disposition	1
5. Number of past dispositions	Less than 3	2
6. Previous institutional commitments*	None	2
7. First delinquency	4th grade of primary school or after	1
8. Relationship with family*	No over problem	1
9. Association with delinquent gang	None	1
10. Early financial background	Poor	1
11. Drunkenness	No	1
12. Neighborhood*	Applicable	1
13. Alias	None	1
14. Residence at the time of offence	Fixed	1

Note: Asterisks are items in the present Classification Table.

Table II: New Table Produced by Multiple Correlation Method
(New thirteen-item table and nine item-table)

Variables (Items)	Categories	Weights 13-item table	Weights 9-item table
1. Number of past dispositions	3. None 2. 1 to 3 1. 4 and over	1.1 0.7 0.4	1.3 0.9 0.4
2. Number of jobs	3. 1 or Not applicable 2. 2 to 4 1. 5 or more	0.4 0.3 0.1	0.6 0.4 0.2
3. Beginning of truancy	2. None, Not applicable, 10th grade or after, 1. 9th grade or before	0.4 0.2	0.4 0.2
4. Parents' ethnic status	2. Both Japanese 1. Others	0.4 0.2	0.4 0.2
5. Delinquent friends	2. Not applicable 1. Yes	0.3 0.2	0.4 0.2
6. Parental control	2. Good, 1. No good, no guardian	1.0 0.5	1.1 0.6
7. Type of delinquency	3. Disorderly conducts of radicals, homicide, robbery, rape, indecency 2. Bodily injury, Theft, other penal-code-offences special-code offences 1. Extortion, Assault, Pre-delinquent acts	0.3 0.2 0.1	0.4 0.2 0.1
8. Runaway or vagrancy	2. No 1. Yes	1.3 0.6	1.4 0.7
9. Prospect for continuation of school or employment	2. Certain 1. Uncertain, Not applicable	0.5 0.3	0.7 0.4
10. Family relationship	2. Good, Not applicable 1. No good	0.2 0.1	
11. Previous achievement in probation	2. Not bad, no record 1. Bad	1.0 0.5	
12. Detention before probation	2. No 1. Yes	0.2 0.1	
13. Longest job	3. More than 1 year 2. Not applicable 1. Less than 1 year	0.6 0.4 0.2	
Constants		—3.7	—2.9

Table III: Predicting Power (MCR) of the Tables

Tables	Criteria	MCR C. Sample	MCR V. Sample
<Simple point scoring method>			
21-item present Classification Table	Criterion I (No failure/others)	0.25	0.22
	Criterion II (No arrest/arrest)	0.21	0.18
	Criterion III (No failure, petty failure/Major failure)	0.30	0.23
	Rehabilitation Stage (Sure/others)	0.30	0.29
<Multiple correlation ratio method>			
14-items of the present Classification Table	Criterion III (No failure, petty failure/Major failure)	0.38	0.23
New 14-item table	Criterion III	0.54	0.31
<Multiple correlation method>			
14-items of the present Classification Table	Criterion IV.		
	a. (No failure/others)	0.28	0.24
	b. (Reconviction except petty penalty: No/Yes)	0.33	0.20

END