The Measurement of Inmate Social Role Types: An Assessment

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During the past thirty years a considerable volume of research examining factors related to the inmate social roles within prison communities has accumulated.[1] This concern with social role reflects an interest in variations in adaptation to prison confinement. When inmates enter correctional institutions, they become participants in the informal inmate organization. As is true when individuals become participants in more conventional organizations, inmates typically move into one of a number of the positions making up the structure of the prison society. Thus, if it were possible to develop a reliable means of acquiring information on the type of position that an inmate had assumed, we would be better able to understand and predict attitudinal and behavioral changes that might occur from confinement.

Despite both the theoretical importance of inmate role adaptations and the frequency with which this variable has been examined, little research has focused on the empirical soundness of the measures that have been employed. At least two basic questions must be resolved if we are to demonstrate the continuing utility of this concept for criminological research and institutional management. First, does a given measure of inmate role type discriminate between the types of role adaptations that are of interest? Second, even if the measure does discriminate between types of in-

mates, does it add to our capability to predict other critical variables? In other words, does a given measure actually perform as it is intended? If so, is it of any substantive utility? Given the fact that one particular approach to measuring inmate role types has drawn a considerable amount of interest,[2] the purpose of our research is to examine both the extent to which this approach discriminates between types of inmates and its potential for predicting other salient aspects of adaptation to institutional confinement.

METHODS

Our research is based on data obtained from inmates who were confined in a Virginia maximum security institution for adult male felons. A systematic random sample (N=405) was drawn from all of those who were permanently assigned to the working populations of the institution (N=810), and a subsample was drawn from those confined in the maximum security cell block (N=37). Some initial sample shrinkage was caused by transfers, releases, illness, and unavoidable conflicts with institutional schedules; however, most of the initial cases were available for contact (N=401). Additional cases were lost due to refusals to cooperate and improperly completed questionnaires. Nevertheless, completed and usable questionnaires were obtained from 84% of the sample (N=306). Supplemental data were then obtained by matching the questionnaires with permanent prison records, and 82% of the completed questionnaires were successfully matched (N=276). Thus, this research is based on the data obtained from the matched group of 276 inmates.

INMATE SOCIAL ROLE TYPES

Inmate role adaptations are conceptualized as reflections of the positions into which inmates move within the structure of the informal inmate organization. To measure inmate role types, we employed a modified form of the technique reported

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[1] See D. CLEMMER, THE PRISON COMMUNITY (1940); C. SCHRAG, SOCIAL TYPES IN A PRISON COMMUNITY (1944); Giallombardo, *Social Roles in a Prison for Women*, 13 SOC. PROBS. 268 (1966); Irwin & Cressey, *Thieves, Convicts, and the Inmate Culture*, 10 SOC. PROBS. 142 (1962); Schrag, *Some Foundations for a Theory of Corrections*, in THE PRISON 309 (D. Cressey ed. 1961); Sykes, *Men, Merchants, and Toughs: A Study of Reactions to Imprisonment*, 4 SOC. PROBS. 130 (1956); Thomas & Foster, *Prisonization in the Inmate Contraculture*, 20 SOC. PROBS. 229 (1972); Wellford, *Factors Associated with The Adoption of the Inmate Code: A Study of Normative Socialization*, 58 J. CRIM. L.C. & P.S. 197 (1967); Wheeler, *Socialization in Correctional Communities*, 26 AMER. SOC. REV. 697 (1961).

[2] See Garabedian, *Social Roles in a Correctional Community*, 55 J. CRIM. L.C. & P.S. 338 (1964); Garabedian, *Social Roles and Processes of Socialization in the Prison Community*, 11 SOC. PROBS. 139 (1963); Thomas & Foster, *supra* note 1.

by Garabedian.[3] A set of twenty-three Likert-type items were developed, with each item designed to reflect a component of the attitudinal organization of a given role type: Square John (four-item scale), Ding (three-item scale), Politician (seven-item scale), Right Guy (five-item scale), and Outlaw (four-item scale). Item responses were scored on a five-point continuum. For each role type scale, the greater the scale score, the higher the endorsement of the attitudes.

The inmate is thus represented by five scale scores, indicating his status on each of the five role types. To provide a basis for comparison of the role type scales we transformed the raw summated scale scores into standardized scores (since the five role type scales were not comprised of the same number of items). The classification of incumbents of the five role types was then determined by the highest positive Z-score attained on any scale. In cases where all five Z-scores were negative, the inmate was classified in favor of the score which was closest to the mean ($\bar{X}$) of a given role type.[4]

RESULTS

RELIABILITY

The reliability of a measure refers to its internal consistency.[5] Reliability is the minimum require-

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[3] Garabedian (1964), *supra* note 2; Garabedian (1963), *supra* note 2.

[4] It should be pointed out that in Garabedian's (1963) original role typology approximately 27% of the inmates could not be classified. Using a scoring system that yielded a range of +6 to −6 for each of his three-item role type scales, Garabedian decided to exclude from classification any inmate whose highest score on any of the five scales was three or less. He offers no rationale for this procedure and, to us, his decision seems quite arbitrary.

Since inmates may be viewed as falling along a continuum of attitudinal endorsement for each of the role type scales, it makes more theoretical sense to evaluate an inmate's attitudes relative to those of other inmates. A comparison of standardized scores allows for this evaluation and thus enables us to classify all inmates according to their relative standing on the inmate role types. In this way, although some inmates may not unambiguously display any distinct role orientation, they may be seen as relatively more predisposed to one of the five role types than are other inmates.

As a check on the merits of our logic, we performed a separate analysis of the data excluding those inmates whose five Z-scores were negative (n=15; 5.4% of our sample). The results of this analysis were essentially identical to those reported here using all inmates in our role classification.

[5] L. CRONBACH, ESSENTIALS OF PSYCHOLOGICAL TESTING (2d ed. 1960).

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ment of a test, and consequently, it is the one most frequently reported. Since our indicator of social role type is a composite measure formed from a linear combination of responses to a series of Likert-type items, we decided to employ coefficient alpha[6] to estimate the reliability of each role type.

No absolute rules exist as to the minimum reliability required of a measure. It is generally accepted, however, that scales used for research purposes should have reliability coefficients of at least .50.[7] With this figure as a point of comparison, we present in table 1 the reliability coefficients of the five role types. Table 1 shows that of the five role types, only the Outlaw scale has a reliability coefficient reaching the minimum requirements for research purposes. Further, regarding the average interitem correlation for each scale, note that the variables comprising these composite measures indicate an absence of internal consistency in the sense of being indicators of a common factor. This interpretation is made more evident when examining the intercorrelation matrices of the items for each scale (see Appendix A). What is most striking is the plethora of negligible or near-negligible correlations, as the highest correlation noted within any of the matrices is .303.

ITEM ANALYSIS

Item analysis denotes several different techniques for examining the relationship of the score given to an item to the composite score of the scale to which the item belongs.[8] For example, if an individual gave a higher than average score to a particular item, he should also have a higher overall score on the scale to which the item belongs. If the scores for a particular item bear no relationship to the scale score, then that item should not be included in the scale. Theoretically, such an item analysis procedure not only insures parsimony but also improves the internal consistency of the scales.

In the traditional prison research utilizing attitudinal measures of social role types, item analysis of the five role configurations has been accom-

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[6] Alpha is a lower bound estimate of the reliability of a composite scale formed by unweighted, summarized item scores. Alpha was computed using the following formula:

$$[p/(p-1)] \ [1-(\Sigma VARi/VARx)]$$

where VARi = the variance of the score of item i, VARx = the variance of the scale formed by summing the raw item scores; and p = the number of items in the scale.

[7] J. NUNNALLY, PSYCHOMETRIC THEORY (1967).

[8] *Id.*

TABLE 1

SUMMARY TABLE OF RELEVANT STATISTICAL INFORMATION FOR SOCIAL ROLE TYPES

Scale	Mean	Standard Deviation	Average Inter-item Correlation	Coefficient Alpha	N	Range
Square John	14.605	3.280	.092	.288	70	4-20
Ding	8.786	2.990	.156	.357	65	3-15
Politician	25.558	4.274	.099	.435	49	7-35
Right Guy	17.384	3.861	.101	.360	44	5-25
Outlaw	13.101	3.497	.199	.499	48	4-20

plished by correlating the responses to each attitude item with the summated scale score of the scale in which the item appeared. This procedure generated quite impressive results, as researchers were able to report item-to-scale correlations that were consistently high and consistently statistically significant. Consequently, because of this impressive empirical evidence, the inmate role scales themselves have remained consistent in form and content. A replication of this same item analysis technique was performed here yielding, not surprisingly, similarly impressive results. Every scale item was moderately to highly correlated with its respective scale. Moreover, these item-to-scale correlations were all statistically significant at the .001 confidence level.

Although these findings are in concert with earlier ones, two crucial issues need addressing. First, with respect to the consistently statistically significant correlations observed, it should be noted that prison researchers have invariably dealt with relatively large samples of inmates.[9] Consequently, statistical significance is easily obtained. Second, the item-to-total correlation technique adopted in previous research has included the item under study in the total scale score. Several writers have observed that this method of item analysis results in item-to-total correlations that are spuriously high.[10] Although this problem is minimized when a scale is comprised of many items, Nunnally[11]

maintains that it is necessary to correct the item-to-scale correlations for the spurious artifact whenever the scale contains five or less items. Considering the five social role type scales, we note that only the Politician scale has more than five items. In light of this fact and the implications of the preceding discussion, we computed corrected item-to-scale correlations for each scale using the formula derived by Cureton.[12] A comparison of the uncorrected correlations with their corrected counterparts reveals a dramatic drop in the magnitude of the original correlations (see table 2). For the Square John scale the average percentage decrease in the size of the uncorrected correlations was 65%, while for the Politician and Right Guy scales the average reduction was 56% and 61%, respectively. The smallest average drop in correlation size was observed in the Outlaw scale with a 47% decrease. On the other hand, there was an average decrease of 71% in the size of the correlations in the Ding scale. Overall, our correction of the original item-to-total correlations resulted in an average reduction in correlation size of 60%.

Therefore, the corrected correlations reported in table 2 indicate the need to reconsider the item make-up of these role type scales. Specifically, given the low internal consistency of these scales, their discriminatory power is called into question. Thus, our next task is to determine whether the measures of the five basic role types discriminate among categories of inmates.

ASSESSMENT OF DISCRIMINATORY UTILITY

The determination of discriminatory utility is best approached in two ways. First, the percentage

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[9] *See* Garabedian (1963, 1964), *supra* note 2; Thomas & Foster, *supra* note 1; Wheeler, *supra* note 1.

[10] J. GUILFORD, PSYCHOMETRIC METHODS (2d ed. 1954); Henrysson, *Correction of Item-Total Correlations in Item Analysis*, 28 PSYCHOMETRIKA 211 (1963); Zubin, *The Method of Internal Consistency for Selecting Test Items*, 25 J. EDUC. PSYCH. 345 (1934).

[11] J. NUNNALLY, *supra* note 7.

[12] Cureton, *Corrected Item-Test Correlations*, 31 PSYCHOMETRIKA 93 (1966).

TABLE 2
UNCORRECTED AND CORRECTED ITEM-TO-SCALE CORRELATIONS BY SOCIAL ROLE TYPE

Scale	Item*	Uncorrected Item-to-Scale Correlation	Corrected Item-to-Scale Correlation
Square John	Item 1	.506	.058
	Item 2	.508	.159
	Item 3	.582	.277
	Item 4	.654	.316
Ding	Item 1	.723	.182
	Item 2	.689	.268
	Item 3	.571	.124
Politician	Item 1	.443	.087
	Item 2	.585	.297
	Item 3	.329	.107
	Item 4	.316	.151
	Item 5	.482	.322
	Item 6	.635	.439
	Item 7	.471	.113
Right Guy	Item 1	.586	.214
	Item 2	.432	.043
	Item 3	.621	.415
	Item 4	.512	.177
	Item 5	.488	.228
Outlaw	Item 1	.451	.243
	Item 2	.667	.347
	Item 3	.702	.416
	Item 4	.673	.304

* For item content see Appendix B.

distributions of relevant criterion variables for each of the five scale types can be compared with one another to determine the extent to which there are substantively significant differences. This comparison appears in table 3. Inspection of this table reveals that important background, criminal career, and institutional characteristics of the inmate types are essentially the same. There is a considerable similarity in percentage of inmates who are divorced, who have less than a high school education, and who are unskilled. The only statistically significant difference obtained is the comparison of inmate role types by race. Yet there is no interpretable pattern of variation across role types to make this difference meaningful. In fact, given the thirteen comparisons that are tested, this one statistically significant difference itself may have occurred by chance (p=.08).

Salient criminal career variables that have been suggested to affect type of adaptation to prison life are also found to be almost invariant by role types.

For example, the percentage distributions for juvenile arrest or incarceration, prior felony conviction, age at entry into prison, and time served in prison were all consistent for the five inmate social roles.

The lack of variation on these important background and career characteristics between the role types indicates the inability of these scales to distinguish inmates according to attributes which have previously been identified as crucial to the inmate's mode of adaptation to confinement.[13] One interpretation of these findings is that the five scales fail to tap different dimensions of adaptation.

Evidence from this phase of analysis notwithstanding, we next examine the degree of intercorrelation among these five subscales. The logic supporting our approach is straightforward. If two or more scales were actually measuring the same or

[13] See Garabedian (1963), *supra* note 2; Schrag, *supra* note 1; Wheeler, *supra* note 1.

TABLE 3

SELECTED BACKGROUND, CRIMINAL CREER, AND INSTITUTIONAL CHARACTERISTICS OF INMATES BY SOCIAL ROLE TYPES
(PERCENTAGES)

Characteristics	Square John	Ding	Politician	Right Guy	Outlaw	
% Non-White	52.4 (63)	53.1 (64)	66.7 (42)	35.0 (40)	70.4 (44)	$\chi^2=13.29, p=.01$
% Divorced	15.7 (70)	10.8 (65)	18.4 (49)	11.4 (44)	12.5 (48)	$\chi^2=1.87, p=.76$
% With less than high school education	49.2 (61)	62.9 (62)	69.0 (42)	46.2 (39)	53.5 (43)	$\chi^2=6.90, p=.14$
% Occupationally unskilled	34.3 (67)	44.4 (63)	33.3 (48)	32.6 (43)	52.2 (46)	$\chi^2=6.12, p=.19$
% With juvenile arrest record	25.8 (66)	27.0 (63)	32.7 (49)	34.9 (43)	38.3 (47)	$\chi^2=2.86, p=.58$
% With juvenile incarceration record	10.6 (66)	19.0 (63)	20.4 (49)	27.9 (43)	17.0 (47)	$\chi^2=5.49, p=.24$
% With prior felony conviction	48.5 (66)	58.7 (63)	55.1 (49)	58.1 (43)	39.1 (46)	$\chi^2=5.36, p=.25$
% Entering prison < 25 year old	34.3 (70)	47.7 (65)	26.5 (49)	47.7 (44)	45.8 (48)	$\chi^2=9.24, p=.06$
% Who have served > 5 years in prison	80.7 (57)	67.2 (58)	82.5 (40)	68.3 (41)	65.8 (38)	$\chi^2=6.00, p=.20$
% Reported for prison rule violation last 12 months	21.4 (70)	27.7 (65)	24.5 (49)	22.7 (44)	25.0 (48)	$\chi^2=.79, p=.94$
% Sent to meditation last 12 months	10.0 (70)	20.0 (65)	16.3 (49)	18.2 (44)	22.9 (48)	$\chi^2=4.09, p=.39$
% Having one or more visitors per month	49.2 (63)	33.9 (59)	37.2 (43)	31.7 (41)	43.9 (41)	$\chi^2=4.72, p=.32$
% Engaging in homosexual relations with other inmates	18.3 (60)	54.1 (50)	20.6 (34)	36.1 (36)	27.5 (40)	$\chi^2=8.42, p=.08$

a Number of cases are shown in parentheses. All statistics are based on those inmates for whom either questionnaire responses or institutional records provided information for the selected characteristics. Number of cases thus vary due to either non-response to questionnaire item or unavailability of data in institutional records.

b For all chi-square tests, df=4.

very similar attitudes, we would expect their correlations with one another to be near zero. Because each scale represents an attempt to place individuals along a prosocial to asocial continuum, we would expect moderate intercorrelations, but high levels of intercorrelations would raise serious ques-

tions about their homogeneity. Results of this correlational analysis presented in table 4 reveal substantial correlations between several pairs of scales. Although we expected slight intercorrelations between contiguous role types, we find unacceptably high levels of association among the Politician,

TABLE 4

INTERCORRELATION MATRIX OF INMATE SOCIAL ROLE TYPES

	Square John	Ding	Politician	Right Guy	Outlaw
Square John	1.000	.095	.027	-.051	-.224
Ding		1.000	.223	.088	.262
Politician			1.000	.373	.402
Right Guy				1.000	.407
Outlaw					1.000

Note: $r \geq .12$ significant at .05 level.

Right Guy, and Outlaw scales at the antisocial end of the continuum. The size of their correlation coefficients indicate that these three measures are very likely tapping the same phenomenon. Further, the correlation between the Square John and Ding scales is negligible. This outcome, too, is surprising; given that these are the two prosocial role types, at least a weak level of association was expected. And finally, the prosocial Ding scale is moderately correlated with both the pseudosocial Politician scale and the asocial Outlaw scale—another unexpected finding. In light of the preceding evidence, it is apparent that these role types fail to provide any meaningful ordering of inmates along the prosocial-asocial continuum.

ASSESSMENT OF PREDICTIVE UTILITY

Our final assessment of the social role type scale involves an evaluation of its capacity to predict actual behavior within the prison setting. In order to ascertain the extent to which the measures of social role types can be used as predictors of behavioral responses to confinement, we computed the percentage of inmates reported for rule violations (during the past twelve months) and the percentage of inmates sent to meditation or solitary confinement (during the past twelve months) for each role type. As noted above, prior research has suggested that role adaptations may be ranked from prosocial to asocial.[14] If these suggestions are valid, one would expect that the antisocial roles would have a greater proportion of inmates with records of both institutional misconduct and official sanctions. However, contrary to expectations, table 3 reveals a near absence of variation in the percentage distributions of either variable for the

[14] Garabedian (1963, 1964), *supra* note 2; Schrag, *supra* note 1.

five role types. In other words, the incidence of these institutional behaviors is equally probable regardless of role type considered.

Finally, the failure of the role type scale to differentiate inmates according to institutional response is also indicated by the comparable proportions of inmates in each social role that report either having one or more visitors per month or engaging in homosexual acts with other inmates (see table 3).

CONCLUSIONS

Our purpose in this research has been to direct attention to methodological issues that are critical concerns for researchers interested in studying correctional processes. For example, most criminologists agree that one of the most salient problems in the field is that of the inadequacy of the measures of central concepts. Despite this concensus, an open discussion of attempts to render important concepts measurable appears only infrequently in the professional literature. This has certainly been true of research on correctional institutions. For that reason, we have prepared this paper as a report on the development of a measure of social role adaptations, and we have attempted to provide a basic evaluation of the empirical adequacy and utility of the relevant subscales. The statistical data presented show that the scales do not discriminate between various categories of inmates that have been discussed in previous research. Further, the data show that these measures are unable to predict other variables that are of considerable importance. We have demonstrated the need for a more sophisticated set of measures. Although the development of such measures is beyond the scope of this paper, we have identified some basic issues that must be addressed in future measurement efforts.

APPENDIX A

INTERITEM CORRELATION MATRICES FOR INMATE SOCIAL ROLE TYPES

	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7
Square John							
Item 1	1.000	−.018	.104	.003			
Item 2		1.000	.111	.172			
Item 3			1.000	.151			
Item 4				1.000			
Ding							
Item 1	1.000	.268	.149				
Item 2		1.000	.052				
Item 3			1.000				
Politician							
Item 1	1.000	.001	.026	.011	.097	.166	−.015
Item 2		1.000	.093	.072	.180	.303	.123
Item 3			1.000	.195	.164	.044	−.070
Item 4				1.000	.150	.065	.034
Item 5					1.000	.190	.111
Item 6						1.000	.141
Item 7							1.000
Right Guy							
Item 1	1.000	−.031	.250	.168	.039		
Item 2		1.000	.097	−.031	.089		
Item 3			1.000	.081	.170		
Item 4				1.000	.177		
Item 5					1.000		
Outlaw							
Item 1	1.000	.195	.189	.111			
Item 2		1.000	.250	.198			
Item 3			1.000	.253			
Item 4				1.000			

For item content see Appendix B

Note: $r \geq .12$ significant at .05 level.

APPENDIX B

The following items provided the operational measures of the five social role types:

SQUARE JOHN

1. No matter what happens or how much trouble I'm in, I always know that there are people on the outside that will help me when I get out.
2. Most people try to be law abiding and straight.
3. I usually feel guilty when I do wrong.
4. The only criminals I know are the ones I've met in prison.

DING

1. I worry a lot about little things.
2. I have had some serious problems since I've been in prison.
3. Most of the inmates are not very friendly toward me.

OUTLAW

1. You have to take care of yourself because nobody else is going to take care of you.
2. I don't like anybody to boss me around.
3. "Might is right" and "Every man for himself" are the main rules of living regardless of what people say.
4. Around here it's best to do something to others before they get a chance to do it to you.

RIGHT GUY

1. The best way to do time is to keep your mouth shut and never let the staff know that anything is getting you down.
*2. There are times when it is all right to inform on another inmate.
3. You have to do what you can to help other inmates even when it might get you in trouble with the officers.
4. The real big boys in crime can fix anything and rarely get into prison.
5. Inmates can trust me to be a right guy and loyal in my dealings with them.

APPENDIX B—*Continued*

POLITICIAN

1. Who you know is more important than what you know.
2. There are basically just two kinds of people in the world: those in the know and those who are suckers.
3. One of the main reasons why I get along in here is because I've got a lot of confidence in myself.
4. Brains are more important than muscle.
5. Most people have done something they could have been locked up for if they'd been caught.
6. Having pull is more important than ability in getting a good job.
7. If you know the right people, you can get just about anything you want around here.

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* For item 2, Right Guy scale, directional coding of item was reversed when obtaining scale scores.