

A SOCIOMETRIC ANALYSIS
OF A CORRECTIONAL
COMMUNITY

C. Wellford, 1969

Published on demand by
UNIVERSITY MICROFILMS
Xerox University Microfilms, Ann Arbor, Michigan, U.S.A.
University Microfilms Limited, High Wycombe, England

18902

This is an authorized facsimile
and was produced by microfilm-xerography
in 1975 by
Xerox University Microfilms,
Ann Arbor, Michigan,
U.S.A.

70-7865

WELLFORD, Charles Franklin, 1939-
A SOCIOMETRIC ANALYSIS OF A
CORRECTIONAL COMMUNITY.

University of Pennsylvania, Ph.D., 1969
Sociology, criminology

University Microfilms, Inc., Ann Arbor, Michigan

A SOCIOMETRIC ANALYSIS OF A CORRECTIONAL COMMUNITY

Charles Franklin Wellford

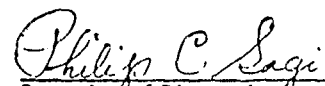
A DISSERTATION


in

SOCIOLOGY

Presented to the Faculty of the Graduate School of Arts and Sciences of the University of Pennsylvania in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy.

1969


Supervisor of Dissertation


Graduate Group Chairman

INDEX

Allport, F., 140
 Ash, E., 4
 Atchley, R., 108
 Attitudes, behavior and, 138-141

Barr, W., 52
 Bias Parameters, definitions of, 32-36; Total net, 91-92; Subnets, 92-94
 Biased nets, 32; parameters of, 32-36

Cedar Knoll School, 49-56; population of, 55-56
 Clemmer, D., 4, 5, 10, 14-15
 Cline, H., 18, 23, 46, 58, 90
 Clique analysis, 36-44; techniques, 36-37; octopus configurations, 40-41; liason circuits, 41
 Clique members, defined, 101
 Clique position and, interpersonal maturity, 129-130; institutional history, 128-129; offense history, 124-128; other prisonization, 122-124; self prisonization, 122-124
 Cloward, R., 3, 8, 9
 Code sheet, 158-167
 Coleman, J., 25, 38, 39-40
 Connectivity, definition on, 24-45; Prisonization, 89-91; subnets, 72-88; total net, 65-69
 Conrad, J., 48
 Culture, 145-146

Data preparation, 149-157
 De Fleur, M., 139

Deming, W.F., 101
 Deutscher, I., 139
 Durkheim, E., 1

Empey, L., 143

Fararo, T., 27, 30-32, 33, 35-36, 68
 Feldman, R., 141
 Flamont, C., 26
 Followers and isolates, 131-137
 Forsyth, E., 38, 39
 Foster, C., 58
 French, J., 145

Glaser, D., 9, 12-13, 15-17, 46, 49
 Goffman, E., 7-8
 Grant, J., 60
 Grant, M.Q., 60
 Group integration, 141-143

Harary, F., 37
 Hayner, N., 4
 Horvath, W., 26

Inbreeding, 69-72; inter-subnet reciprocations, 70
 Inmate code, 6-8
 Inmate culture, 4; and structure, 22-23
 Institutions, basis of homogeneity, 49; consensus in, 47-49
 Interaction, 14, 18, 19, 22,
 Interpersonal maturity, definition

of, 60-63; measurement of,
63-64
Isolates, defined, 101

Katz, L., 38, 39

LaPiere, R., 139
Lubeck, S., 143
Luce, R., 37

MacRae, D., 38, 39-40
Matza, D., 143
McCabe, M., 108
Messinger, S., 6, 146
Moreno, J., 24

Ohlin, L., 6
Orwant, C., 58

Parrow, C., 18
Perry, A., 37
Piedmont, E., 2
Polsky, H., 21-22
Power, 145-147
Prison community, 147-148
Prisonization, institutional career,
10; interaction, 19; linear
model, 11; measurement, 59;
self and other dimensions, 90;
time served, 10; u-shaped
curve, 11

Random net, 26; evaluation of, 27-
30; theorems, 31-32; weak
connectivity of, 27
Rapaport, A., 25, 26, 27, 32, 58
Raven, B., 145
Reciprocated Choice Structures, 94

Reimer, H., 4
Rokeach, M., 140
Rose, G., 21
Ross, I., 37

Schrag, C., 14, 20-21
Sellin, T., 105
Short, J., 142
Social Structure, 23, 145-146;
sociometric basis, 24, 59
Sociometric data, analysis of, 25-
45; bias parameters of, 32-
36; Random choice models,
25-32
Solomanoff, R., 26, 27
Spillerman, S., 38, 41-42, 44
Stratton, J., 143
Street, D., 18, 46, 48
Strodtbeck, F., 142
Structural position and, age, 112;
age of onset, 108; average
number of disciplinary actions,
116; average visits per month,
114; current offense type, 104;
family status, 113; first offense
type, 104; interpersonal ma-
turity level, 117; job place-
ment, 115; number of previous
confinements, 111; number of
previous offenses, 107; other
prisonization, 102, 119; pre-
vious Cedar Knoll Confinement,
110; self prisonization, 120,
119; time in Washington, 112;
time to be served, 109
Sullivan, C., 60
Sunshine, M., 27, 30-32, 33,
35-36, 68
Sykes, G., 6, 146

Tauky, C., 2
Total institutions, 8

Unit of Analysis, 1; normative, 2,
22

Vinter, R., 18

Warner, L., 139
Warren, D., 145-146
Weber, Max, 1
Wheeler, S., 9-11
Wolfgang, M., 105

TABLE OF CONTENTS

	Page
INDEX	ii
LIST OF TABLES	vii
LIST OF FIGURES	x
BIBLIOGRAPHY	xi
 Chapter	
I. INTRODUCTION	1
Unit of Analysis	1
Inmate Community	3
Inmate Culture	4
Interaction Studies	14
Sociometric Studies	20
Culture and Structure: The Inmate Society	22
II. THE ANALYSIS OF STRUCTURAL DATA	24
Introduction	24
Random Choice Models	25
Bias Parameters	32
Clique Analysis	36
III. DATA COLLECTION	46
Introduction	46
Characteristics of High Consensus Institutions	47
The Institution	49
Procedures and Instruments for Data Collection	56
IV. CONNECTIVITY AND BIAS ESTIMATES IN THE TOTAL NET AND THE SUBNETS	65
Introduction	65
Total Institution	65
Subnets	72

Chapter	Page
Subnets and Prisonization	89
Conclusion	91
V. SUBNET CHOICE STRUCTURES	93
Structure of Reciprocated Choices	94
Clique Members and Isolates	101
Conclusion	120
VI. LEADERS AND FOLLOWERS IN SUBNET CLIQUES	121
Conclusion	130
VII. CONTACT AND COMMITMENT	138
Introduction	138
Cognition and Behavior	138
Culture and Social Structure	145
The Prison Community	147
APPENDIX A	149
APPENDIX B	158

LIST OF TABLES

		Page
CHAPTER II		
1	Summary of Tracing From 01,02	30
CHAPTER III		
1	Institution Goals and Consensus	48
CHAPTER IV		
1	Observed and Theoretical Cumulative Percentage of Persons Contacted--Total Net	66
2	Random and Observed Values of the Inbreeding Proportions for the Total Net and Subnets	71
3	Observed and Theoretical Cumulative Percentage of Persons Contacted--B-1	73
4	Observed and Theoretical Cumulative Percentage of Persons Contacted--B-2	75
5	Observed and Theoretical Cumulative Percentage of Persons Contacted--B-3	77
6	Observed and Theoretical Cumulative Percentage of Persons Contacted--B-4	79
7	Observed and Theoretical Cumulative Percentage of Persons Contacted--B-5	81
8	Observed and Theoretical Cumulative Percentage of Persons Contacted--B-6	83
9	Observed and Theoretical Cumulative Percentage of Persons Contacted--B-7	85
10	Number and Percentage of Subjects Scored as Highly Prisonized by Prisonization Dimension and Cottage	90
CHAPTER V		
1	Structural Position and Self Prisonization Level	102
2	Structural Position and Other Prisonization Level	102
3	Structural Position by First Offense Type	104
4	Structural Position and Current Offense Type	106
5	Structural Position and Number of Previous Offenses	107
6	Structural Position and Age of Onset	108
7	Structural Position and Estimated Time to Be Served	109

		Page
8	Structural Position and Previous Cedar Knoll Confinement	110
9	Structural Position and Number of Previous Confinements	111
10	Structural Position and Time Resided in Washington	112
11	Structural Position and Family Status	113
12	Structural Position and Average Number of Visits Per Month	114
13	Structural Position and Institutional Job Placement	115
14	Structural Position and Average Number of Disciplinary Actions	116
15	Structural Position and Interpersonal Maturity Level	117
16	Structural Position, Time Served and Self Prisonization ..	119
17	Structural Position, Time Served and Other Prisonization.	119

CHAPTER VI

1	Clique Position and Self Prisonization Level	123
2	Clique Position and Other Prisonization Level	123
3	Clique Position by Current Offense Type	125
4	Clique Position by First Offense Type	126
5	Clique Position by Number of Previous Offenses	127
6	Clique Position by Previous Cedar Knoll Confinement ...	128
7	Clique Position by Interpersonal Maturity Level	129
8	Structure Position by Self Prisonization Level: Followers and Isolates	132
9	Structural Position by Other Prisonization Level: Followers and Isolates	132
10	Structural Position by First Offense Type: Followers and Isolates	133
11	Structural Position by Current Offense Type: Followers and Isolates	134
12	Structural Position by Number of Offenses: Followers and Isolates	135
13	Structural Position by Previous Cedar Knoll Confinement: Followers and Isolates	136
14	Structural Position by Interpersonal Maturity Level: Followers and Isolates	136

		Page
CHAPTER VII		
1	Product-Moment Correlations for Interrelationships Among Three Types of Group Integration	142
2	Intercorrelations of Reference Group Indices and Attitudes Toward Law Violation	144

LIST OF FIGURES

		Page
CHAPTER II		
1	Tracing of Choice System	29
2	Depiction of Biased Net Theory Formula	34
3	Hypothetical Choice Structure	43
CHAPTER IV		
1	Observed and Theoretical Cumulative Percentage of Persons Contacted--Total Net	67
2	Observed and Theoretical Cumulative Percentage of Persons Contacted--B-1	74
3	Observed and Theoretical Cumulative Percentage of Persons Contacted--B-2	76
4	Observed and Theoretical Cumulative Percentage of Persons Contacted--B-3	78
5	Observed and Theoretical Cumulative Percentage of Persons Contacted--B-4	80
6	Observed and Theoretical Cumulative Percentage of Persons Contacted--B-5	82
7	Observed and Theoretical Cumulative Percentage of Persons Contacted--B-6	84
8	Observed and Theoretical Cumulative Percentage of Persons Contacted--B-7	86
CHAPTER V		
1	Subnet Reciprocated Choice Structure: B-2	95
2	Subnet Reciprocated Choice Structure: B-3	96
3	Subnet Reciprocated Choice Structure: B-4	97
4	Subnet Reciprocated Choice Structure: B-5	98
5	Subnet Reciprocated Choice Structure: B-6	99
6	Subnet Reciprocated Choice Structure: B-7	100
CHAPTER VII		
1		146

BIBLIOGRAPHY

- Allport, F. "A Structuronomic Conception of Behavior," Journal of Abnormal and Social Psychology, 64 (1962), 1-3J.
- Atchley, R. and McCabe, M. "Socialization in Correctional Communities: A Replication," American Sociological Review, 33 (1968), 774-785.
- Barnes, H.E. and Teeters, N. New Horizons in Criminology. 3rd ed. New York: Prentice-Hall, 1959.
- Beverley, R. The BGOS. California Department of the Youth Authority, 1965.
- Block Report for the District of Columbia. Washington: U.S. Government Printing Office, 1964.
- Clemmer, D. The Prison Community. New York: Holt, Rinehard and Winston, 1958.
- Cline, H. The Determinants of Normative Patterns in Correctional Institutions. Unpublished Ph.D. dissertation. Harvard University, 1966.
- Cloward, R. "Inmate Social System," in Theoretical Studies in the Social Organization of Prisons. New York: Social Science Research Council, 1960.
- Coleman, J. The Adolescent Society. Glencoe: Free Press, 1964.
- _____. Introduction to Mathematical Sociology. Glencoe: Free Press, 1964.
- Coleman, J. and MacRae, D. "Electronic Processing of Sociometric Data for Groups Up to 1,000 in Size," American Sociological Review, 25 (1960), 722-727.
- Conrad, J. Crime and Correction. Berkeley: University of California Press, 1966.
- Deming, W.E. "On the Distinction Between Enumerative and Analytic Surveys," Journal of the American Statistical Association, 48 (1953), 244-253.
- Deutscher, I. "Words and Deeds," Social Problems, 13 (1966), 289-253.
- Durkheim, E. Rules of the Sociological Method. Glencoe: Free Press, 1928.

- Empey, L. and Lubeck, S. "Conformity and Deviance in the Situation of Company," American Sociological Review, 33 (1968), 758-770.
- Fararo, T. and Sunshine, M. A Study of a Biased Friendship Net. Syracuse: Youth Development Center, 1964.
- Feldman, R. "Interrelationships Among Three Bases of Groups Integration," Sociometry, 31 (1968), 30-47.
- Flament, C. Applications of Graph Theory to Group Structure. Englewood-Cliffs: Prentice-Hall, 1963.
- Forsyth, E. and Katz, L. "A Matrix Approach to the Analysis of Sociometric Data," Sociometry, 9 (1946), 340-346.
- Foster, C.C., Rapaport, A., and Orwant, C. "A Study of a Large Sociogram, II," Behavioral Science, 8 (1963), 56-65.
- French, J. and Raven, B. "The Bases of Social Power," in D. Cartwright and A. Zander (eds.), Group Dynamics. Evanston: Row, Peterson, 1960.
- Garabedian, P. Western Penitentiary: A Study of Social Organization. Unpublished Ph.D. dissertation. University of Washington, 1959.
- Glaser, D. The Effectiveness of a Prison and Parole System. New York: Bobbs-Merrill, 1964.
- Goffman, E. "The Inmate World," in D. Cressey (ed.), The Prison. New York: Holt, Rinehart and Winston, 1961.
- Grant, J. and Grant, M. "A Group Dynamics Approach to the Treatment of Non-Conformists in the Navy," The Annals, 322 (1959), 126-135.
- Grant, M. Interpersonal Maturity Level Classification. California Youth Authority, Division of Research, 1961.
- Harary, F. and Ross, I. "A Procedure for Clique Detection Using the Group Matrix," Sociometry, 20 (1957), 205-215.
- Hayner, N. and Ash, E. "The Prison Community as a Social Group," American Sociological Review, 4 (1939), 362-369.
- Korn, R. and McCorkle, L. "Resocialization Within Walls," The Annals, 293 (1954), 86-91.

- Kroeber, A.L. and Parsons, T. "The Concepts of Culture and of Social Systems," American Sociological Review, 23 (1958), 582-583.
- Landau, H. "On Some Problems of Random Nets," Bulletin of Mathematical Biophysics, 15 (1952), 203-212.
- LaPiere, R. "Attitudes and Action," Social Forces, 13 (1947), 230-237.
- Lindzey, G. and Borgatta, E. "Sociometric Measurement", in Handbook of Social Psychology. Cambridge: Addison-Wesley, 1954.
- Luce, R.D. and Perry, A. "A Method of Matrix Analysis of Group Structure," Psychometrika, 14 (1949), 94-116.
- _____. "Connectivity and Generalized Cliques in Sociometric Group Structure," Psychometrika, 15 (1950), 169-190.
- Matza, D. Delinquency and Drift. New York: John Wiley, 1964.
- Moreno, J. Who Shall Survive. New York: Beacon House, 1934.
- Ohlin, L. Sociology and the Field of Corrections. New York: Russell Sage Foundation, 1956.
- Polsky, H. Cottage Six. New York: Russell Sage Foundation, 1962.
- Rapaport, A. "Nets With Distance Bias," Bulletin of Mathematical Biophysics, 13 (1951), 85-91.
- _____. "Nets With Reciprocity Bias," Bulletin of Mathematical Biophysics, 20 (1958), 191-201.
- Rapaport, A. and Horvath, W. "A Study of a Large Sociogram," Behavioral Science, 6 (1961), 279-291.
- Reimer, H. "Socialization in Prison Communities," Proceedings of the American Prison Association, 67 (1937), 151-156.
- Report of the President's Commission on Crime in the District of Columbia. Washington: U.S. Government Printing Office, 1966.
- Rokeach, M. Beliefs, Attitudes and Values. San Francisco: Jossey-Bass, 1968.
- Rose, G. "Sociometric Analysis and Observation in a Borstal Institution," British Journal of Delinquency, 6 (1956), 285-296.

- Schrag, C. "Leadership Among Prison Inmates," American Sociological Review, 19 (1954), 37-42.
- Sellin, T. and Wolfgang, M. The Extent of Delinquency in an Age Cohort (forthcoming).
- Selvin, H. and Hagstrom, W. "The Empirical Classification of Formal Groups," American Sociological Review, 28 (1963), 399-411.
- Short, J. and Strodtbeck, F. Group Processes and Gang Interaction. Chicago: University of Chicago Press, 1965).
- Solomonoff, R. and Rapoport, A. "Connectivity of Random Nets," Bulletin of Mathematical Biophysics, 13 (1951), 153-157.
- _____. "An Exact Method for the Computation of Connectivity of Random Nets," Bulletin of Mathematical Biophysics, 14 (1952), 107-118.
- Spillerman, S. Structural Analysis and The Generation of Sociograms," Behavioral Science, 11 (1967), 312-318.
- Stouffer, S. "An Analysis of Conflicting Social Situations," American Sociological Review, 14 (1949), 707-717.
- Stratton, J. "Differential Identification and Attitudes Toward the Law," Social Forces, 46 (1967), 256-263.
- Street, D., Vinter, R., and Perrow, C. Organization for Treatment. New York: Free Press, 1966.
- Sullivan, C., Grant, M., and Grant, J. "The Development of Interpersonal Maturity," Psychiatry, 20 (1957), 373-385.
- Sykes, G. and Messinger, S. "The Inmate Code," in Theoretical Studies in the Social Organization of Prisons. New York: Social Science Research Council, 1960.
- Tausky, C. and Piedmont, E. "The Sampling of Behavior," American Sociologist, 3 (1968), 49-51.
- Warner, L.G. and De Fleur, M. "Attitude as an Interactional Concept," American Sociological Review, 34 (1969), 153-169.

Warren, D. "Power, Visibility and Conformity in Formal Organizations," American Sociological Review, 33 (1968), 951-967.

Wellford, C. "Factors Associated with the Process of Prisonization," Journal of Criminal Law, Criminology and Police Science, 58 (1967), 197-203.

Wheeler, S. "Socialization in Correctional Communities," American Sociological Review, 26 (1961), 697-712.

CHAPTER I

INTRODUCTION

Since the emergence of Sociology as a scientific discipline, a series of antinomies have been continually debated. The analysis of dichotomies such as theory-research, grand theory-middle range theory, and subjective-objective has produced considerable tensions within the discipline, tensions that are frequently encountered in the determination of the unit of sociological analysis. In this introductory chapter we will, in the course of examining the issue of the unit of sociological analysis, establish the major theoretical and empirical issues towards which this dissertation is addressed.

The Unit of Analysis

One of the earliest and yet most continually useful attempts to describe the unit of analysis in Sociology is to be found in Emile Durkheim's Rules of the Sociological Method.¹ Durkheim's discussion of social facts as "ways of acting" that are external, constraining, general and independent directed Sociology to units such as norms, values, etc. Thus, understanding the "culture," "reference group," etc., of the subject would allow one to account for his behavior. In the same way, the approach of Max Weber though methodologically different, posed the same unit of analysis, the "understanding" of the actor. In either case the unit

¹Emile Durkheim, Rules of the Sociological Method, trans. by S. Solway and J. Mueller (Glencoe, Ill.: Free Press, 1928).

of analysis is similarly construed, namely, the interjected or introjected components of one's social environment.

As Tausky and Piedmont² have recently noted in a review of the empirical studies appearing in the recent volumes of the *American Sociological Review* and the *American Journal of Sociology*, the object of study is most usually "attitudes" (62.5% of the articles). Sociological reductionism, or "over-socialized conceptions of man" do tend to dominate empirical sociological studies.

The most predictable defense of this form of emphasis is that behavior is the "dependent variable" and the object of study must be the determinant of the form of behavior being addressed. However, the failure to (1) specify precisely the quality and quantity of the behavior being addressed; and (more importantly) (2) the frequent failure to relate in a precise way the normative units to the behavior, has too often produced a self-fulfilling model in which the assumptions concerning the relationship between the normative and behavioral units are not examined. Frequently, the "observation" of normative variations is the goal of sociological research and not the examination of the relationship between normative variations and behavioral variations.

In the following section we will demonstrate the relevance and consequences for sociological studies of communities in correctional institutions of this over-emphasis on normative units of analysis.

²Curt Tausky and E.B. Piedmont, "The Sampling of Behavior," *American Sociologist*, 3 (1968), 49-51.

The Inmate Community

In tracing any concept or idea it is always difficult to decide where to begin. This problem becomes particularly acute when considering a topic as general as the organization of inmate communities. In a significant way the founders of the Pennsylvania and Auburn prison systems³ recognized this organization. As Cloward has observed, the underlying notion of these prison systems was that men were capable of positive change if conditions favorable to rehabilitation could be created, the most important of which was a "means of preventing contamination of prisoners through social interaction."⁴ It has, however, only been within the past two and one-half decades that the systematic study of this interaction and its effects has been undertaken.

Following the dichotomy of units of analysis observed in the initial section of this chapter we can organize the research on inmate communities into two sections.⁵ First, those studies that have utilized the normative element as the unit of analysis. This mode includes the vast majority of studies in this area and will be

³For a summative statement on the origins and development of these systems see Harry E. Barnes and Negley Teeters, New Horizons in Criminology (3rd ed.; New York: Prentice-Hall, 1959), pp. 337-342.

⁴Richard A. Cloward, "Inmate Social System" in Theoretical Studies in the Social Organization of Prisons (New York: Social Science Research Council, 1960), p. 25.

⁵The following sections are not intended to be reviews of all the literature on inmate communities, but rather an analysis of the major findings and theoretical formulations. Much of the literature is so repetitive of the major works that it does not contribute additional useful insights into the phenomena we are addressing.

referred to below as the studies of the inmate culture or inmate code. Second, those few studies that have attempted to analyze actual patterns of interaction, which will be referred to as interactional studies. In only two significant instances, to be discussed later, have these modes been adequately incorporated in a single study.

The Inmate Culture

The earliest published study in this mode was conducted by Hans Reimer.⁶ Reimer used the participant-observation method to study the social life of inmates, spending three months in a state penitentiary. He found that there existed among the inmates a code containing "traditions, a social hierarchy, mores, attitudes and a mythology."⁷ In particular he noted that there was a rigid status system that was recognized throughout the institution and that the fundamental element in the inmate's culture was a rejection "of the prevailing order of society personified by the institutional personnel."⁸ This research was substantiated two years later in a similar study by Hayner and Ash.⁹

It was, however, the work of Donald Clemmer entitled The Prison

⁶ Hans Reimer, "Socialization in the Prison Community," Proceedings of the American Prison Association, 67 (1937), 151-156.

⁷ Ibid., p. 151.

⁸ Ibid., p. 153.

⁹ Norman Hayner and E. Ash, "The Prison Community as a Social Group," American Sociological Review, 4 (1939), 362-369.

Community¹⁰ that formed the basis for almost all subsequent theory and research on inmate communities. Clemmer spent nine years as a member of the classification committee of a maximum security institution in Illinois.¹¹ During this time he administered a variety of questionnaires, conducted numerous interviews and analyzed the files of many inmates.¹² Though not exclusively, Clemmer's study was an analysis of what he termed the inmate culture. This analysis led him to conclude:

[The prisoner's community] is a unique community since it is held together by walls and guns, laws and rules, yet in it, regardless of the reasons for its existence there are social relations, communications which make the relations possible, and other social processes.¹³

Clemmer contended that governing these relationships was a value system that could be, like any culture, analyzed in terms of the analytical concepts of general sociology and so termed it the inmate culture which he defined as:

The habits, behavior systems, traditions, history, customs, folkways, codes, and laws and rules which guide the inmates and their ideas, opinions and attitudes toward or against homes, family, education, work, recreation,

¹⁰Donald Clemmer, The Prison Community (Christopher Publishing Co., 1940). Reissued by Holt, Rinehart and Winston, 1958. Further references will be to the 1958 printing.

¹¹Although Clemmer's work was published later than those of Reimer and Hayner and Ash the data were gathered during the early thirties and the manuscript was prepared by 1936.

¹²Clemmer's methodology is not adequately explicated. It is clear however, that he did not follow random sampling procedures, failed to give consideration to questions of reliability or validity and did not apply statistical tests to the data. Given the state of our discipline at the time Clemmer was trained one must, however, only admire his insight, ingenuity and persistence.

¹³Clemmer, op. cit., p. 93.

government, prisons, . . . etc.¹⁴

He divided this conglomeration of culture traits into the universal aspects of the inmate culture, or those to which all inmates were exposed such as the dress, setting and language, and the criminalistic aspects which consisted of the "influences which breed or deepen criminality and antisociality."¹⁵ Unfortunately, Clemmer did not adequately describe these components in a more detailed and systematic manner. However, this formulation has provided the basis for many writings that have attempted to particularize these components.¹⁶

Sykes and Messinger offer a statement that enumeratively summarizes the major components of the inmate code. They are

1. Don't interfere with inmate interests. Never rat [carry information to officials] on a con [convict].
2. There are implicit injunctions to refrain from quarrels or arguments with fellow prisoners . . . [unless there is] legitimate provocation.
3. Inmates should not take advantage of one another.
4. There are rules that have as their central theme the maintenance of self. Dignity and the ability to withstand frustration or threatening situations without complaining or resorting to subservience are widely acclaimed.
5. Prisoners express a variety of maxims that forbid according prestige to the custodians or the world for which they stand.¹⁷

A similar analysis is given by Lloyd Ohlin. He describes the inmate

¹⁴ Ibid., p. 294.

¹⁵ Ibid., p. 300.

¹⁶ For an extensive bibliography see Gresham Sykes and Sheldon Messinger, "The Inmate Code," in Theoretical Studies in the Social Organization of Prisons (New York: Social Science Research Council, 1960), pp. 5-7.

¹⁷ Ibid., pp. 6-8.

culture (which he calls the prison code) in the following terms:

The main tenet of this code forbids any type of supportive or nonexploitive liaison with prison officials. It seeks to confer status and prestige on those inmates who stand most clearly in opposition to the administration. The code incorporates most of the values and orientations which inmates have shared in their criminal activities in the free community. These criminal beliefs and attitudes place a high premium on physical violence and strength, on exploitative sex relations, and predatory attitudes toward money and property. They place a strong emphasis on in-group loyalty.¹⁸

As in the above enumeration the emphasis in Ohlin's analysis is on the anti-administration orientation and the loyalty between inmates. The inmate culture is described in the Clemmer tradition as being universal, in the sense that all inmates are exposed to it and learn it as a part of their institutional acculturation, and solidifying, in the sense that it creates a true community of "believers"--those who live by the culture and therefore have high positive feeling for other members of the community.

These notions are made quite explicit in the most advanced theoretical analysis of the normative component of inmate culture, that developed by Erving Goffman in his analysis of "total institutions."¹⁹ By total institutions Goffman means institutions that to a significantly greater degree than do other institutions encompass the time and interests of its members. These differ from other institutions on a number of dimensions primary of which is the "breakdown of the barriers" ordinarily

¹⁸ Lloyd Ohlin, Sociology and the Field of Corrections (New York: Russell Sage Foundation, 1956), p. 28.

¹⁹ Erving Goffman, "The Inmate World," in The Prison, ed. by D. Cressey (New York: Holt, Rinehart and Winston, 1961), pp. 15-68.

separating the major spheres of life (work, sleep and play). In addition, there is a split between staff and inmates, an incompatibility with the basic work-payment structure of society and the complete loss of autonomy by inmates. Goffman suggests that as a result of these factors an inmate culture develops that expresses two major themes. First, there is engendered a peculiar kind and level of self concern that takes the form of high degrees of inter-inmate support. Second, there is an emphasis on attempts to engage in activities that allow the inmate to psychologically remove himself from the institution.

These pressures though general to total institutions can be interpreted as being even more intense in prisons because they do differ in significant ways from other total institutions. One of the primary differences has been presented by Cloward.²⁰ He points out that other total institutions, to maintain stability, convert force into authority. In other words, they convince their members that what they (the inmates) have to do is really what they want to do (e.g., the confinement of mental patients is accepted as treatment). However, this conversion does not take place in a penal setting because the legal process defines the prison experience as punishment which does not seem logically capable of being defined as desirable. Furthermore, the prison to a greater degree than other total institutions defines the inmate as an undesirable, unworthy individual who is near the bottom of our status hierarchy (a process Goffman terms "self mortification"²¹). The implications of

²⁰ Cloward, op. cit., pp. 20-22.

²¹ Goffman, op. cit., p. 23.

these specific aspects of prison life for the character of the inmate culture are probably varied, however, following the formulation by Goffman one would predict even greater degrees of inmate solidarity and anti-administration orientations. As Cloward states, "the acute sense of status degradation that prisoners experience generates powerful pressures to evolve means of restoring status."²² In order to achieve status and thus escape, "the effect of internalizing and converting social rejection into self rejection . . . [the inmate] rejects his rejectors."²³ Thus, the inmate group becomes an object of loyalty because it can give support to this rejection of conventional society.

Only recently have there been attempts to empirically test aspects of the inmate culture model. Of particular note in this regard are the works by Wheeler,²⁴ and Glaser.²⁵ It is important before reviewing these efforts to recognize that they have placed primary but not exclusive emphasis on the cultural unit of analysis. As in the above discussion our interest is in their results and the implications of their results for our consideration of the structure of inmate communities.

Stanton Wheeler's study has rapidly become one of the most cited

²²Cloward, op. cit., p. 21.

²³Richard Korn and L. McCorkle, "Resocialization Within Walls," The Annals, 293 (1954), 88.

²⁴Stanton Wheeler, "Socialization in Correctional Communities," American Sociological Review, 26 (1961), 697-712.

²⁵Daniel Glaser, The Effectiveness of a Prison and Parole System (New York: Bobbs-Merrill Co., 1964).

empirical studies of a correctional community. Wheeler, operating with a model of the inmate culture based on the Clemmerian tradition, addressed the problem of the acquisition of the inmate culture, or what Clemmer called the process of prisonization. Wheeler utilized a group administered questionnaire in an effort to measure an inmate's degree of prisonization. The measure of prisonization consisted of five hypothetical situations involving behavioral situations frequently encountered by inmates.²⁶ The inmates could respond in a way to indicate acceptance of inmate norms (as discussed earlier in this chapter) or administration norms. The responses were grouped into three categories indicating high, medium or low degrees of prisonization. Wheeler then analyzed the relationship between the degree of prisonization and (1) two time variables; and (2) indicators of the degree of inmate interaction.

With regard to time and prisonization, Wheeler notes that prisonization does increase linearly as Clemmer had suggested. Thus, there is a reduction in the proportion of men who express conformity to administrative prescriptions as one moves

²⁶The instrument to measure prisonization was patterned after that developed by Stouffer and Toby. The tool contains a series of hypothetical situations involving conflicts between norms. The assumption is that the resolution of the conflict situation will indicate to which party of the conflict situation the individual is most committed. Wheeler using this format established hypothetical situations concerning behavior by inmates in prison involving conflict between inmate and staff behavior prescriptions. Wheeler found this technique to be highly reliable, valid and efficient. See, Samuel Stouffer, "An Analysis of Conflicting Social Norms," *American Sociological Review*, 14 (1949), 707-717. Subsequent use and refinement of this technique by Cline (see fn. 34) and Wellford (see fn. 29) have demonstrated the usefulness of this approach. At present this appears to be the best developed technique for the assessment of the degree of normative commitment.

from zero time served to maximum time served in the institution. However, Wheeler also noted that if an inmate's time served was not measured absolutely, but rather relative to the total amount of time he expected to serve, a different relationship emerged. By dividing an "institutional career" into an early phase (six months or less served), a late phase (six months or less to serve), and a middle phase, Wheeler was able to observe not a linear relationship, but a U-shaped curve with high prisonization most closely associated with the middle phase.

Wheeler also ascertained: (1) the inmate's perception of how many friends he had made in the institution; and (2) if he spent his time alone, with one or two inmates, or in a group. Wheeler found that:

The results indicate . . . support to the proposition that both the speed and degree of prisonization are a function of informal inmate involvement. During the first time period there is no significant relation between involvement and conformity to staff opinion. However, the percentage of high conformity [to staff opinion] drops rapidly for inmates who are highly involved. For those who have little contact with other inmates . . . the process of prisonization appears to operate . . . [but not] to the same degree.²⁷

Wheeler in explicating these findings then addresses an issue of central importance to this dissertation. He states:

These results of course raise the question of the interplay between social involvement on the one hand, attitudes and values on the other. Rather than thinking of one of these variables as an effect of the other, a more appropriate model of their interactions in the prison community might stress the structural incompatibility of being both highly involved with inmates and an attitudinal conformist to staff expectations. The dominant normative order among inmates [at least in terms of power and visibility if not numbers] is strongly opposed to that of the staff. The inmate who values friendship among his peers and also

²⁷Wheeler, op. cit., p. 703

desires to conform to the staff's norms faces a vivid and real role conflict. . . . Inmates move to resolve the strain either by giving up or being excluded from primary ties, or by a shift in attitudes. In either case the results lead to a polarization of non-involved conformists and involved nonconformists. [Our results] suggest the dominant tendency is to move in the direction of non-conformity rather than isolation.²⁸

Wheeler's position is very clear. Attachment to the inmate culture demands inmate cohesiveness. The only disagreement with the Clemmer position is that the process of acculturation may be other than linear. In such a formulation, evidence of non-cohesiveness (such as the existence of a large number of nonconformist isolates) is systematically excluded from the theoretical analysis. Thus, Wheeler develops a "deprivational theory" of the emergence of the inmate culture that focuses on the "pains of imprisonment" (Goffman's self mortification) and the subsequent necessity for inmate normative solidarity. Wheeler has certainly identified the issue of central concern to this current study (i.e., the relationship between "social involvement and attitudes"), however, his emphasis on the normative unit of analysis and his apparent theoretical orientations precluded his dealing systematically with the relationship between behavior and values within a correctional setting.

On the basis of an analysis of the responses to a scaled version of the approach utilized by Wheeler in the measurement of commitment to the inmate culture, Daniel Glaser has suggested that "inmate loyalty" is inversely related to age, increases linearly (degree not specified) during imprisonment for those under age thirty-one, and is "directly correlated" (extent not specified) with the number of

²⁸ ibid., pp. 703-704.

prior commitments to penal institutions. Glaser's conclusions are similar to those of Wheeler's, namely, an inmate is either "loyal" or isolated, his position being dependent upon (by definition) the extent of his commitment to the inmate culture. Glaser's data with regard to the influence of age would lead one to predict that the inmate culture should be most adhered to among those in the lower age categories of those incarcerated.

In conclusion, we can observe that studies of the culture of inmate communities have emphasized the cohesiveness of that community and the power of the norms to define isolation from and membership in the "society of captives." The divergencies in the extension of this simplistic notion have centered on the pattern of acquisition of this culture. Two models of acquisition are discernible, the learning model of Clemmer and Glaser which postulates a linear increase in acquisition as one remains within the inmate society and the deprivational model of Wheeler and Goffman which postulates a U-shaped curve of acquisition.²⁹ This difference should not, however, disguise the fact that both models postulate a condition of inmate solidarity that is based on the inmates' possessing a common culture and thus identifying with each other.

²⁹ There have been suggestions that both of these models must be modified to account for variations in inmate culture acquisition due to inmate differences. However, these attempts also consider culture and structure in the manner described in this section. See Peter Garabedian, Western Penitentiary: A Study of Social Organization (unpublished Ph.D. dissertation, University of Washington, 1959); and Charles Wellford, "Factors Associated With the Process of Prisonization," Journal of Criminal Law, Criminology and Police Science, 58 (1967), 197-203.

Interaction Studies

It was Clemmer who also made the initial attempt to depict the complexity of inmate interactions within the correctional setting. As we will demonstrate in this section, we find that the types of data he collected and the thrust of his analysis has significantly influenced those who have followed. Only in the work of Clarence Schrag do we find useful and significant deviations from the Clemmer model.

As noted, Clemmer's methodology is not always explicitly stated, particularly with reference to sampling procedures--this is also true with regard to the following of his observations. Clemmer used a version of a social distance scale to identify inmates' perceptions of their membership in prison groups and also directly asked other inmates to classify themselves as a complete clique man, a group man, a semi-solitary man or a complete solitary man.³⁰ Clemmer then analyzed these

³⁰ Clemmer's definitions of these are as follows:

- "A. The Complete 'Clique Man': This is the man who is one of a group of three or more men who are all very close friends. They share each others' luxuries and secrets and have accepted, or are willing to accept, punishment one for the other. The 'clique man' is so closely associated with this group that he thinks in terms of 'we' rather than 'I' and he acts as the group acts. The clique has some permanence.
- B. The 'Group Man': This is the man who is friendly with a certain small group of men but who does not entirely subject himself to the wishes and acts of the group-as-a-whole. He would share his luxuries, tell some of his secrets, but would not go 'all the way' for those with whom he is friendly. While he is particularly friendly with one group, he also mixes freely with a number of other men and is at least casually friendly with these others.
- C. The 'Semi-Solitary Man': This is the man who, while civil

responses and their relationship to time served in the institution. Clemmer's findings are clearly stated in the following passage:

. . . the prison community is not largely made up of a great number of highly integrated groups similar to primary groups in the normal community. . . . about forty per cent of prisoners are not in any way intimately integrated in groups in which strong social relationships exist. Another forty-two per cent engage in some of the superficial practices of group life but are not generally affiliated with specific groups. About eighteen per cent of the inmates are associated with small numbers of other men in combinations which approach in structure and function the primary groups of the free society, but in many of these there is a lack of basic cohesion. . . . with increasing residence less men remain affiliated with such collectivities.³¹

Clemmer's measures of inmate social relations do not indicate a cohesive, uniform community bound together by a common culture. Clemmer arrives at the conclusion Wheeler later rediscovered, namely, that the isolate is the inmate "in but not of" the society. Thus, he also reverts to the cultural model by defining the isolates as the deviants--those "in" the culture remain, by definition, bound together attitudinally and behaviorally. Unfortunately, these "binds" are stated but not examined.

In a more recent study of inmate interaction Daniel Glaser has essentially replicated, in a more systematic and longitudinal manner, the Clemmer research

with other inmates, never really becomes intimate with them or shares with them any thoughts or acts except of the most casual nature. He is the man who is almost playing a 'lone-hand.'

- D. The 'Complete-Solitary Man': This is the man who keeps almost constantly to himself and shares nothing with other inmates. While he may talk with other men, he is generally alone and seeks no one."

Clemmer, *op. cit.*, p. 118.

³¹ *Ibid.*, pp. 129-130.

design. Glaser asked 1137 inmates in five federal prisons "Which of the following statements tells best what you try to do with the other inmates?" and offered them the following responses: (1) Try to stay to myself as much as possible; (2) Try to know many inmates, but not be very friendly with any of them; (3) Try to make a few inmate friends; and (4) Try to make as many friends as I can among the other inmates. The responses and correlates to this question led Glaser to conclude:

1. Prisoners, as a whole, are more oriented to maintain voluntary isolation from other prisoners than to achieve solidarity with other prisoners.
2. . . . at low ages the inverse of the first proposition may occur.
3. Voluntary isolation of prisoners from each other is correlated with the amount of prior correctional confinement that they have experienced.
4. Voluntary isolation of prisoners from each other is correlated directly with the degree of heterogeneity of prisoners in an institution. This heterogeneity may be measured in terms of: (a) race, (b) length of sentence, (c) social class, or (d) prior correctional confinement.
5. Voluntary isolation of prisoners from each other varies in a U-shaped curve, being high at the beginning of confinement, decreasing towards the middle, and increasing near release.
 - a. The amplitude of this curve varies inversely with age or prior confinement.
 - b. The shape of this curve will be modified somewhat by the linear relationship with age, heterogeneity, and other variables indicated in the previous propositions.³²

Glaser found these patterns to be constant among the different institutions for the populations specified.

In terms of actual data Glaser found that 37% of his subjects (as in Clemmer's study) characterized themselves as being "far from integrated," that is, they endorsed responses one or two from the above list. Twenty-four per cent endorsed response four (corresponding to Clemmer's "group man") and thirty-eight per

³² Glaser, *op. cit.*, p. 98.

cent endorsed response three (corresponding to Clemmer's "complete clique man"). Thus, Glaser's essential conclusion--proposition number one quoted in the preceding paragraph.

It is obvious that one could challenge this conclusion of Glaser's (and Clemmer's and others to follow) with their own data which indicate that only 63% of the inmates were "integrated." However, we contend (and will emphasize in greater detail later in this chapter) that neither approach is fruitful. The responses to questions of the order asked by Clemmer and Glaser (and those to be discussed below) do not indicate the structure of interactions within a social system, rather they depict, in aggregate form, each individual's understanding of the total system--his own position. The analogy with the blind men describing an elephant does not seem inappropriate. While the results of these studies may be useful in accounting for structural variation based on actor (e.g., age, prior record, etc.) or system (e.g., type of prison) inputs, they do not allow us to account for the structure to be studied. This is not to suggest the need for another "source" of data other than individual respondents, but rather to state the necessity for a different form of data and different analytical procedures. As noted above, this issue will be discussed again later in this chapter.

Since the publication of Glaser's study, there have appeared two similar (in measurement procedures) studies that have emphasized comparison between institutions. The first of these dealt exclusively with institutions for delinquents

and was conducted by David Street, Robert Vinter and Charles Perrow.³³ The second study dealt with Scandinavian adult and youth institutions and was conducted by Hugh Cline.³⁴

Street, et al., define integration as the reporting by the inmate that he has two or more close friends among the inmates in the institution. This approach assumes that the inmate social system is highly integrated as a system due to the role of the inmate culture³⁵ and that if an inmate has two or more friends he is integrated into the highly organized inmate society. Despite this approach, the data they generate is deserving of our attention because it suggests differences between institutional types that Glaser did not observe (or possibly consider).

Street, et al., suggest that interaction may be high and solidarity (inmate normative commitment) low in treatment oriented institutions, but that interaction and solidarity are positively correlated in other types of institutions for the reasons stated immediately above.³⁶ Thus the relationship between inmate culture and inmate interaction is dependent, they suggest, on the intervention orientations of the institution. Despite our reservations concerning their approach we will attend to these results in this study.

³³ David Street, R. Vinter and C. Perrow, Organization for Treatment (New York: Free Press, 1966).

³⁴ Hugh F. Cline, The Determinants of Normative Patterns in Correctional Institutions (unpublished Ph.D. dissertation, Harvard University, 1966).

³⁵ Street, et al., op. cit., pp. 230-232.

³⁶ Ibid., p. 232.

Cline's analysis, based on data concerning interaction almost identical to that of Street's, concluded that the structure of correctional institutions was not to be explained by patterns of normative commitment. Rather, degrees of interaction were found to be highly significant intervening variables. Thus, Cline states:

. . . the direct importation model [corresponding to the learning model of our previous section] is more appropriate for explaining inmate opposition to staff in institutions where there is a good deal of interaction among the inmates. In fact, the direct importation variables are essentially unrelated to anti-staff climates in institutions where there is less interpersonal interaction among the inmates.³⁷

These findings occurred despite the fact that there was a very low correlation between interaction levels (number of friends) and anti-staff climate ($r = .03$).³⁸

None of the measures of inmate interaction were found to correlate higher than .3 with extent of prisonization (i.e., normative commitment). This led Cline to conclude:

Although our results only suggest it, we can conjecture from them the following hypothesis: in social settings where there is a great deal of interaction among the participants, it is the characteristics of those participants that are determinant of the social climate. But in settings where there is little interaction, then it is the physical and material aspects of the environment in which they are located that are determinant of the social climate. When stated in this general way, our findings make good intuitive and sociological sense. It points to the notion that interaction is an important sociological variable, and it may very well cut across and change the relationships between other variables. This suggests that any study of social climate, or more broadly of any aspect of normative structures, should include interaction as part of the theoretical framework and as part of the empirical design. Of course, we would be able to push our analysis much further if we had been able to bring sociometric data to bear. We could have examined the whole

³⁷ Cline, *op. cit.*, p. 182.

³⁸ *Ibid.*, p. 171.

problem, completely ignored in this study of conflicting social climates, in a setting and compared the various subcultures. Future studies of social climate should attempt to collect such sociometric data,³⁹

Given the current state of sociological measurement, it is obvious that one would suggest sociometric data as the source of important insights into the structure of inmate societies. We now turn to those studies that have attempted to utilize data of this order.

Sociometric Studies

To date there has not been published a study of an entire correctional institution that has utilized sociometric data. The few studies that have used sociometric data have focused on segments of institutions (e.g., a cottage) and have usually been more concerned with leadership characteristics than the structure of relationships. Most notable among these works are the works by Schrag,⁴⁰ Rose⁴¹ and Polsky.⁴²

Schrag collected leadership preference data from the inmates in the Trusty Quarters of a state prison. He observed that inmates choose as leaders those who have "served more time in prison, have longer sentences remaining to be served,

³⁹ Ibid., p. 189.

⁴⁰ Clarence Schrag, Crimeville: A Sociometric Study of a Prison Community (unpublished Ph.D. dissertation, University of Washington, 1950) and "Leadership Among Prison Inmates," American Sociological Review, 19 (1954), 37-42.

⁴¹ Gordon Rose, "Sociometric Analysis and Observation in a Borstal Institution," British Journal of Delinquency, 6 (1956), 285-296.

⁴² Howard Polsky, Cottage Six (New York: Russell Sage Foundation, 1962).

[and] are more frequently charged with crimes of violence."⁴³ Schrag suggests that this type ("the right guy") is selected for leadership because he epitomizes the prison culture. Also of interest is Schrag's finding that "like chooses like," in the sense that the leaders do not differ from those who choose them, but rather leaders and followers differ from the rest of the population. Thus, these data can support two models of inmate interaction (assuming for the moment that we can safely generalize from one segment of the prison to the entire prison): (1) a highly integrated, highly prisonized structure occupying the leadership role vis a vis an unintegrated, non-prisonized segment of the inmate population; or (2) a series of highly cohesive cliques that are not structurally linked. The first model corresponds to the inmate culture position, while the second corresponds to the data of Clemmer, *et al.*, on the extent of inmate interaction. In short, Schrag's results are at best inconclusive.

The studies of Rose and Polsky are of even less merit. Though Rose's results are presented under the title of sociometric data, in actuality the designations of inmate associations were made by the staff of the institution. Thus, Rose's conclusion that there is a great deal of structure to the inmate society reflects the staff's perceptions of interaction as opposed to what is usually generated by sociometric criterion questions. While his procedure may have certain "exploratory" merit it does not seem particularly useful to an understanding of inmate social structure.

Polsky's participant-observation study of a delinquent correctional institution does not present sociometric data but is quite explicit concerning the inmate

⁴³Schrag (1954), *op. cit.*, p. 40.

structure. This study was also confined to a single cottage, though Polsky suggests the following results to be generally accurate. First, he contends that the cottage has but one social structure. This structure may contain cliques but not divisive ones. Second, each structure takes the form of a diamond with six levels corresponding to leaders, associates, con-artists, quiet types, "bushboys" and scapegoats. Third, cliques tend to be geographically determined (e.g., bed placement, seating placement, etc.) and are not challenges to or isolations from the dominant structure. While this may be possible in a group of size twenty it does not seem to be a useful model for the description of interaction between larger numbers of inmates, though it also lends support to the inmate culture models.

In sum, Schrag's sociometric study and the participant-observation approach of Polsky have not materially added to our ability to conceptualize the inmate social structure. They have been limited in scope, size and direction.

Culture and Structure: The Inmate Society

The analysis of inmate communities has been demonstrated to rely almost exclusively on the normative model that has dominated sociological theory. This has occurred despite data on interaction that could be construed to be antithetical to the normative model. The absence of adequate data on the structural organization of inmate interactions has permitted the normative model to dominate theory and practice in correctional institutions. While we are not yet in a position to challenge this model, the analysis of its ability to account for more systematic structural data is the primary aim of this study. We are convinced that the inmate society, like most human aggregates, is not to be so simply understood.

This leads us, as it did Schrag, to the consideration of the usefulness of sociometric data. As we have observed earlier, questionnaire approaches in the Clemmer tradition do not allow one to reconstruct the patterns of association. While sociometric data do allow for associational analysis it has been found to be inefficient for large groups and it has been resistant to modes of analysis that have attempted to uncover the limits of associations. However, within the last fifteen years there have been developed a set of theories and techniques for the analysis of sociometric data that overcome these limitations. For that reason we have selected sociometric data as the measure of inmate interaction. In Chapter 2 we will discuss in more detail the sociometric procedure and the modes of analysis utilized in this project.

Our intention then is to generate indices of inmate social structure and to relate this structural analysis to patterns of normative commitment. In this way we plan to provide a more adequate conceptualization of inmate social structure and thus be in a better position to approximate understandings of the relationship between culture and structure.⁴⁴

⁴⁴ In many significant respects we have been guided in our analysis of the necessity for structural data by the growing recognition in small group research that group cohesiveness is not unidimensionally related to normative affiliation. For example, Selvin states: "There are . . . two relatively distinct dimensions of social cohesion, the first based on the social satisfaction of group members and the second on their interaction. In other words social cohesion does not appear to be a unitary concept . . ." See Hanan C. Selvin and W.O. Hagstrom, "The Empirical Classification of Formal Groups," *American Sociological Review*, 28 (1963), 405. Thus, as Cline suggested, it may be necessary to treat interaction as a significant intervening or independent variable rather than as a completely dependent variable. This must be considered our most general theoretical concern.

CHAPTER II

THE ANALYSIS OF STRUCTURAL DATA

Introduction

Since the publication of Moreno's introduction to sociometry,¹ sociologists and social psychologists have recognized the importance of sociometric data. As many have observed this form of data represents the only indirect measure of the structure of interaction that has been developed by the social sciences.² Despite this recognition sociometric data have not proven particularly useful in the analysis of large social systems as a result of the fact that adequate techniques for the analysis of this form of data did not develop at the same time as did the data form. Thus, it has only been quite recently that techniques other than the sociogram or simple measures of choice clustering (e.g., number of choices received, number of choices within relative to the number outside of the group, number of choices received relative to the highest number of choices received by any subject, etc.) have emerged. In this chapter, we will describe two of the most prominent new techniques of sociometric analysis--techniques that will be utilized in Chapters 4 and 5 of our study.³

¹J.L. Moreno, Who Shall Survive (New York: Beacon House, 1934).

²G. Lindzey and E. Borgatta, "Sociometric Measurement," in Handbook of Social Psychology (Cambridge: Addison-Wesley, 1954), Vol. 1, pp. 143-47.

³It has been James S. Coleman who has translated, for the sociologist,

The recently developed techniques for the analysis of pair-wise relations (i.e., sociometric choices, communications, dominance, etc.), have been classified by Coleman into three major types. These are:

1. Those which make assumptions about the genesis of the group structure, and prove certain conclusions from these assumptions. These models may be classified into two groups:
 - a) "Random" systems, in which one of the assumptions is that choice, communication, or dominance is randomly distributed throughout the group.
 - b) Modifications of this assumption of randomness to obtain a model which might more easily fit an actual situation.
2. Those which take a structure as it may exist and ask certain questions of it: "How many 'cliques' are there in the groups. . ."
3. Those approaches which establish certain postulates as to what will happen through time to change the group structure, and then make deductions about the resulting state of the system at a given later time or at equilibrium.⁴

Our concern will be with numbers one and two of Coleman's classification. The third type requires longitudinal data which we have not collected. In the following sections, we will describe the theory and methods appropriate to types one and two of the Coleman classification.

Random Choice Models

The development of random models is associated most closely with the work of a group of mathematical biophysicists, most notably Anatol Rapoport.⁵

the relevant developments in mathematics and psychology. We have drawn heavily upon his approach to structural analysis. See J.S. Coleman, "The Mathematical Study of Small Groups," in Mathematical Thinking in the Measurement of Behavior (Glencoe: Free Press, 1960), pp. 1-149; and J.S. Coleman, Introduction to Mathematical Sociology (Glencoe: Free Press, 1964), pp. 430-468.

⁴ ibid. (1960), pp. 72-73.

⁵ The following are the basic works of Rapoport and his associates on

Their efforts were initially directed at the problem of the characteristics of neural nets, that is the links by axones between neurons (or nodes). It became obvious that the same model could be applied to any set of pair-wise relations. Thus, an individual (a node) can choose another person (another node) and therefore establish a line (an axone) between the two persons. Aggregates of choices or axones can generate a sociogram or a neural net. The analysis of the graph depicting the social structure or the graph depicting the neural net involves the same problems, that is characterizing by various statistics the graph of relations. Following Rapaport's terminology these relations can be considered within the theory of random and biased nets.

A random net is defined as any system constructed in the following manner: each subject in the system (node) selects its target at random. The system is random because the axones have been randomly generated. The opposite of a random model would be a system corresponding to the notion of a strongly connected graph. Flament defines a strongly connected graph as one in which one can move from any node in the system.⁶ Thus, if every person can be reached from every other

which we have relied: A. Rapaport, "Nets With Distance Bias," Bulletin of Mathematical Biophysics, 13 (1951), 85-91; R. Solomonoff and A. Rapaport, "Connectivity of Random Nets," Bulletin of Mathematical Biophysics, 13 (1951), 153-157; R. Solomonoff and A. Rapaport, "An Exact Method for the Computation of Connectivity of Random Nets," Bulletin of Mathematical Biophysics, 14 (1952), 107-118; A. Rapaport, "Nets with Reciprocity Bias," Bulletin of Mathematical Biophysics, 20 (1958), 191-201; A. Rapaport and W. Horvath, "A Study of a Large Sociogram," Behavioral Science, 6 (1961), 279-291.

⁶C. Flament, Applications of Graph Theory to Group Structure (Englewood Cliffs: Prentice Hall, 1963), p. 29.

person in a sociogram we would describe that graph of social relations as strongly connected. In reality, sociometric data do not usually conform to either of these models. This leads us to the notion of the measurement of weak connectivity, that is the proportion of a system that can be reached on the average by starting from every member of the system. The random models are essentially concerned with the calculation of the weak connectivity of a system, the random model applicable to that system, and statistics that allow one to assess the components of the observed structure that make it non-random (these are referred to as the bias statistics).

It should be clear however that in large systems that the analysis of every set of pair-wise relations would be extremely costly and time-consuming. Therefore, Solomonoff and Rapaport have suggested a simple tracing procedure for the estimation of the weak connectivity.⁷ Beginning with the total system one randomly selects a specified number of starters (nodes) and then proceeds to trace their choices, and the new choices of those chosen until there are no new members within the choices of the sample. This procedure is repeated a specified number of times or until the difference between the calculated average at step n and the average at $n+1$ reaches a stated level of maximum difference. A simple example from the work of Fararo and Sunshine will make this procedure more clear as well as introduce some fundamental symbols utilized in random net theory.⁸

⁷Solomonoff (1952), op. cit.

⁸T.J. Fararo and M. Sunshine, A Study of a Biased Friendship Net (Syracuse: Youth Development Center, 1964), pp. 11-16.

Suppose we have a set of choices as depicted in Figure 1.⁹ We can trace this system as follows. We randomly select two members of the system as starters. The tracing that follows will have various steps signified by $t=(0, 1, 2, \dots)$. In our example we will let 01 and 02 be the starters ($t=0$). At t_1 we record the identification 03, 04, 01 and 05. Since 01 was in the starter set we will omit his identification at t_1 because we are only interested in the number of new contacts we can reach by the tracing procedure. We now trace forward the choices of 03, 04, and 05 to step t_2 . We continue this until there are no new contacts. Table 1 summarizes the tracing example.

In this table we record the summary numbers for the tracing over Figure 1. For every step t , the number of new contacts at that step, $n(t)$, is listed as is the cumulative $n(t)$, $N(t)$. These data are usually presented in terms of proportions where $P(t) = n(t)/N$ and $X(t) = \sum_{i=0}^t P(i)$. These are the basic structure statistics for the observed choice data.

The above example describes only the tracing from a particular starter set. To obtain a generalization of the structure statistics to the larger system we would resample and procede through the recursive tracings and caluclations described above. The resulting tracing statistics $P(t)$ and $X(t)$ are then interpretable as follows:

⁹ The following statistics and others described in these pages are derivable from choice structure. The notation is in all cases as in Fararo and Sunshine.

$A..$ = total number of links.

N = total number of nodes.

$a = \frac{A..}{N}$, the contact density.

FIGURE 1

TRACING OF CHOICE SYSTEM

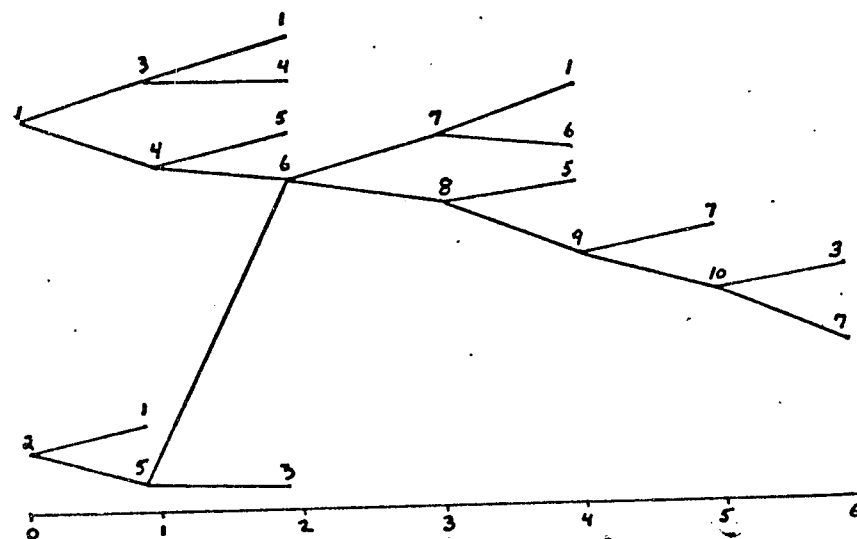


TABLE 1

SUMMARY OF TRACING FROM 01, 02

t	$n(t)$	$N(t)^1$
0	2	2
1	3	5
2	1	6
3	2	8
4	1	9
5	1	10
6	0	10

$$^1 N(t) = \sum_{i=0}^t n(i)$$

from an arbitrary set of starters we can reach a fraction $X(t)$ of distant persons by step t in tracing the system, and contact a fraction $P(t)$ for the first time at step t .

Though we do not know the sampling distribution of these statistics, an issue to which we shall return later in this section, their use as a comparative base to random models and other observed models should be at this point at least intuitively recognizable.

We are now prepared to address the notions of random and biased nets. The theory of random nets has been summarized by Fararo and Sunshine in the following series of theorems and corollaries.

CONTINUED

1 OF 4

1. If a net is random and has contact density a , then (1) $P(t+1) = [1 - X(t)] [1 - e^{-aP(t)}]$. As stated above this is a recursion formula. To calculate actual numerical results we would begin with $P(1)$, $X(0)$ and $P(0)$. The recursion continues until $P(t+1)$ is zero to some previously specified number of decimal places, at which point $X(t)$ has reached its cumulative maximum--the weak connectivity of the structure. It can thus be seen that the entire collection of structure statistics is generated from a random net once we have the starting fraction $P(0)$ and the contact density. Thus: (2) $X(\infty) = X(t)$ as $t \rightarrow \infty$ = the weak connectivity of a net.

2. If a net is random and has contact density a , then (3) $X(\infty) = 1 - [1 - P(0)] e^{-aX(\infty)}$. This formula can be solved despite the presence of ∞ if we note that when $P(0)$ is very small then $X(\infty)$ depends only on the value of a . For example, when $a = 4$ and $P(0) = .01$ then $X(\infty) = .98$. The $X(\infty)$ does not then depend on the size of the system but rather the contact density thus facilitating comparisons between groups of different size but with the same contact density.

3. The third theorem of Fararo and Sunshine concerns the distribution of choices received. They define a convergence order k as the condition of a node who is chosen k times. The following theorem gives the formula for calculating the expected convergence order k in a random net with contact density a .

(4) $P(k) = e^{-a} a^k / k!$; for $k = 0, 1, 2, \dots, N-1$, where $P(k)$ is the probability that a node is at convergence order k , and hence, (5) $nk = NP(k)$, for every k . Theorem three is thus a poisson law with the parameter equal to the contact density.

These three theorems specify the conditions of the random net. When the random net differs from the observed tracing the observed net is said to be biased. Rapoport¹⁰ and Fararo and Sunshine¹¹ have developed four basic bias parameters:

- (1) π , the parent or reciprocity bias
- (2) σ , the sibling or co-friend bias
- (3) π_s , the double-role bias
- (4) λ , the grandparent bias

In the next section we will consider the meaning and calculation of these bias parameters.

Bias Parameters

The bias parameters that have been developed are all derived from Rapoport's notion of distance bias.¹² He suggests that in order to make the observed structure statistics correspond with the random model, distributions "governing the probability that a given individual will come in contact with another given individual in the population"¹³ must be evaluated. The bias parameters specify the impact of distance on the observed tracings. These provide us with additional statistics to compare systems with the same or similar contact density.

The basic bias parameters are π and σ . π is the probability that X selects Y given that Y selects X.

¹⁰Rapoport (1958), op. cit.

¹¹Fararo and Sunshine, op. cit.

¹²Rapoport (1951), op. cit.

¹³Ibid., p. 85.

Thus:

(6) $\pi = \text{Prob} (X_T y \mid y_T X)$ where $X_T y = X$ targets on or selects y . σ is the probability that X selects y given that a third person z exists who targets both on X and y . Thus:

(7) $\sigma = \text{Prob} (X_T y \text{ for some } z, z_T X \text{ and } z_T y)$. As Fararo and Sunshine have demonstrated as $N \rightarrow \infty$, $\pi \rightarrow 0$ and $\sigma \rightarrow 0$.¹⁴ Thus for large systems the values of π and σ in the random net are practically zero. Therefore, the biased net tracing formula yields:

$$(8) P(t+1) = [1-X(t)] [1 - e^{-aP(t)}], \text{ where,}$$

$$\text{for } t = 0 \quad X = a$$

$$\text{for } t \geq 1 \quad X = a - \sigma (a-1) - \pi$$

and where:

σ = the reduced density, i.e., the density minus the bias effects.

Fararo and Sunshine offer the following graph and interpretation to depict the relationship between the tracing statistics and the bias estimates.¹⁵ An important corollary of the relationship is now observed. When $\pi = \sigma = 0$, then $\omega = a$ and the bias formula is identical to the random net formula (1 above). Thus, the random net is interpreted as a special case of the bias formula. (See Figure 2.)

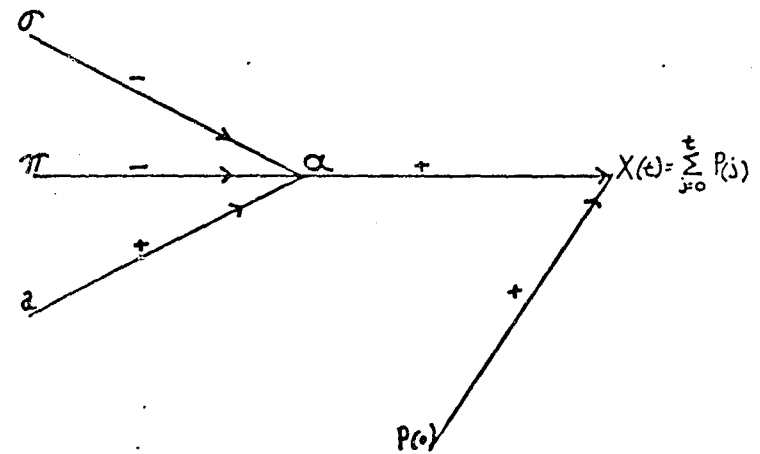
In their analysis of net structures Fararo and Sunshine developed λ and π , because the basic structure statistics did not generate a biased set of structure

¹⁴Fararo and Sunshine, op. cit., p. 27.

¹⁵ibid., p. 28.

FIGURE 2

DEPICTION OF BIASED NET THEORY FORMULA



statistics that would account for the observed structure statistics. λ is defined as the probability that a subject chooses one subject but not another subject given that the third subject is selected by the chosen subject or chooses the initial subject.

Thus:

$$\lambda = \text{Prob } (zTX \mid \text{for some } y, XTy, yTz \text{ and not } XTz, \text{ and } X \neq y \neq z).$$

π_s is defined as the probability that "y selects X, given that some z selects both X and y and that X selects y".¹⁶ Thus:

$$\pi_s = \text{Prob } (yTX \mid \text{for some } X \text{ and } y, zTX, zTy \text{ and } XTy).$$

We can now note that the bias parameters are all probabilities thus having an easily interpretable range (0 to 1) and that they all are related to the issue of distance, that is the tendency for choices to cluster and be reciprocated. We should also note that as in the case of the observed structure statistics there are not as yet sampling distributions for the bias parameters. However, as we have noted above, this does not seriously restrict the use of these measures in a comparative sense or as means to account for variation from the baseline model (the random net).¹⁷

The above discussion of random and biased nets suggests the use of computer facilities in the analysis of the tracing and the bias parameters. Fortunately a significant amount of this work has been done by Fararo and Sunshine. They have written a program in IBM 7070 AUTOCODER for the evaluation of the observed structure statistics, and programs in FORTRAN II for the estimation of bias parameters

¹⁶ ibid., p. 66.

¹⁷ H. G. Landau, "On Some Problems of Random Nets," Bulletin of Mathematical Biophysics, 15 (1952), 203-212.

and the random nets. We have adapted the later programs to FORTRAN IV and translated the AUTOCODER program into FORTRAN IV. Appendix A contains the general description of the computer methods utilized by Fararo and Sunshine and adapted to the hardware available for this study. These methods allow us to calculate t , $n(t)$, $P(t)$, $N(t)$, $X(t)$, π , σ , π_s , λ , and the random net for any size population up to $N=999$, for contact densities=10, and for up to seven subpopulations specified within that population (the techniques for estimation of the statistics are the same for subpopulations the only difference is a series of subroutines in the tracing program that limit the tracing to certain characteristics that are entered as data following the nodes identification number and his targets).¹⁸

Clique Analysis

The technique of clique analysis emphasizes the fact that in large social systems there are a number of structures that can be characterized as having high rates of internal choices and low rates of external choices (i.e., the total structure has weak connectivity). The problem has been to identify these structures. As noted earlier this can be done simply in small groups by the use of the sociogram but in large systems it is not always clear how the sociogram should best reflect the structure of choices. The problem is essentially one of developing objective criteria for observation of clique structures within the data of sociometric choices of large groups.

There have been two basic approaches to the problem of clique analysis. Both approaches utilize zero-one matrices in the depiction of the sociometric choices.

¹⁸For a complete description of the programs and procedures see Appendix B.

Thus a zero is placed in a_{12} indicates that 1 did not choose 2; 1 in a_{12} indicates that 1 chose 2 and a 1 in a_{21} indicates that 2 chose 1. Thus the matrix is always square, and the diagonals are always zero (since a subject cannot choose himself).

The first of the techniques was developed initially by Luce and Perry¹⁹ and later by Luce²⁰ and Harary and Ross.²¹ This procedure sets up definite criteria of clique determination and then uses the raising of the sociomatrix to the n th order to identify the predefined cliques. Thus, Luce and Perry initially defined a clique as a complete symmetric subgroup containing three or more members. The identification of the cliques is achieved by raising the sociomatrix to the third power. The entries in the resulting matrix indicate the number of 3-chains between i and j in the matrix. The difficulty with this approach is the restrictiveness of clique definition and the fact that the cliques are defined explicitly by the procedure itself.

The second method of clique analysis places greater emphasis on the manipulation of the sociomatrix in order to increase the visibility of group structure in the sociometric data. In this approach there exists an isomorphic relationship between the processed matrix and the sociogram allowing the construction of a useful sociogram from the processed matrix. Most notable in this approach are Forsyth

¹⁹R.D. Luce and A.D. Perry, "A Method of Matrix Analysis of Group Psychometrika, 14 (1949), 94-116.

²⁰R.D. Luce, "Connectivity and Generalized Cliques in Sociometric Group Structure," *Psychometrika*, 15 (1950), 169-190.

²¹F. Harary and I. Ross, "A Procedure for Clique Detection Using the Group Matrix," *Sociometry*, 20 (1957), 205-215.

and Katz,²² Coleman and MacRae,²³ and Spillerman.²⁴ Due to the differences in the degree of procedural prespecification of these two approaches we have decided to follow the latter approach and will more fully develop it in the following paragraphs.

Forsyth and Katz specified the basic procedures for the analysis of sociometrics. They observed that group structures could be observed in sociometric data that is presented in a matrix form by re-arranging "the rows and columns in a systematic manner"²⁵ so as to form principal minors in the matrix that correspond to sub-groups of the total population. Their procedures involved the actual physical movement of these rows and columns, similar to early manual means of Guttman scaling, in order to group together mutual choices. While this procedure has been shown to accomplish the goal of clique identification it, like the sociogram, proved extremely tedious when applied to large numbers of subjects and choices. The developments since Forsyth and Katz' have been primarily in the direction of adapting the procedure to more efficient means of analysis. In addition, there has been at least one major substantive change in an attempt to allow for even more explicit

²²E. Forsyth and L. Katz, "A Matrix Approach to the Analysis of Sociometric Data," Sociometry, 9 (1946), 340-346.

²³J.S. Coleman and D. MacRae, "Electronic Processing of Sociometric Data for Groups Up to 1,000 in Size," American Sociological Review, 25 (1960), 722-727.

²⁴S. Spillerman, "Structural Analysis and the Generation of Sociograms," Behavioral Science, 11 (1967), 312-318.

²⁵Forsyth, op. cit., p. 341.

determination of clique structures.

In 1960, James Coleman and Duncan MacRae described a program they had developed to handle the Forsyth and Katz procedure for groups up to 1,000 in size. These procedures also involve the permutation of rows and columns in the sociomatrix, and are essentially iterative. The flow for the program is as follows:

- 0 start at first chooser
- 1 extract name of chooser
- 2 get rank of chooser from name-to-rank index (at step 1 rank and name are the same).
- 3 extract name of chosen
- 4 get rank of friend from name-to-rank index
- 5 add difference in ranks to permutation count; if ranks are adjacent, skip to step 17
- 6 add ranks and divide by 2, rounding down to get new rank of previously lower ranking man
- 7 replace lower (L) rank by new rank in name-to-rank index
- 8 go to rank-to-name index with old rank of (L) plus 1 as address. Extract name and replace at old rank of (L) by subtracting 1 from address.
- 9 take this name as address and subtract 1 from rank located at that address (name-to-rank index)
- 10 repeat steps 8, 9 moving up one rank each time, until up to new rank of (L)
- 11 put name of (L) in rank-to-name index at new rank (just vacated)
- 12 replace higher (H) rank in name-to-rank index by new rank of (L) plus 1 (analogous to step 7)
- 13 go to rank-to-name index with old rank of (H) minus 1 as address. Extract name and replace at old rank of (H) by adding 1 to address
- 14 take this name as address and add one to rank located at that address (name-to-rank index)
- 15 repeat steps 13, 14 moving down one rank each time, until down to new rank of (H)
- 16 put name of (H) in rank-to-name index at new rank (just vacated)
- 17 if chooser has more friends, recycle to step 2
- 18 if end of chooser's friends, is there a following chooser? If yes, recycle to step 1
- 19 if no, then note permutation count, total number of moves necessary in this iteration (from step 5 for all chooser-friend

20 pairs). If fewer than criterion, stop
if not, then go back to start of choosers, step 0 (new iteration).²⁶

It can be seen that the essential steps (6-15) involve the reidentification of mutual choices by the calculation of ranks that place mutual choices next to each other. The name allows continuous identification of the individual but the dynamic ranks provide for the ordering of individuals to minimize the distance between mutual choices. It is clear that the Forsyth and Katz approach has not been modified, and that neither procedure imposes on the data a structure as does the Luce and Perry procedure.

In applying this program to real data Coleman and MacRae observed that while the procedure did lead to a significant increase in the clarity of the clique structure within the population studied certain ambiguities were apparent. The most significant of these ambiguities was the presence of what the authors termed "octopus-like configurations," that is, arcs composed of nonclique individuals that were superimposed upon the clique clusters. The processed matrix exhibited long strings (up to fifteen subjects) who were not a part of the clique but were "tied into" the clique by the permutation process. They state:

The ordering of persons that result from this permutation superimposes "arms" of the octopus, and superimposes unconnected subgroups without discriminating them from one another.²⁷

This condition was not apparent in the Forsyth and Katz analysis primarily because they dealt with a small N. Coleman and MacRae suggested that the problem these

²⁶ Coleman and MacRae, *op. cit.*, p. 726.

²⁷ *Ibid.*

results reflect is the unidimensional constraint of sociomatrix representation. That is, an individual is allowed membership in only one subgroup. If he is a member of two distinct subgroups he cannot be placed in an equi-distance relation to both. The "octopus arms" represent individuals who are members of more than one distinct subgroup but who are pulled towards the more cohesive of the subgroups to which they belong. In other words, the matrix does not allow for the replication of individuals within subgroups.

Seymour Spillerman has only recently developed procedures for handling the problem of unidimensionality in sociomatrix analysis. He observed that the "octopus" phenomena in the Coleman and MacRae data represented liason circuits or chains that linked subgroups (i.e., individuals appearing within two subgroups). The problem is to eliminate these areas while not disturbing the structural elements in the matrix. Spillerman's solution establishes cliques in the same way as the Coleman and MacRae approach, however there is established in the program a criterion for the identification of clique boundaries solely on the basis of the characteristics of the relationship. When this criterion is met the program re-cycles and renews the process of clique identification over the entire matrix. Thus, in the n th clique there can be replications of individuals. Once the cliques are identified (allowing for replications) most of the liason connections are removed, those that remain are "broken" and printed out on the processed matrix. The processed matrix and the data on circuit arcs (the broken arcs) allow one to construct a sociogram that maximally reflects the cliques within the population studied.

The criterion developed for the evaluation of clique boundaries involves

the concepts of open and covered arcs. An arc is open "when one of its two adjacent nodes has been selected and it remains open until the second node is chosen, at which time is covered."²⁸ The evaluation criterion is then:

$$\text{Minimize } N_x = \text{minimize } [(\text{number of arcs open} \\ \text{after the selection} - \\ \text{number of arcs} \\ \text{covered by the selection})]$$

where

α is an integer and the minimization is taken over all nodes (X) which are candidates for that choice. A value for alpha of two has been found to maximize clustering.

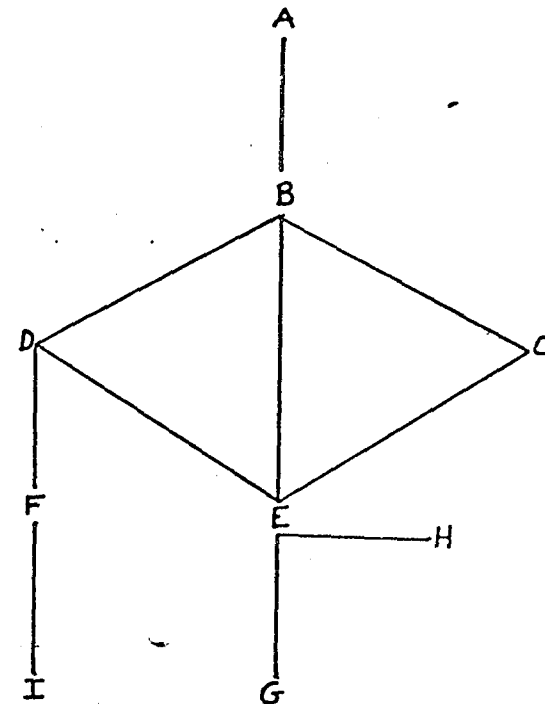
Thus in evaluating which of the various paths to take from a particular node (the initial node is selected that contains the fewest connecting arcs) the procedure specifies that decisions be based on the minimization of N_x . This continues until the path reaches a terminal node, a node whose paths have all been covered by the current tracing.

An example from Spillerman will demonstrate the operation of the criterion in identifying the boundaries of cliques. Figure 3 shows the choices within a clique originating with node A. The procedure to identify this clique would be as follows: From node A traverse to B, at this point there are three alternatives--C, E or D. The value of N is computed for each alternative: $N_C = 4 - (2)(1) = 2$; $N_E = 6 - (2)(1) = 4$; $N_D = 5 - (2)(1) = 3$ --thus node C is selected. Now nodes D and E

²⁸Spillerman, op. cit., p. 315.

FIGURE 3

HYPOTHETICAL CHOICE STRUCTURE



become choice possibilities. At this point $N_D = 0$; $N_E = 1$; and node D is selected. From D nodes, E and F are tested ($N_F = 2$, $N_E = -3$), E is chosen and the clique is complete.

The procedure does not require the plot as in Figure 3, this was presented only for illustrative purposes. The choices are assembled in matrix form and the permutations based on the minimization of N criterion generate the processed matrix. Then the sociogram is constructed from the sociomatrix by linking replicated nodes, nodes at the ends of sequences (i.e., cutoffs based on the criterion procedure) and the dominant nodes of other liason arcs. This forms a skeleton of the sociogram and the remaining members of cliques and liason arcs can be entered to complete the sociogram. Spillerman has demonstrated that this technique eliminates the superimposing that occurred in the Coleman and MacRae approach. Spillerman's technique was programmed in FORTRAN II for an IBM 7090. Only minor control modifications were required to adapt this program to our hardware.²⁹

In the above sections we have specified how we plan to analyze the sociometric data which we concluded was so essential to an understanding of the relationship between inmate culture and inmate social structure. Our emphasis, while on the structural analysis in this chapter, will be on the characteristics of the social structure and the relationship between this structure and degrees and patterns of normative commitment. In Chapter Four we will present the data on connectivity for the total study population and the sub-populations defined in terms

²⁹ Program was provided by the University of Wisconsin Data Center.

of living arrangements (in our case cotiaques). Our concern will be to characterize the total structure and relate the dimensions of normative commitment to the patterns of structural connectivity. As we noted above the comparative value of structure statistics is limited by the absence of sampling distributions for these statistics; however, we will proceed, as have others, to look for degrees of difference that are convincingly different.

In Chapter Five we will utilize the procedures of clique analysis to identify subgroups within those elements of the total population showing high connectivity levels in order to more precisely identify the levels of structural participation. Again our interest will be on the relationship between structures and culture.

In Chapter Six we will focus on the patterns of leadership and the characteristics of elites and followers utilizing the more traditional forms of data analysis. The major thrust of our leadership analysis will be an evaluation of the "minimal cultural" position, namely that the leaders are those who are highly prisonized.

As a result of these various forms of structural and normative analysis we hope to be able to address more adequately than our predecessors, the relationships between culture and social structure with special reference to the inmate society.

³⁰Two readers of this chapter have suggested that it be placed as an appendix as it is essentially an extended paraphrase of the work of Fararo and Sunshine and Spillerman. While I agree with this characterization I have maintained this as a chapter in order to increase the readers' awareness of these techniques. It must be clearly stated however that this does not alter the fact that the author has attempted to reproduce rather than extend their invaluable contributions to the analysis of sociometric data.

CHAPTER III

DATA COLLECTION

Introduction

In this chapter we will describe the institution selected for study, selected aspects of the population of that institution, data forms not discussed in Chapter Two, and the major procedural limitations of this study. The foremost of these limitations is the fact that we have studied only one institution. This has been a persistent criticism of inmate studies, one of which we were aware but could not effectively remedy. The selection and use of a variety of institutions is extremely costly, time consuming and administratively implausible given our resources and status.¹ For these very pragmatic reasons, we found it necessary to select only one institution, an institution to which we had access and one which would appear to clearly maximize interaction. The latter of these criteria was the more relevant in our selection procedures but both were utilized in the final selection.

As we have indicated in Chapter One, the overwhelming consensus of

¹This is attested to by the scope of those projects that have utilized the comparative approach. For example, Daniel Glaser's analysis of the federal prison system lasted five years and involved sixteen assistants, Street's study of six juvenile institutions took four years and the data for Cline's dissertation was collected over a period of three years in a larger project directed by Stanton Wheeler. See Daniel Glaser, The Effectiveness of a Prison and Parole System (Indianapolis: Bobbs-Merrill), 1964; David Street, et al., Organization for Treatment (Glencoe: Free Press), 1966; and Hugh Cline, The Determinants of Normative Patterns in Correctional Institutions (unpublished Ph.D. dissertation, Harvard University, 1966).

previous studies of inmate societies is that the society is highly integrated, behaviorally and normatively. It was our contention that to evaluate this position given the "sampling" restrictions noted immediately above, we should attempt to select an institution that would be most likely (on the basis of previous research) to exhibit a high degree of cohesiveness. We would thus be maximizing the measures of interaction and normative commitment and therefore giving the consensus model its most positive setting for support. In the following sections of this Chapter we will briefly review the characteristics of institutions and populations that have been found to be associated with high degrees of consensus, describe the institution selected in terms of these and other factors, and then describe the data collected and the techniques of collection.

Characteristics of High Consensus Institutions

In Chapter One we observed that Glaser had found no significant differences in interactional levels between institutions, however, Street, et al. had observed that institutions of the "mixed goal" type (i.e., goals of treatment and discipline or control) exhibited high interaction and prisonization levels.² Their data suggested that while treatment oriented institutions may have high levels of inmate interaction they do not exhibit high degrees of normative commitment. In addition, institutions characterized by excessive emphasis on control effectively inhibit interaction though prisonization may flourish. Thus, the consensus model of interaction and normative commitment should be most observable in a mixed goal

²See Chapter One, pp. 16-19.

Institution. Furthermore, the more a mixed goal institution is treatment oriented (relative to control) the greater the rates of interaction, and the greater the degree of control (relative to treatment) the higher the degree of prisonization. These relationships are exhibited in Table 1. It is apparent that the normative model, assuming the validity of the Street findings, is potentially most useful in the mixed goal institution. This would appear to be the most frequently encountered type of institution,³ and thus the normative model could have a useful generalizing function. An appropriate institution for study is one characterized by mixed goals. This, to our knowledge, is the only comparative research on the relationship between institutional climates, inmate interaction and normative commitment, and therefore a basic factor in the selection of a setting for our research.

TABLE 1
INSTITUTION GOALS AND CONSENSUS

Type of Consensus	Institutional Goals		
	Treatment	Mixed	Control
Interaction	+	+	-
Prisonization	-	+	+

The other factors that have been found to be related to high degrees of

³The conflict between the institutional goals of treatment and control has been identified by Conrad as a central dilemma in American corrections. See John Conrad, *Crime and Its Correction* (Berkeley: University of California Press, 1966), pp. 11-58.

cohesiveness involve characteristics of the institutions' population. The basic finding has been that the more homogeneous the population the higher the rates of cohesiveness. Thus, Glaser observed that the greater the similarity with regard to race, length of sentence, social class and prior correctional confinement, the greater the degree of interaction. In addition, Glaser observed an inverse relationship between age and solidarity.⁴ These relationships were observed in part by Clemmer, Schrag and Wheeler. This suggests the selection of an institution whose population is very homogeneous in terms of the above parameters and/or an institution that is composed of units where the homogeneity is intensified.

The above presents us with three dimensions, in addition to the criteria of accessibility, for the identification of a setting that should maximize measures of inmate cohesiveness. First, an institution characterized by mixed goals. Second, an institution handling young offenders. Third, an institution containing a homogeneous population.

The Institution

On the basis of the above considerations, we selected the male component of the Cedar Knoll School, Laurel, Maryland as the site for our study. This institution serves the District of Columbia and is administered by the Department of Public Welfare. Cedar Knoll is a part of the Children's Center of the District of Columbia to which indeterminate commitments, not to exceed age 21, are made by the Juvenile Court.

⁴Glaser, op. cit., p. 98.

The Children's Center consists of three separate institutions: District Training School, a 1,200-bed institution for the mentally retarded; Maple Glen School, a 241-bed institution for younger (to age 14) delinquent boys; and, Cedar Knoll School, a 552-bed facility for older boys and girls (ages 14-18). Under the supervision of the Welfare Department's Deputy Director for Institutional Services, the Administrator of the Children's Center and his staff are responsible for the operation and administration of all programs serving the three institutions. In 1966 the authorized staff totalled 957 full-time positions and the budget was \$7,052,758.⁵

Cedar Knoll, opened in 1955, is located on a two hundred acre tract in a rural area approximately twenty-two miles from Washington, D.C. The physical facilities include thirteen cottages (six for males; four for females; two for security; and one for reception functions) and separate buildings for administration, education, chapel, dining, power plant, warehouse and staff housing. The security and reception cottages have single rooms, all of the cottages for males and most of the cottages for females contain dormitories. The cottages are divided into two residential units, each containing a four-room security unit for disciplinary purposes, a dormitory, a shower-lavatory complex, and a recreational area (television, cards, ping-pong and games). Recreational facilities include a central swimming pool and athletic field, and outdoor basketball facilities for each cottage for males.

Cedar Knoll serves females of all ages and males from approximately fourteen through eighteen. In 1966, six hundred and fifty juveniles were admitted

⁵Report of the President's Commission on Crime in the District of Columbia (Washington: U. S. Government Printing Office, 1966), p. 650.

to the institution (425 males). The average daily population in 1966 was 485 and in 1967, 432. The average length of stay for the children leaving the institution in 1966 and 1967 was 11.6 months. The ratio of males to females has remained at approximately 1.4 to 1 since 1962.

The educational program at Cedar Knoll dominates the treatment process for most of the juveniles at the institution. The school program is run by the Children's Center Superintendent of Schools. Formal classes are conducted for six hours a day for at least 185 days during the academic year and for an additional six weeks during the summer. The educational courses at Cedar Knoll are generally felt to operate as an ungraded remedial program at the junior high school level.⁶ This program includes on the average 70 per cent of the total male population of Cedar Knoll on a full-time basis and 76 per cent on a half-time schedule. Only 32 per cent of the males at Cedar Knoll are currently involved in non-school, treatment programs (i.e., therapy and/or on-the-job vocational training).

The services of other specialists assigned to the Center's staff are also available to the residents at Cedar Knoll. There are six social workers assigned to the Cedar Knoll population including four for the males. There is one psychiatrist and four psychologists who provide therapy to those deemed most in need of these services, though their primary responsibility is to the residents of Maple Glen and the District Training School.

The counselors who supervise the cottages have primary responsibility

⁶Ibid., p. 652.

for the juveniles when they are not in school. The counselors work eight-hour shifts and are responsible for the presence of the juvenile while he is on the grounds of Cedar Knoll. The counselors are for the most part not college educated (21% have advanced degrees), are negro (89%) and are not assigned specific treatment functions. Their role essentially corresponds to that of guard in an adult correctional setting. There is one counselor per shift for each side of a cottage. The counselors are supervised by a Chief Counselor for each cottage, who is responsible to the superintendent of the institution. During the summer of 1961, I was employed as a counselor in the orientation cottage at Cedar Knoll, a fact that materially aided the acceptance by the Center's administration of the project described in this dissertation.⁷

The seven male cottages consist of an orientation cottage, five residential cottages and a security cottage. Following a brief stay in the reception cottage (approximately ten days to two weeks) each boy is quartered in the orientation cottage (cottage B-1) during which time he is tested and interviewed. During this period of diagnosis (one to two months) he is kept under greater security. After the period of diagnosis each boy is assigned to one of the five residential cottages (cottage B-2 through B-6) primarily on the basis of available space in the cottages although there are attempts to place the younger, less experienced youth in cottages B-2, B-3 and B-4, the special treatment youth (off-grounds work, therapy, etc.) in

⁷ The Aide of Mr. William Barr, Cedar Knoll Administrator, is again gratefully acknowledged. He was most helpful in securing approval of this project from the Center's staff and made the facilities, files and staff of Cedar Knoll available to the project.

B-6 and the older more aggressive youth in B-5. The security cottage (B-7 or Ash Cottage) contains those assigned to it by the adjustment committee for rules infractions. Assignment to B-7 is temporary and averages approximately three-weeks.⁸

We are now ready to address the dimensions specified in the second section of this chapter. We will begin with the most difficult to assess, the criteria of institutional goals, and then proceed to the degrees of inmate homogeneity. The second dimension, a youthful population, is accounted for by the very nature of the institution.

Although it is not possible to precisely estimate the position of Cedar Knoll on the treatment-conformity continuum described above, we can document the operational presence of these conflicting positions. In a recent study of staff perspectives at Cedar Knoll, it was found that the two major concerns of staff were the maintenance of discipline and the lack of proper training for the inmates.⁹ These concerns would appear to be translated as a desire for custody and correction the perennial dilemma of corrections noted earlier in this chapter.

In addition, we can note that although the official policy of the administrators of Cedar Knoll is the "rehabilitation and restoration of delinquent children"¹⁰ the programs and personnel available are not considered adequate for this purpose and thus custody emerges as the primary function of the institution. Thus, the

⁸ Estimate made by the Chief Counselor of the security cottage.

⁹ President's Commission Report, op. cit., p. 706.

¹⁰ Ibid., p. 649.

President's Commission concludes:

1. The Department of Public Welfare currently lacks even the rudiment of essential diagnostic and clinical services. This deficiency manifest in both the Receiving Home and the Children's Center . . . makes it difficult for the Department to plan the most appropriate rehabilitative program for children committed to its care. . . . As a result, the post disposition diagnosis of delinquent children at the Center is superficial, consisting basically of a screening designed to identify those children with serious physical handicaps and the most serious psychiatric or neurological problems.
2. There is limited time for individual counseling and no group therapy is offered.
3. A need for a reorganization of the school program in order to alter its essentially academic orientation.
4. In the absence of adequate staff, the cottage life program is operated strictly on a crisis basis. The administrators of the institution are swamped with a myriad of duties which prevent them from giving the cottage life program direction, supervision and development.¹¹

The Commission's analysis has led to the demand for a drastic reorganization of the Children's Center and a more adequate staffing plan for Cedar Knoll. The current situation at Cedar Knoll reflects the too often encountered condition in correctional institutions--the commitment to treatment and the absence of the tools and personnel necessary to accomplish this end. The result is an overemphasis on control as the primary measure of institutional efficiency.¹² Cedar Knoll is a custody institution that is unable to fulfill the intentions of its staff, the treatment of delinquents. It, like most correctional institutions, can be characterized as having a mixed-goal orientation.

The dimension of population homogeneity offers us a more substantial

¹¹ibid., pp. 701-709.

¹²ibid., p. 711.

basis for assessing Cedar Knoll as a potentially high-consensus institution. The male population of Cedar Knoll at the time of our study totaled 245, of which 231 (94.3%) were negro and 14 (5.7%) were white. As stated above, the length of commitment is the same for all of the residents at Cedar Knoll--indeterminate. With regard to social class homogeneity, we can indicate that 80% of the 1965 commitments came from families receiving some form of public assistance¹³ and that 91% of the residents at the time of our study last resided in census tracts whose median income ranked in the lowest quartile for Washington, D.C.¹⁴ The remainder resided in census tracts whose median income ranked in the second lowest quartile. Though we do not have more precise measures of social class similarity the indication is that the Cedar Knoll population is very homogeneous on this dimension. Therefore, on the basis of the homogeneity of the Cedar Knoll population with respect to the factors identified in previous research on interaction in correctional institutions as being indicative of high cohesion, we can conclude that Cedar Knoll should provide us with a setting in which we would expect to maximize the occurrence of data supporting the cohesion model. The data on other descriptive characteristics of the Cedar Knoll population lends further support to this contention.

Thus, 95.5% (234) of the study population had resided in Washington, D.C. since at least age six, with 83.3% (204) of the population having been born

¹³ *Ibid.*, p. 651.

¹⁴ Block Report for the District of Columbia, 1960 (Washington: U.S. Government Printing Office, 1964).

and fully reared in that city. Of those not born in Washington, D.C., 14.7% (36) were migrants from the Southern states, 1.6% (4) were from other sections of the United States and .4% (1) were foreign born. Analysis of the family situation of the study population indicates that 70% (170) were from incomplete families while only 30% (75) were residing with their parents, guardians or responsible adults immediately prior to their commitment. These data also demonstrate the homogeneity of the population which is a reflection of the limited geographical area served by the institution and the abundance of lower-class negroes within that geographical area.

We conclude therefore, that the Cedar Knoll School offers a setting in which we might expect interaction levels and normative commitment to be high among the residents. While we are not able to provide comparative data on the measures of cohesiveness we will discuss in subsequent chapters, we would contend that the institution we have selected would stand near the positive end of a continuum depicting degrees of expected cohesiveness among the residents. This affords us an opportunity to approximate a test of the consensus model not in a random or representative setting but in an optimal setting.

Procedures and Instruments for Data Collection

Data Collection. The data were collected at Cedar Knoll School during the period of December 23 - January 14, 1968-69. Questionnaires were administered to the male population (N=245) assembled into four groups averaging sixty-one subjects per group. The assistant administrator of Cedar Knoll introduced me to each group as a Criminologist from the University of Pennsylvania, and he asked them to cooperate fully in filling out the questionnaire. Prior to my arrival at

Cedar Knoll each of the cottage Chief Counselors were advised of the nature of the project and were asked to encourage their students to cooperate while at the same time emphasizing the independence of the study from the institution. Following the administrator's introduction the project and the affiliation of the research was fully explained by the researcher. At this point the administrator left the group and questions were requested from the subjects. Then the researcher distributed the questionnaires and proceeded to read each question, allowing time for the subjects to respond. These procedures produced 218 completed questionnaires.

Twenty-seven questionnaires were found not to be complete. Of these, fourteen were completed in a group re-interview at which time the questions not previously responded to were answered; nine were completed in an individual interview situation that was necessitated by the program schedule (work or home visit) of the subject. Four subjects expressed a desire not to complete any portion of the questionnaire. These subjects were also seen individually after they had been reminded by the administrator that their institutional record would include notations concerning further reluctance to participate. The interviews with these subjects were completed following this warning.

Additional data were collected from the social service files of each subject. The most consistently useful portions of these files were the juvenile court probation summaries and the institutional diagnostic summaries. Data on age, race, religion, time served, offense history, institutional history, residence prior to commitment, place of birth, family status, last school attended, last grade completed, and institutional program, visits and disciplinary actions were culled from these

sources. These data were extracted from the files and coded directly on the code sheets. The questionnaire, code sheet and codes are presented in Appendix C.

The Questionnaire. The subjects were first asked to print their name (the order was not specified) and indicate their age to the nearest year. Next they were asked to print the names of the four male students currently at Cedar Knoll whom they considered their best "walking partners" (a term meaning friend or associate). The decision to limit the number of friends to four was motivated by the following considerations. First, the tracing technique generates statistics that are comparable for groups having the same contact density and starting fraction.¹⁵ Thus, because we planned to use the structure statistics primarily for comparative purposes, it was decided that the number of selections must be uniform. Second, the number was set at four because the interaction research indicates that this will include the maximum number of choices of approximately 85-90% of inmates who are given an unstructured response opportunity. For example, Cline has found the average number of friends in the 10 institutions he studied did not exceed four¹⁶ and Street observed that only 2.5 per cent of the subjects felt they had more than four close friends in the institution. Third, previous use of the tracing procedure had utilized four or less selections providing us with statistics for non-institutional juvenile collectivities.¹⁷

¹⁵See Chapter Two for a discussion of these elements.

¹⁶Cline, *op. cit.*, p. 172.

¹⁷C.C. Foster, A. Rapoport and C.J. Orwant, "A Study of a Large Sociogram, II," *Behavioral Science*, 8 (1963), 56-65.

The decision to utilize the sociometric criterion of friendship was based on the following considerations. First, previous research of social participation of inmates has focused on the number of friends. Second, we are interested in identifying the interaction structure of the institution (which we generously refer to as the social structure), which in informal non-task oriented organizations is best translated into the friendship dimension. In this connection we note that the major works of informal group structure have utilized friendship as the sociometric criteria.¹⁸ Finally, the hypothesis concerning congruence between prisonization and structural position implies that the relationship is an affectual one that would be expressed in terms of friendship rather than power, ability, etc., or other sociometric criterion that are frequently utilized. It must still be clearly stated however that by using other sociometric criterion different structures could be generated.

The next section of the questionnaire consists of three situations patterned after those used previously by Wheeler, Cline, and Wellford.¹⁹ The subjects were asked what they thought about the situation described and how they felt others would feel about the same situation. If the subject responded to two of the three situations in a way indicating support for the inmate code he was designated as highly prisonized (self and/or other), otherwise he was designated low in normative commitment. This procedure, as noted in Chapter One, has proven to be the most adequate yet

¹⁸For example, see sources cited in Chapter Two on the analysis of group structure and, especially J. Coleman, The Adolescent Society (Glencoe: Free Press, 1964), pp. 285-287.

¹⁹See discussion in Chapter One.

developed, though it is obviously still at a crude level of measurement.

The last section of the questionnaire consisted of the eighteen item BGOS High-Low Interpersonal Maturity Scale. As briefly noted in Chapter One the relationship between normative commitment and broad personality types has largely been restricted to the use of the Schrag typology, a typology that has not been operationalized for juvenile populations. Previous work by the author has led him to believe that the understandings of patterns of normative commitment and possibly structural cohesion are materially aided by the classification of populations into relevant personality types. The suggestion is that some types (in this case low interpersonal maturity subjects) may be more amenable to the consensus model than are other types. For this reason we selected a typological scheme that had been extensively utilized in conjunction with the classification of institutionalized juvenile offenders.

Sullivan *et al.*²⁰ have described normal psychological development as following a trend toward increasing involvement with objects, people and social institutions. They state that:

. . . these involvement give rise to new needs, demands, and situations. Inherent in many of these new situations are problems of perceptual discrimination with regard to the relationships existing between the self and the external environment. As these discriminations are made and assimilated, a cognitive restructuring of experience and expectancy takes place. A new reference scheme is then developed; a new level of integration is achieved.²¹

²⁰ Clyde E. Sullivan, M.Q. Grant and J.D. Grant, "The Development of Interpersonal Maturity," *Psychiatry*, 20 (1957), 373-385.

²¹ *Ibid.*, p. 359.

Similar to physical growth, the authors state that psychological development does not follow an even course, rather "it is marked by growth spurts, by periods of insight and reorganization interspersed with rest periods of relative stability and self-maintenance."²² The authors believe that psychological development is meaningfully described in terms of seven successive integrations. Each stage or level is defined by a crucial interpersonal problem which must be solved before further maturity can occur. All persons do not necessarily work their way through each stage, but may become fixed at a particular integration level. At each of these levels of integration, the core of personality may be characterized as a nexus of relatively consistent perceptions, attitudes, and expectations.

A brief description of each of the four levels of interpersonal maturity found in a delinquent population (Levels 2 through 5), according to Grant and Grant, is given below:

Maturity Level 2: The individual whose interpersonal understanding and behavior are integrated at this level is primarily involved with demands that the world take care of him. He sees others solely as "givers" or "withholders" and has no conception of interpersonal refinement beyond this. He is unable to explain, understand, or predict the behavior or reactions of others. He is not interested in things outside himself except as a source of supply. He behaves impulsively, unaware of the effects of his behavior on others, and is apt to explode or run away when frustrated or thwarted.

Maturity Level 3: The individual who operates at this level is attempting to manipulate his environment in order to get what he wants. In contrast to level 2, he is at least aware that his own behavior has something to do with whether or not he gets what he wants. He still does not differentiate however, among people except to the extent that they can or cannot be useful to him. He sees people only as objects to be manipulated in order to get what he wants. His manipulations may take the form either of conforming to the rules of whoever

²² Ibid.

seems to have the power at the moment ("If you can't lick them, join them.") or of the type of maneuvering characteristic of a "confidence man" ("Make a sucker out of him before he makes a sucker out of you"). He tends to deny having any disturbing feelings or strong emotional involvement in his relationships with others.

Maturity Level 4: An individual whose understanding and behavior are integrated at this level has internalized a set of standards by which he judges his and others' behavior. He is aware of the influence of others on him and their expectations of him. To a certain extent, he is aware of the effects of his own behavior on others. He wants to be like the people he admires and may feel guilty about not measuring up to his internalized standards. The conflict produced by the feelings of inadequacy and guilt may be internalized with consequent neurotic symptoms or acted out in antisocial behavior. Because the individual at level 4 tends to be uncomfortable about himself and because he is able to internalize values, he appears more amenable to treatment than previously described maturity levels.

Maturity Level 5: A person who functions at this level is able to see patterns of behavior; he may see himself and others behaving in the same way in different situations or see a continuity in his past, present, and future. He begins to see others as complex, flexible objects which cannot be dealt with on the basis of a few single rule-of-thumb procedures. He is aware of many points of view in the world around him and sees interwoven reasons for behavior. He is able to play different roles in different situations and is thus more flexible. He is more capable of establishing and carrying through long-range plans than persons at lower levels. Delinquency, for a person at this maturity level, is apt to be situationally determined.²³

In connection with the development of the Community Treatment Project the classification scheme given above was further elaborated by Grant.²⁴ It is based in part, upon the work of the California Youth Authority Committee on Standard Nomenclature and is therefore more specifically descriptive of a juvenile population. This elaboration consists of a total of nine subtypes found among three major delinquent

²³ J.D. Grant and M.Q. Grant, "A Group Dynamics Approach to the Treatment of Nonconformists in the Navy," The Annals of the American Academy of Political and Social Science, 322 (1959), 126-135.

²⁴ Marguerite Q. Grant, Interpersonal Maturity Level Classification: Juvenile (California Youth Authority, Division of Research, 1961).

types (Levels 2 through 4). A simple listing of these subtypes is presented below:

Interpersonal Maturity Level Classification--Juvenile

Maturity Level		Identifying Concept
2	Aa - Unsocialized personality (aggressive type)	"demanding"
	Ap - Unsocialized personality (passive type)	"complaining"
3	Cfm - Conformist (immature personality type)	"conforming"
	Cfc - Conformist (cultural type)	"conforming"
	Mp - Manipulator (psychopathic type)	"manipulating"
4	(a) Neurotic	
	Nx - anxiety type	"defending"
	Na - acting out with no felt anxiety	"defending"
	(b) Non-neurotic	
	Se - situational emotional reaction	"identifying"
	CI - cultural identifier	"identifying"

These levels were originally determined by means of semi-structured interviews by trained interviewers. It became quickly evident that while this technique proved highly reliable it was extremely costly and time-consuming. Consequently, the Division of Research of the California Youth Authority began to develop measures of interpersonal maturity levels. The 18-item scale utilized in this project was developed as a result of these attempts.²⁵ These items were selected from an original list of over 600 items that were felt to be relevant in the determination of interpersonal maturity levels, and were administered to the youth assigned to the Community Treatment Project whose level had been determined by interview. The final 18-items were selected on the basis of their ability to discriminate between

²⁵R.F. Beverley, The BGOS (California Department of the Youth Authority, 1965).

high (levels 4 and 5) and low (levels 2 and 3) maturity subjects. The optimal cutting point for the eighteen items was found to be twelve. A score of twelve or above designates high interpersonality maturity, while a score below twelve designates low interpersonal maturity. This scale has been found to have a split-half reliability coefficient of .814. Errors are most frequently found in the designation of high maturity subjects as low maturity. Each subject in the current study was asked to respond to the eighteen item scale and his total score and interpersonal maturity level was coded and punched.

The data collected from the students and files of Cedar Knoll will be analysed in Chapters 4, 5 and 6 by the procedures discussed in Chapter 2. The data collected from the subjects by the group administered questionnaire will be most utilized in Chapters 4, 5 and 6 as we attempt to make more explicit the viability of the consensus model.

CHAPTER IV

CONNECTIVITY AND BIAS ESTIMATES IN THE TOTAL NET AND THE SUBNETS

Introduction

In this chapter we will consider the level of connectivity within the total institution (total net) and the cottages within the institution (subnets). Our initial concern will be with the connectivity of the total net and the ability of the biased model to approximate the random model. We will then consider the degree to which the choice patterns represent institutional connectivity as opposed to intra-subnet connectivity. Finally, we will consider the relationship between subnet connectivity and our measures of normative commitment. The objective of this chapter is the measurement of contact levels and their relationship to normative commitment, while the consideration of the structure of these contacts will be deferred until Chapter 5.

The Total Institution

The observed, random and biased percentage of persons contacted in the total net is presented in Table 1 and Figure 1. We note that the branching procedure in the observed net went to fourteen steps with 88.3 per cent of the total net contacted. That is, on the average, beginning with a set of three randomly selected starters we are able to trace through 88 per cent of the total population of the institution. The random net model indicates that in a nondistance biased

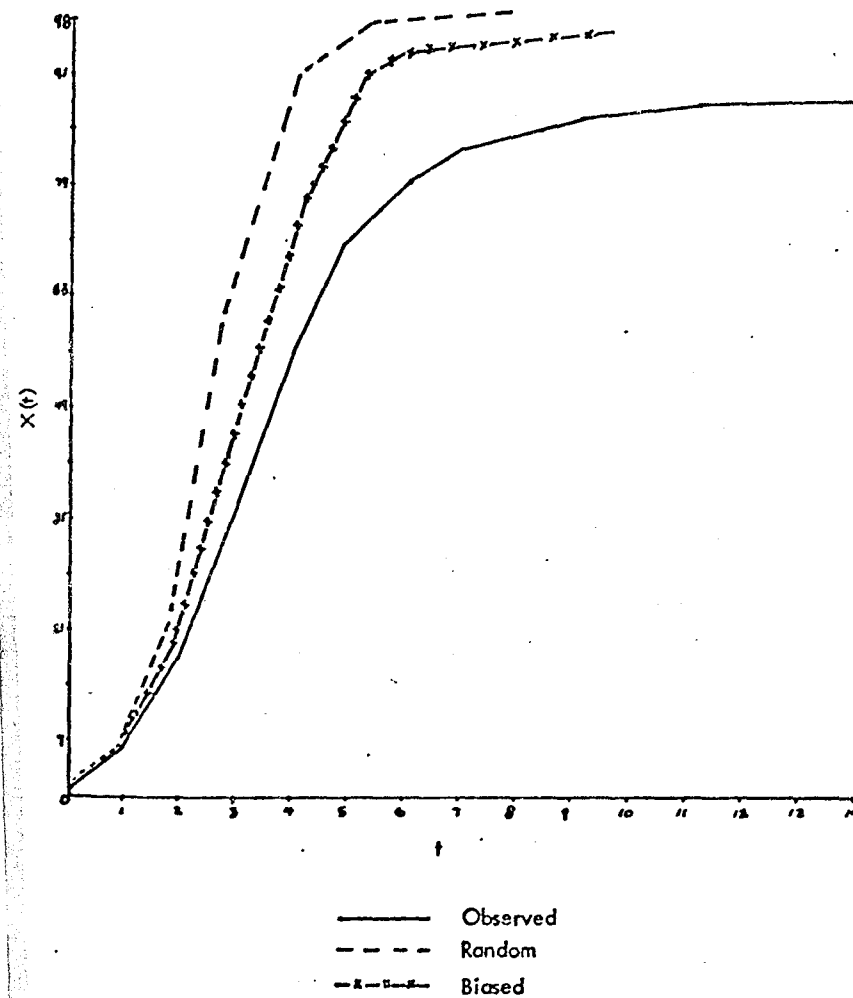
TABLE 1

OBSERVED AND THEORETICAL CUMULATIVE
PERCENTAGE OF PERSONS CONTACTED

Total Net			
Step t	X(t) Observed Average	X(t) Theoretical	
		Random	Biased
0	1.22	1.22	1.22
1	5.92	5.92	5.92
2	17.49	22.06	18.55
3	36.39	59.13	44.66
4	55.88	90.72	75.12
5	69.86	97.38	90.21
6	77.66	97.99	93.83
7	82.25	98.04	94.48
8	85.00	98.04	94.59
9	86.52		94.61
10	87.39		94.61
11	87.91		
12	88.20		
13	88.29		
14	88.32	(98.04)	(94.61)

FIGURE 1

OBSERVED AND THEORETICAL CUMULATIVE
PERCENTAGE OF PERSONS CONTACTED: TOTAL NET B-1 through B-7



situation we would expect to be able to contact 98 per cent of the net after eight steps. Thus the observed structure statistics are lower than the structure statistics of the random net with identical contact density and starting fractions. This supports the general findings of sociometric studies that there are biases in the choice patterns that would create deviation from the random choice pattern. The biased structure statistics should account for the differences between the observed proportions contacted and the expected proportion of contacts based on the random model. As the curves in Figure 1 indicate the biased estimates consistently overestimate the observed values of the structure statistics. Thus, at the final step, the observed average percentage of persons contacted is 88 per cent while the biased estimate is 95 per cent. The biased model for the total net is more like the random model (upper estimate = 98%) than the observed model indicating the existence of other bias effects not accounted for by the distance biases incorporated in our model.

While previous connectivity studies have also found that the biased estimates of the structure statistics over estimate the observed structure statistics, the magnitude differences have not been as large. In their study of junior high school students Fararo and Sunshine found that with a contact density of four and a starting fraction of .01 (similar to the values used in our analysis) the upper limit of the estimate of percentage of the net contacted was 90.6 per cent in the observed net and 91.1 per cent in the random net.¹ The biased model consistently overestimated the observed structure statistics but the difference was gradually reduced

¹T. J. Fararo and M. H. Sunshine, *A Study of a Biased Friendship Net* (Syracuse: Youth Development Center, 1964), p. 41.

as the tracing moved from steps one to (in their case) twelve with the final difference being five-tenths of one per cent as compared to the 6.3 per cent difference in our data. The fact of the differences between the biased and observed structure statistics was not unanticipated; however, we did not expect the magnitude differences to be so large. It is clear that while the bias model has proved effective with other populations it does not effectively account for the non-random elements in the choices of the institutionalized delinquents we have studied. Consideration of one of these nonaccounted for biases, the influence of status differences on choice patterns will be considered in Chapter Five.

The finding that on the average 88 per cent of the inmates in the institution could be contacted from a randomly drawn set of starters could be interpreted as strong support for the theoretical contention that the inmate society is characterized by high total connectivity and therefore a potentially universal social structure. However, for this conclusion to be substantiated, we must demonstrate that there are not recognizable subnets within the institution that are relatively self contained in terms of choices, and would therefore account for the connectivity of the total net. That is, we need a measure of the extent to which the connectivity of the total net is attributable not to total connectivity but the sum of subnet connectivities.

As we have already postulated the importance of cottages as subnets we will restrict our analysis of the issue to cottage subnets. The question resolves to a consideration of the extent to which choices are randomly distributed throughout the institution as compared to the extent that choices are contained within the subnets (cottages). The inbreeding statistic (δ) is defined as $\frac{A_{ii}}{A_i}$, where A_{ii} equals the

number of selections targeted within a subnet and A_i equals the total number of selections by that net (four times N). The random inbreeding values are based on the assumption that the proportion of the members of a subnet chosen is equal to their proportion in the total net (i.e., $\frac{N_i}{N}$, where N_i equals the number in the subnet and N equals the number in the total net). Table 2 presents the observed and random values of inbreeding (δ) for the total net and the seven cottage subnets. With the exception of the reception and orientation cottage (B-1) the observed values are considerably higher than the random estimate of expected inbreeding, indicating that the choices of subjects are not distributed throughout the population but rather are almost exclusively confined to the immediate living unit. The fact that the choices of B-1 subjects are not confined to the B-1 subnet most likely reflects the temporary status of that living group and the subsequent transient nature of the population.

The absence of "real" total net connectivity can be further demonstrated by assessing the extent to which non-cottage choices are reciprocated. Excluding B-1, only six per cent of those choices by members of subnets that were not targeted on members of the nodes' subnet were reciprocated. The hypothesis of institutional cohesiveness as defined by choice structures must be rejected. The unit of relevant analysis in the consideration of the institutions' social structure must be the immediate living unit. The maximal culture theory that the institution is a society must be considered inoperative in this case as there is not a corresponding network of significant interactions. This more adequately demonstrates our contention that the research reviewed in Chapter One itself indicated the absence of strong

TABLE 2

RANDOM AND OBSERVED VALUES OF THE
INBREEDING PROPORTIONS FOR THE TOTAL NET AND SUBNETS

Cottage ¹	Random	Observed
Total	1.0 ²	1.0 ²
B-1	.13	.33
B-2	.14	.93
B-3	.16	.96
B-4	.13	.92
B-5	.12	.84
B-6	.14	.88
B-7	.18	.90

¹Cottages are referred to B-1 through B-7
as described in Chapter 3.

²These are trivially complete in the total
net.

interactional bonds among inmates at the institutional level. The remainder of our analysis will be guided by this finding, as we will now turn to the analysis of the connectivity and clique structure (Chapter Five) of the cottage units.

The Subnets

Tables 3-9 and Figures 2-8 display the results of the connectivity analysis of the subnets. Analysis of the subnet structure statistics indicates: (1) In all cases the biased model is closer to the observed results than was the biased model for the total net. Thus, while the biased model for the total net over estimated the upper limit of the observed structure statistic by 6.3 per cent, the largest over-estimate of the corresponding statistic in the subnet was 4.8 per cent with a mean difference (ignoring signs) of 2.4 per cent. The magnitude of absolute difference between observed and biased structure statistics was .9 per cent for B-1, 2.6 per cent for B-2, .7 per cent for B-3, 4.8 per cent for B-4, 3.7 per cent for B-5, 1.1 per cent for B-6 and 3.2 per cent for B-7. Relative to the total net, the biased models for the subnets more accurately adjusted the random model to the observed data; (2) The observed structure statistics for the subnets exhibit considerable bias in connectivity in that the observed value of $X(t)$ is less than the random model and significantly different from the random model when compared with the difference between the observed and random statistics for the total net. In the total net, the difference between the upper limits of the observed and the random structure statistics was 10 per cent. In the subnets, the mean difference was 13.6 per cent. This suggests that the subnet bias parameters (σ , π , π_s and λ) are larger in magnitude

TABLE 3

OBSERVED AND THEORETICAL CUMULATIVE
PERCENTAGE OF PERSONS CONTACTED--B-1

Step (t)	X(t) Observed Average	X(t) Theoretical	
		Random	Biased
0	9.38	9.38	9.38
1	24.43	23.27	23.27
2	39.68	40.03	36.74
3	50.38	55.45	47.54
4	57.77	66.12	54.85
5	62.88	71.96	59.21
6	64.58	74.72	61.61
7	64.96	75.92	62.87
8	65.06	96.43	63.52
9		76.65	63.84
10		76.73	64.00
11		76.77	64.09
12		96.79	64.13
13		76.79	64.15
14			64.16
15			64.16

FIGURE 2

OBSERVED AND THEORETICAL CUMULATIVE
PERCENTAGE OF PERSONS CONTACTED--B-1

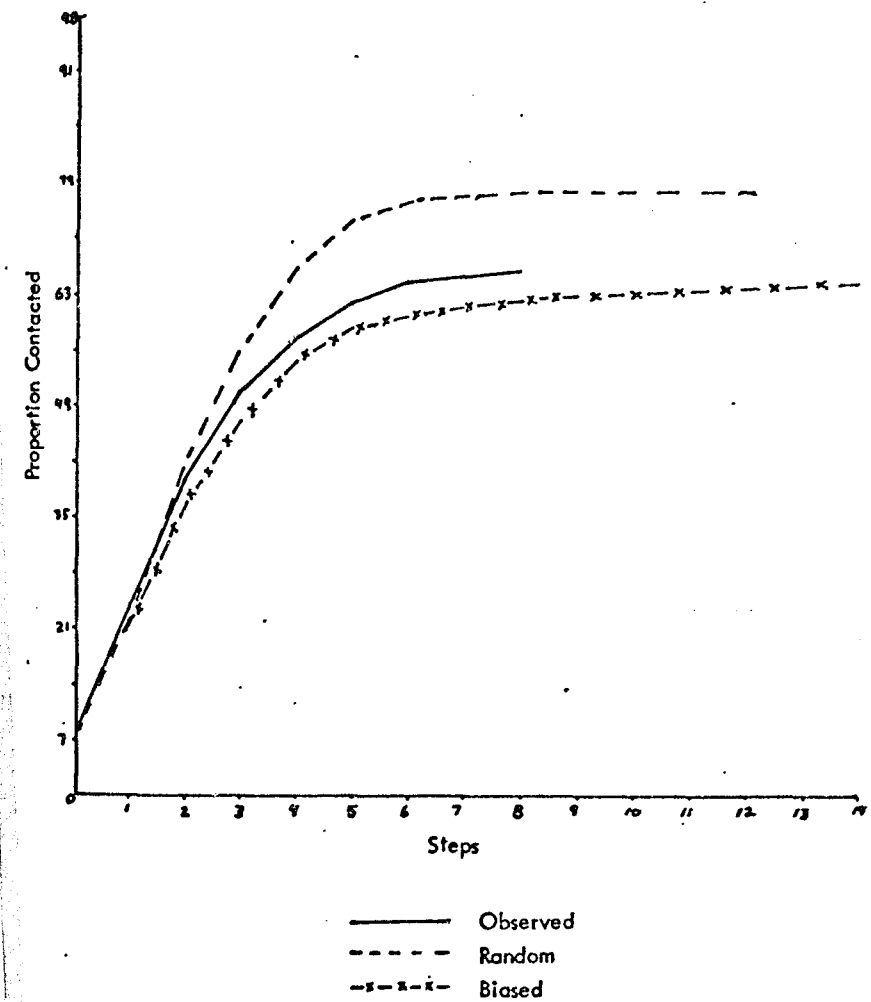


TABLE 4

OBSERVED AND THEORETICAL CUMULATIVE
PERCENTAGE OF PERSONS CONTACTED--B-2

Step (t)	X(t) Observed Average	X(t) Theoretical	
		Random	Biased
0	8.11	8.11	8.11
1	31.99	30.90	30.90
2	62.07	68.97	61.25
3	78.99	91.86	82.06
4	85.18	96.36	89.43
5	87.36	96.89	90.23
6	87.97	96.95	90.62
7	88.06	96.95	90.70
8			90.72
9			90.72

FIGURE 3

OBSERVED AND THEORETICAL CUMULATIVE
PERCENTAGE OF PERSONS CONTACTED--B-2

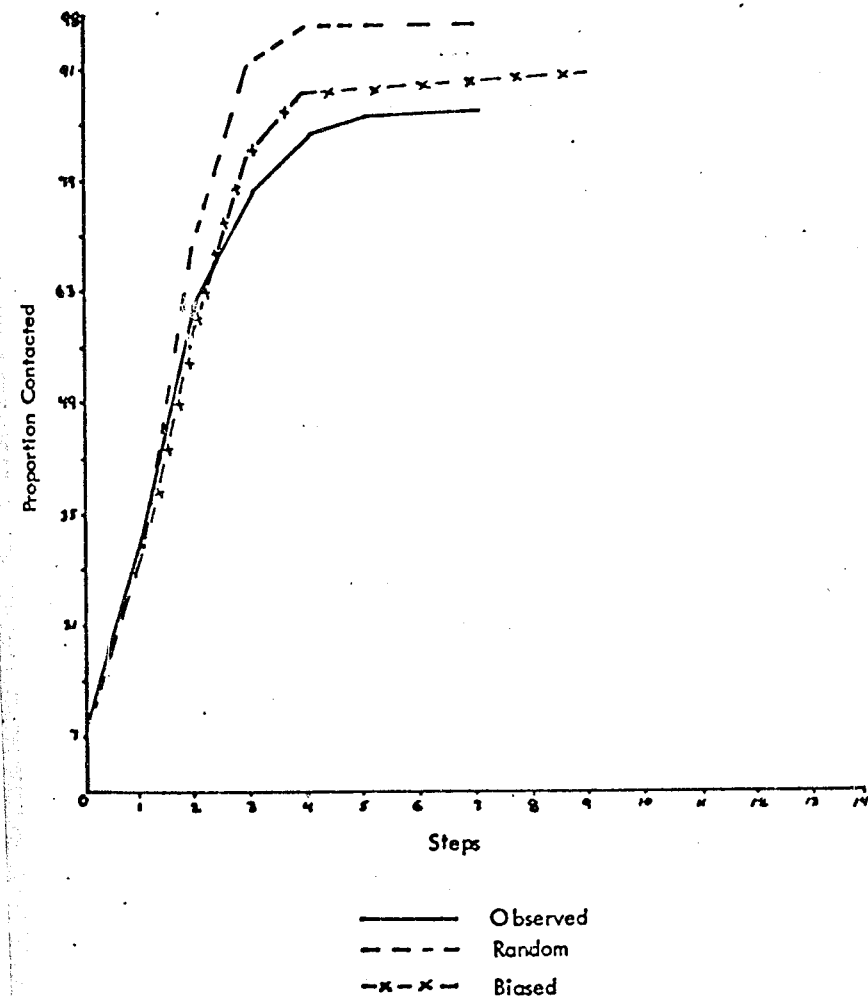


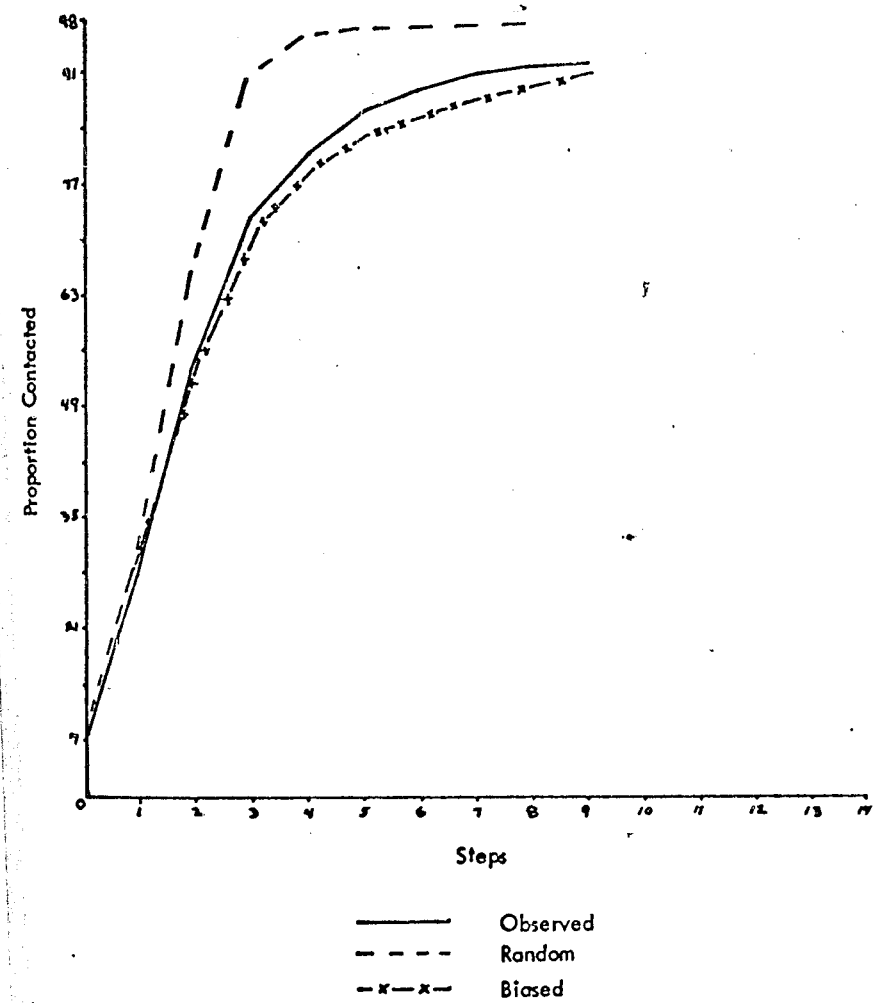
TABLE 5

OBSERVED AND THEORETICAL CUMULATIVE
PERCENTAGE OF PERSONS CONTACTED--B-3

Step (t)	X(t) Observed Average	X(t) Theoretical	
		Random	Biased
0	7.89	7.89	7.89
1	28.86	29.38	29.38
2	54.33	65.76	53.98
3	72.92	89.94	71.81
4	82.17	95.55	80.24
5	86.67	96.31	83.29
6	89.22	96.41	86.28
7	91.51	96.42	89.58
8	92.95	96.42	91.68
9	93.38		92.71
10			92.71

FIGURE 4

OBSERVED AND THEORETICAL CUMULATIVE
PERCENTAGE OF PERSONS CONTACTED--B-3



CONTINUED

2 OF 4

TABLE 6

OBSERVED AND THEORETICAL CUMULATIVE
PERCENTAGE OF PERSONS CONTACTED--B-4

Step (t)	X(t) Observed Average	X(t) Theoretical	
		Random	Biased
0	9.68	9.68	9.68
1	32.88	31.38	31.38
2	54.94	62.95	53.72
3	67.64	84.87	69.15
4	72.53	91.88	78.68
5	74.09	93.35	78.66
6	74.51	93.62	78.73
7		93.67	79.10
8		93.68	79.23
9			79.27
10			79.29
11			79.29

FIGURE 5

OBSERVED AND THEORETICAL CUMULATIVE
PERCENTAGE OF PERSONS CONTACTED--B-4

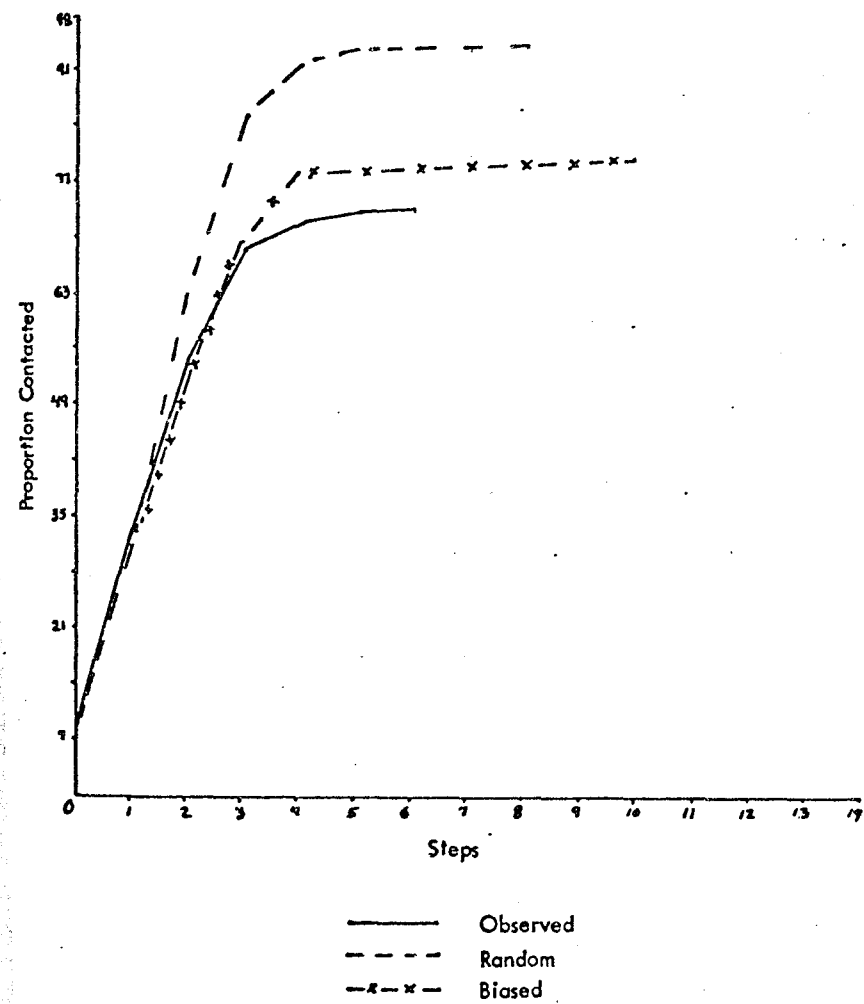


TABLE 7

OBSERVED AND THEORETICAL CUMULATIVE
PERCENTAGE OF PERSONS CONTACTED--B-5

Step (t)	X (t) Observed Average	X (t) Theoretical	
		Random	Biased
0	10.0	10.0	10.0
1	35.91	36.15	36.15
2	61.83	73.98	61.61
3	72.79	92.90	76.61
4	76.13	96.29	78.53
5	76.56	96.71	79.43
6		96.75	79.49
7		96.75	80.16
8			80.21
9			80.22
10			80.22

FIGURE 6

OBSERVED AND THEORETICAL CUMULATIVE
PERCENTAGE OF PERSONS CONTACTED--B-5

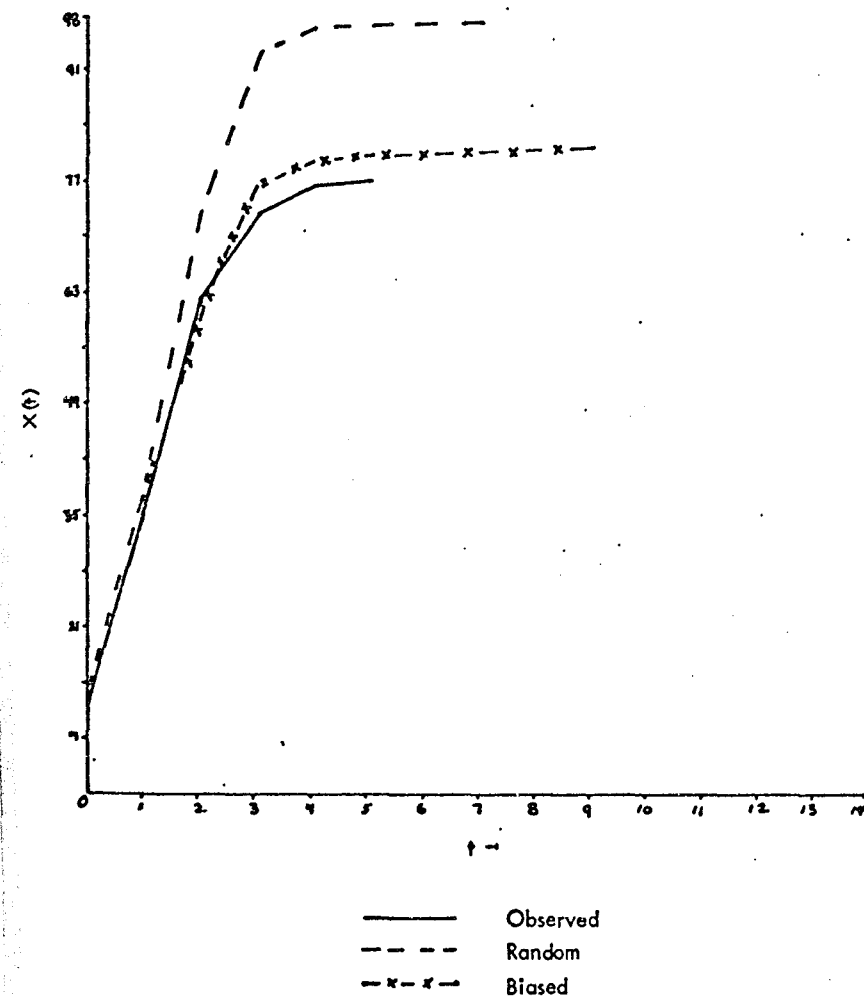


TABLE 8

OBSERVED AND THEORETICAL CUMULATIVE
PERCENTAGE OF PERSONS CONTACTED--B-6

Step (t)	X(t) Observed Average	X(t) Theoretical	
		Random	Biased
0	8.57	8.57	8.57
1	30.88	30.63	30.63
2	61.20	65.92	58.28
3	80.74	89.07	77.95
4	88.48	94.82	85.99
5	90.23	95.69	88.36
6	90.32	95.81	88.97
7		95.83	89.13
8		95.83	89.17
9			89.18

FIGURE 7

OBSERVED AND THEORETICAL CUMULATIVE
PERCENTAGE OF PERSONS CONTACTED--B-6

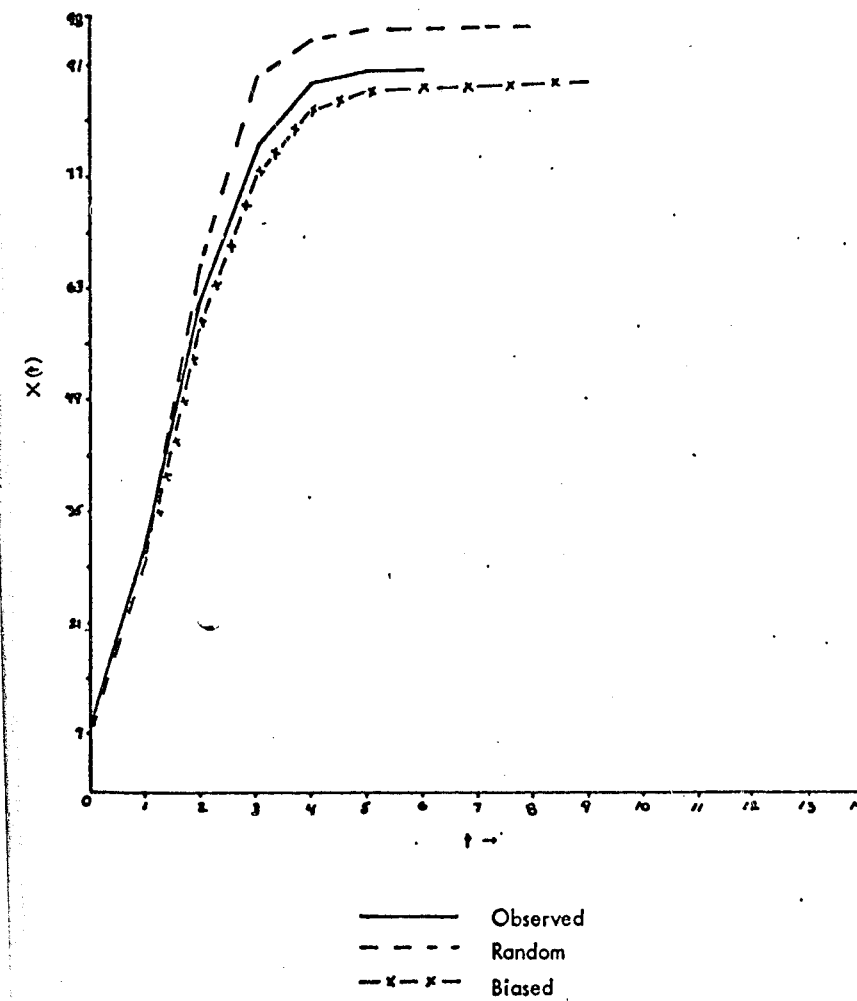


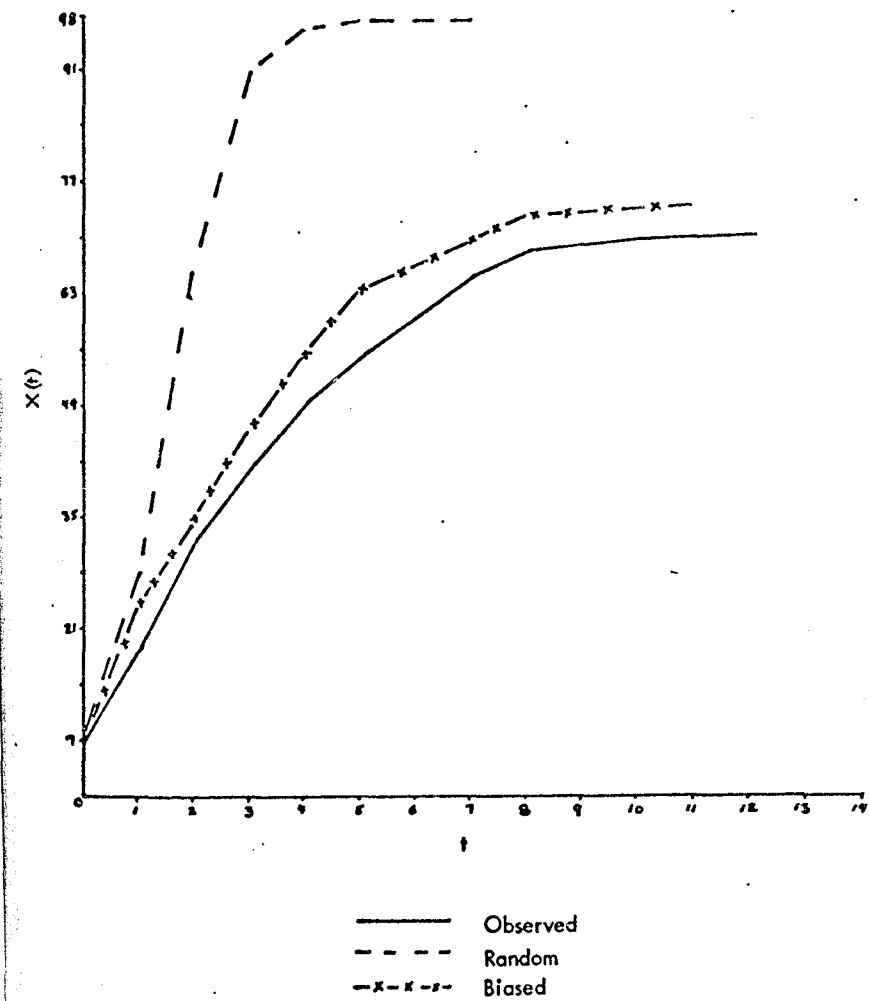
TABLE 9

OBSERVED AND THEORETICAL CUMULATIVE
PERCENTAGE OF PERSONS CONTACTED--B-7

Step (t)	X(t) Observed Average _t	X(t) Theoretical	
		Random	Biased
0	7.14	7.14	7.14
1	19.96	28.00	22.38
2	32.49	65.77	33.76
3	41.81	91.09	45.64
4	49.72	96.39	54.66
5	55.81	97.01	63.01
6	61.13	97.07	66.74
7	64.92	97.08	69.47
8	67.37		72.85
9	68.91		73.47
10	69.96		73.49
11	70.24		73.49
12	70.31		

FIGURE 8

OBSERVED AND THEORETICAL CUMULATIVE
PERCENTAGE OF PERSONS CONTACTED--B-7



than the corresponding bias parameters in the total net. We should note that not all subnets are equally divergent from the random model; however, we will attend to these differences when we consider the subnets individually. However, the percentage of persons contacted remains large in all the subnets, though it does vary as we will discuss; (3) The calculation of observed structure statistics for the subnets involved fewer steps than the total net. Thus, the total net extended to fourteen (14) steps while the mean for the subnets was 7.6 with a range of from five to twelve. This indicates that the "length" of the connectivity structure in the subnets is relatively short, suggesting a restricted structure within the subnets; (4) Finally, the mean upper limit of the observed structure statistics for the subnets (79.4) is lower than the upper limit of the total net (88%). However, there are three subnets whose observed structure statistics are approximately equal to or larger than (88%, 90%, and 93%) the total net and four subnets whose observed structure statistics are considerably lower (65%, 70%, 74%, and 76%) than the total net. These differences and others will be discussed in our consideration of each of the subnets.

The general subnet analysis leads us to conclude that because there is considerably more bias in the observed structure statistics than we would expect, and because the value of the upper limit of $X(t)$ is reached early in the range of potential steps, the subnets contain cohesive cliques that represent the basis of the structural analysis of the institution. The social structure of the institution does not operate at the total net level, nor does it appear that the entire subnet is unidimensionally structured. The connectivity analysis does indicate that a significant (but varying)

proportion of the subnet population is included in a structure of interactions but, at this point, there is no indication that these cliques within the subnets are related to each other (the inbreeding analysis would indicate just the opposite). The question of inter-subnet clique connection must be deferred until we more precisely define the subnet-cliques.

The variation in subnet structure statistics can be discussed in terms of these areas: (1) the percentage of the subnet contacted; (2) the number of steps to the upper limit of the observed percentage of persons contacted; and (3) the direction of error in the biased $X(t)$. Subnets B-2 (88%), B-3 (94%) and B-6 (90%) were the subnets with high levels of observed connectivity. In B-2 and B-6 the biased model underestimated the observed structure statistics, while in B-3 it overestimated the corresponding statistic. The calculation of the observed statistic ended after seven steps in B-2, nine steps in B-3, and six steps in B-6. These findings suggest a cohesive, nearly complete interactional structure. Subnets B-1 (65%), B-4 (75%), B-5 (77%), and B-7 (70%) exhibited lower connectivity structure statistics, though the number of steps to termination (8, 6, 5, and 12 respectively) correspond to those of the high connectivity subnets. With the exception of B-1 the biased model overestimated the observed statistics in these low connectivity subnets. These results suggest that these subnets contain small subnets or cliques of interaction, with the potential for clique structure to be characterized by the interlocking of related dyads and triads but without a dominant, subnet clique. Again the evaluation of these suggestions requires clique analysis. The analysis of the total net and the subnets has led us to emphasize the necessity for the clique analysis. The structure of

Interactions does not obtain at the total net level (the prevalence of subnet inbreeding) nor at the subnet level. The structure of the inmate society is, like most social organizations, based on smaller units. In Chapter Five, we will identify these units and the extent to which they are "organized" (i.e., connected by choices).

Subnets and Prisonization

The primary variations in the connectivity of the subnets are expressed in the inbreeding statistics and percentages of persons contacted. Our suggestion is that when there is high inbreeding and/or high percentage of persons contacted we have the potential for a social structure that corresponds to the form derived from the normative commitment position. Although we cannot evaluate the relationship between social structure and culture, we can estimate the relationship between inbreeding and maximum $X(t)$ and the level of prisonization. We are thus assessing the relationship between assumed measures of social structure and on measure of cultural commitment, responses to the prisonization scale. It must be emphasized again that at this point the structure statistics are only assumed to relate to a hierarchy of choices (i.e., a structure). It is possible that the connectivity derives from linked-pairs with little appreciable organization beyond the simplest form of social life. Our analysis of the relationship will be used only tentatively to add more substance to the connectivity analysis.

Table 10 presents the number and percentage of subjects in each cottage who we classified as defining self or others as highly prisonized. Contrary to previous

TABLE 10

NUMBER AND PERCENTAGE OF SUBJECTS SCORED AS HIGHLY PRISONIZED BY PRISONATION DIMENSION AND COTTAGE

Cottage	Dimension			
	Self		Other	
	N	%	N	%
B-1	7	21.9	22	68.9
B-2	11	30.6	29	80.6
B-3	13	34.2	31	81.6
B-4	9	28.1	22	68.8
B-5	9	30.0	13	43.3
B-6	13	37.1	22	62.9
B-7	20	47.6	28	66.7

research² we observe that the ordering proportions of self and other definitions are not consistent within cottages. The rank-order correlation between proportion of subjects designating self and other as highly prisonized is $-.11$. The corrected chi-square between subjects positions (either high or low) on the self and other dimensions is 7.79 $p > .01$. Our data indicate little relationship between self and other designation. This most likely reflects the lack of anonymity in our data collection. We will utilize the definition of prisonization in terms of "other" designations in most of our subsequent analysis. We do this because (1) it includes a larger

²For example, Hugh Cline, *The Determinants of Normative Patterns in Correctional Institutions* (unpublished Ph.D. dissertation, Harvard University, 1966).

proportion of the population; (2) if previous research is correct it should correlate with self designations in an anonymous data collection setting; and (3) the inclusion of more subjects within the high prisonization category is the condition most congenial to the normative-commitment model, which is in keeping with our attempt to provide the optimal setting for the testing of the normative model.

The connectivity analysis suggests two factors to relate to prisonization, namely the upper limit of the percentage of the subnet contacted and the observed level of inbreeding. The rank-order correlation between the proportion of "other" highly prisonized subjects and the proportion of the subnet contacted is $+ .29$, while the rank-order correlation between δ and the same measure of prisonization is $+ .79$. Though the order is determined by a small range of absolute scores, the conclusion these data support is that the higher the inbreeding (even within a limited range) the higher the level of prisonization, again suggesting the viability of a limited version of the normative model of prison organization. We are again led to the conclusion that the more cohesive a unit the more likely the level of prisonization will be high. The interactional cohesiveness of the unit and possibly the interaction structure, is related in ways as yet unspecified to the levels of prisonization within the unit. Clearly, the analysis of the structure of interaction within units and the relationship between those structures and prisonization must be assessed.

Conclusion

The connectivity analysis has demonstrated that the organization of friendship-choices in the total net do not correspond to the normative commitment model. There is the absence of reciprocated choices between living-units indicating

that the structure of choices is contained within the subnets. The subnet analysis suggests a relationship between prisonization and the level of inbreeding; however, the bias parameters suggest the absence of extended choice structures. Thus, the normative commitment model may be operative at the subnet level; however, the precise test of its applicability requires the consideration of the structure of choices within the subnets and the relationships between these structures and normative commitment. It is to the structure of choices that we now turn.

CHAPTER V

SUBNET CHOICE STRUCTURES

In the previous chapter we established that the relevant structural unit was not the total institution but rather the cottages or subnets. We further observed a strong positive relationship between the level of inbreeding within the cottages and the rank of the cottages' commitment to the inmate normative system. These findings were interpreted as : (1) a refutation of the perspective of a total social structure that is informed by a pervasive normative element; and (2) initial support for a modified normative position (i.e., the "minimal culture position") which would propose that within the relevant structural unit the level and hierarchy of commitment to the inmate normative system would support the perspective that culture and structure are highly correlated with the theoretical causal direction indicating the priority of the cultural elements. The analysis that follows will consider: (1) the subnets social structure as determined by reciprocated choices; (2) the levels of participation within the structures; and, (3) the relationship between inclusion within or exclusion from the structure and our measure of normative commitment and other subject characteristics. Again our main concern is the relationship between social structure (choice structure) and culture (level of normative commitment) as measured by the degree of explanation of the characteristics of the social structure contained in our knowledge of level of cultural commitment. We will, however, also explore other associations with the structural elements in order to further characterize the

determinants of the choice structure.

The Structure of Reciprocated Choices¹

In Chapter Four we suggested that the structure of reciprocated choices would most likely be very simple because of the low magnitude of the bias parameters. Our analysis of reciprocated choices supports our anticipation. Only in one case did we find a subnet circuit-arc (cottage B-2) and in all cases the observed structure contains large proportions of "chains" (i.e., series of single reciprocated choices unidirectionally linked to more frequently chosen clusters). Figures 1 through 6 depict the charted choice structures of cottages B-2 through B-7.

The most significant overall observations to be made on these structures are: (1) the large proportion of each cottage that is included within the choice structures (86, 58, 77, 74, 81 and 50 per cent respectively); (2) the fact that the rank order of these relative proportions does not correlate highly with the rank order of the inbreeding statistics (and therefore the rank order of proportion highly pruned $[r_b = .32]$); (3) the relative absence of reciprocated choices that are not included within the cottage choice structure (i.e., the fact that with the exception of B-7, the disciplinary cottage, those choices that are reciprocated are linked to other reciprocated choices in all but eight cases--one in B-2, five in B-3, zero in B-4, two in B-5, zero in B-6 and nine in B-7); and (4) the bifurcation of choice structures that are joined by only one or two subjects (this is most striking in the

¹In the following, B-1 is excluded from the analysis because the choice structure is not contained within the cottage as indicated by the low inbreeding parameters (see Chapter Four).

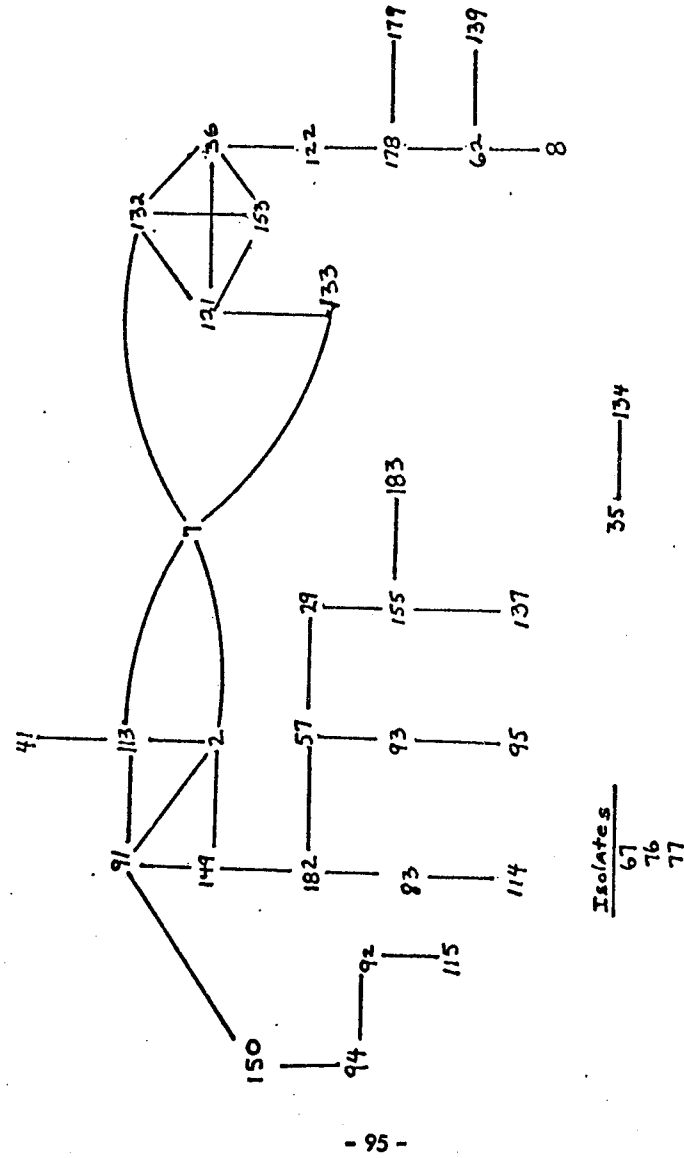


FIGURE 1

SUBNET RECIPROCATED CHOICE STRUCTURE: B-2

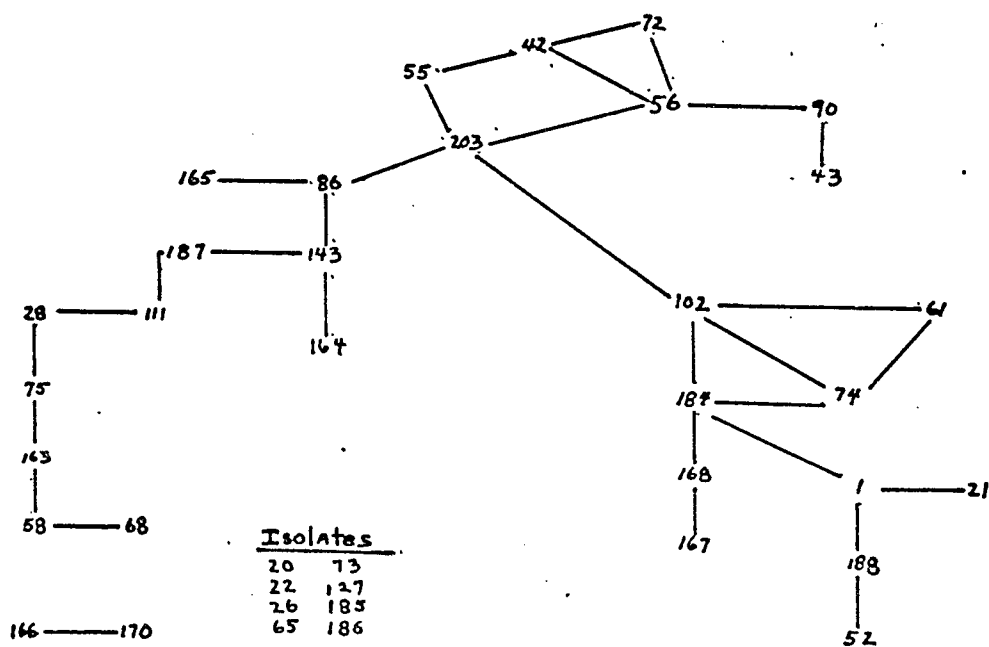
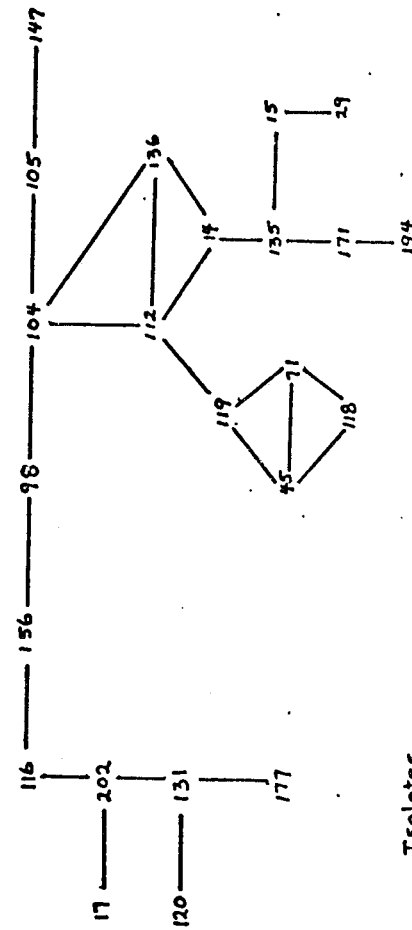


FIGURE 2

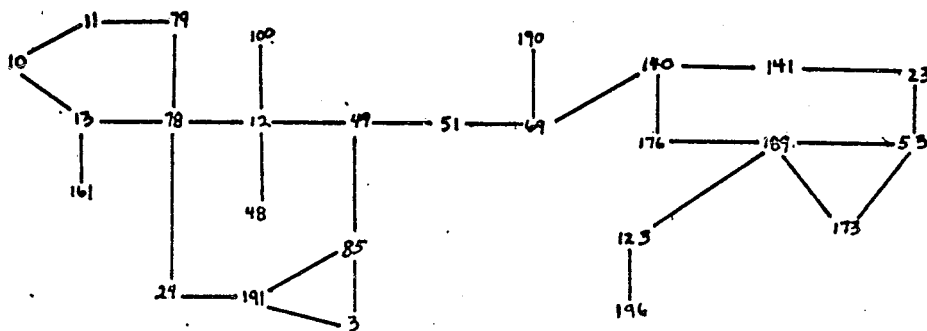
SUBNET RECIPROCATED CHOICE STRUCTURE: B-3



Isolates:
 47
 84
 151
 16
 46
 146
 95

FIGURE 3

SUBNET RECIPROCATED CHOICE STRUCTURE: B-4

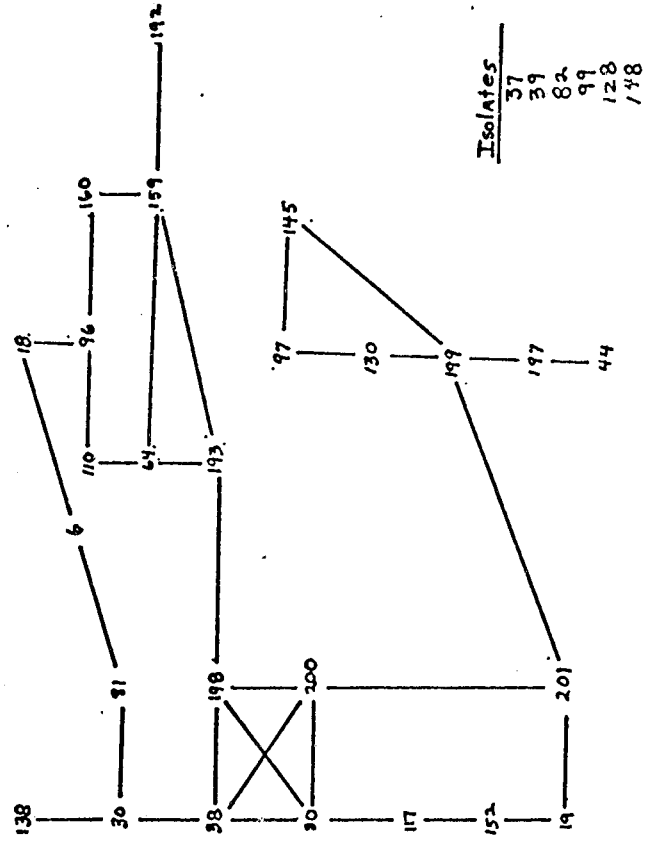


40 — 70 — 51

Isolates
 50
 60
 162
 172
 174
 175

FIGURE 4

SUBNET RECIPROCATED CHOICE STRUCTURE: B-5



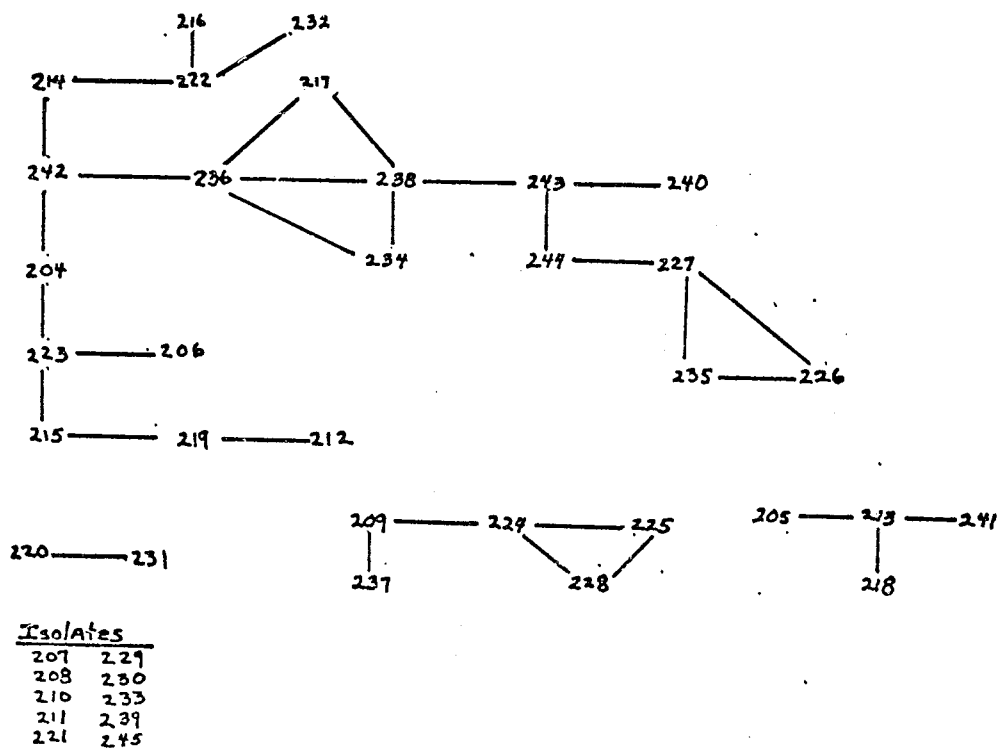


FIGURE 6

SUBNET RECIPROCATED CHOICE STRUCTURE: B-7

case of B-2 where the link is the circuit arc and is also apparent in B-3, B-5 and B-6, with B-4 and B-7 representing a more unidimensional structure). In sum, the choice structures, while comprehensive, are not complex. In Chapter Six we will consider further the differences within the choice structure (i.e., leaders vs. followers), however at this point we will consider the characteristics of all those within the choice structures (referred to in the following as the CM's) as compared to those isolated from that structure either by reason of their receiving no reciprocated choices (the pure isolate) or by reason of their reciprocated choices not being attached to the dominant choice structure (referred to in the following as the I's).

Clique Members and Isolates

Tables 1 and 2 present the observed relationship between self prisonization scores and other prisonization scores for CM's and I's. While the CM group has a higher percentage identifying themselves as highly prisonized (CM = 37.1%; I = 29.7%) the difference is small and when Table 1 is analyzed by use of tau-c no significant association is noted ($r_c = .144$).² The similarity between CM and

²Throughout this chapter and the following we will utilize tests of association and significance, in particular Kendall's tau and chi-square. This is done despite the fact that we are dealing with non-sample data and therefore might treat any difference between parameters as real differences. We propose, however, that we treat our population as a sample from an unknown universe and therefore suggest that testing is appropriate to determine the degree to which observed differences vary from those expected by chance. Therefore we accept Deming's position on the testing of population data (see W.E. Deming, "On the Distinction Between Enumerative and Analytical Surveys," *Journal of the American Statistical Association*, 48:262 (1953), 244-253). In Tables 1 and 2 we use tau as the hypothesis predicts an ordered relationship. In all cases the .05 level of significance is utilized.

TABLE 1

STRUCTURAL POSITION AND SELF PRISONIZATION LEVEL

Self Prisonization	Structural Position		Totals
	Clique Members (%)	Isolates (%)	
High	56 (37.1)	19 (29.7)	75
Low	95 (62.9)	45 (70.3)	140
Totals	151	64	215

$$r_b = .1440$$

N.S.

TABLE 2

STRUCTURAL POSITION AND OTHER PRISONIZATION LEVEL

Other Prisonization	Structural Position		Totals
	Clique Members (%)	Isolates (%)	
High	105 (69.5)	43 (66.7)	147
Low	46 (30.5)	21 (33.3)	57
Totals	151	64	215

$$r_c = .0196$$

N.S.

i group percentages in Table 2 demonstrates an even greater degree of similarity in the percentage of subjects whose "other" responses were scored as highly prisonized (CM = 69.5%; I = 66.7%). The tau-c for Table 2 ($r_c = .0196$) clearly indicates the absence of association between structural position and degree of normative commitment. Given our measure of structural position it is clear that it cannot be explained in our data by reference to the operation of the degree of commitment of the inmate to the normative component of the inmate culture. The normative model discussed in Chapter One cannot account for the absence of this relationship and therefore is clearly not an efficient basis on which to further orient our conceptualization of the inmate society. While it may be that leaders within the CM are more prisonized than non-leaders (an issue to be analyzed in Chapter Six), it is clear that the CM group does not differ from the I subjects along the normative dimension. Thus, there is the absence of support for even the minimal normative position that was tentatively suggested by the data of Chapter Four. The relationship between the level of inbreeding and the degree of prisonization is not explained by the relationship between clique membership and degree of prisonization.³ This is not to indicate that there are no useful dimensions upon which we can distinguish between CM's and I's, but rather that the relationship predicted by the normative model concerning the convergence of clique membership and high prisonization is not confirmed. The differences in structural position (i.e., CM or I) must be understood (given the

³At this point it may be necessary to note that we are treating prisonization as an independent variable. Our further analysis will consider alternative explanations of the dependent variable--choice structure.

limitations of our data) in terms of the subjects preinstitutional and/or institutional experiences.

All offense variables demonstrate that the CM group is characterized by a greater degree of violent crime and a more extensive delinquency career in comparison to the isolates. 31.7% of the CM's offenses were crimes of violence, while crimes of violence comprised only 11.9% of the I group's first offenses (Table 3).

TABLE 3

STRUCTURAL POSITION BY FIRST OFFENSE TYPE

Offense Type	Structural Position		Totals
	Clique Member (%)	Isolate (%)	
Violent	45 (31.7)	7 (11.8)	52
Property	77 (54.2)	22 (37.3)	99
Juvenile	20 (14.1)	30 (50.8)	50
Totals	142 ¹	59 ²	201

$$\chi^2 = 31.406 \quad p < .001 \quad C = .3675$$

¹9 unknown

²5 unknown

The I group committed proportionately less first property offenses than the CM group (37.3% and 54.2% respectively) and proportionately more first juvenile status offenses (50.8% to 14.1%). The chi-square associated with the joint distribution of structure type and first offense is 31.406 ($p < .001$) indicating a significant difference from the chance model, with the degree of association estimated at .3675 by the coefficient of contingency.

The same pattern emerges when we consider the offense for which the subject was placed in the institution (Table 4). 36.4% of the CM category and 15.6% of the isolates were committed for the commission of violent offenses, while 32.8% of the isolates and 28.5% of the CM's were committed for property offenses (the proportions for juvenile status offenses are again indication of the less serious nature of the isolates' offense histories) (35.1% = CM; 51.6% = I). Again, this association is significantly different from the expected model (chi-square = 9.7603, $p < .01$, $C = .2083$). In both offense measures the significant contribution to chi-square comes from the differences in the proportions of serious offenses committed by the CM category relative to the I group. This is particularly relevant since we are aware from other data that the probabilities for the commission of serious crimes are unaffected by increases in the number of offenses.⁴ This further emphasizes the extent of serious crime in the CM structural unit.

⁴We refer primarily to the findings of Sellin and Wolfgang that characterize delinquent careers as a single stage Markov Process. See Thorsten Sellin and Marvin Wolfgang, The Extent of Delinquency in an Age Cohort (forthcoming).

TABLE 4

STRUCTURAL POSITION AND CURRENT OFFENSE TYPE

Current Offense	Structural Position		Totals
	Clique Members (%)	Isolates (%)	
Violent	55 (36.4)	10 (15.6)	65
Property	43 (28.5)	21 (32.8)	64
Juvenile Status	53 (35.1)	33 (51.6)	88
Totals	151	64	215

$$\chi^2 = 9.7603 \quad p < .01 \quad C = .2083$$

The total number of offenses committed by the subject prior to the offense for which he was committed also reflects the more serious offense careers of the CM's as compared to the I's. Table 5 indicates the more extensive prior delinquency experience of the CM's as compared to the isolates ($\bar{X}_{cm} = 6.8$, $\bar{X}_i = 2.3$). The clique members with six or more offenses (31%) averaged 9.0 offenses per subject while the isolates with six or more offenses averaged 6.0. This relationship between structural position and number of offenses is significant as measured by chi-square (7.7625, $p < .05$, $C = .1824$).

TABLE 5

STRUCTURAL POSITION AND NUMBER OF PREVIOUS OFFENSES

Number of Offenses	Structural Position		Totals
	Clique Members (%)	Isolates (%)	
1 or less	17 (11.3)	12 (18.8)	29
2 - 5	98 (64.9)	44 (68.8)	142
6+	46 (30.5)	8 (12.5)	54
Totals	151	64	215

$$\chi^2 \quad 7.763 \quad p < .05 \quad C = .1824$$

It is important to note that the differences in the quality and quantity of the offense histories cannot be attributed to differences between the CM and I units with respect to the age of onset of delinquency. The CM and isolates had almost identical mean ages of onset (12.7 and 13.1, respectively), and when their ages of onset were dichotomized at the modal age (age 12) we observe remarkably similar distributions (Table 6, chi-square = .0004, $p > .95$). Therefore, the differences in the extensiveness and seriousness of the delinquency careers does not reflect differences in the length of their delinquent careers but the existence of real differences in career patterns.

TABLE 6

STRUCTURAL POSITION AND AGE OF ONSET

Age of Onset	Structural Position		Totals
	Clique Members (%)	Isolates (%)	
12+	106 (70.2)	45 (70.3)	151
11 or less	45 (29.8)	19 (29.7)	64
Totals	151	64	215

$$\chi^2 = .0004 \quad p > .95$$

When we consider the institutional experiences of the two groups, we observe that the CM's have served an average time of 9.5 months as compared to 7.4 months for the isolates. This indicates that inclusion into the cliques within the institution is associated with time served in a fashion that is closer to a linear than the curvilinear one suggested by Wheeler.⁵ The CM unit has, in addition to

⁵The failure to observe the curvilinear model postulated by Wheeler in our structural data is congruent with the absence of supportive replications in the literature. See Robert Archley and M.P. McCabe, "Socialization in Correctional Communities," *American Sociological Review*, 33 (1968), 774-785. These authors suggest that the key relationship to be explored in further studies is the relationship between conformity and interaction (p. 779). We have indicated above the absence of that relationship in our data.

offense history differences, more "seniority" within the inmate society.

The linearity of this relationship is further emphasized by the data on the subject's perception of the amount of time he has remaining to serve (Table 7).

TABLE 7

STRUCTURAL POSITION AND ESTIMATED TIME TO BE SERVED

Time to Serve (months)	Structural Position		Totals
	Clique Members (%)	Isolates (%)	
3 or less	45 (29.8)	15 (23.4)	60
4 - 6	58 (38.4)	22 (34.4)	80
7+	48 (31.8)	27 (42.2)	75
Totals	151	27	215

$$\chi^2 = 2.243 \quad p > .30$$

While the isolates estimate that they have more time to serve (42% of the isolates as compared to 32% of the CM's estimated that they had seven or more months time to serve) and the CM's that they have less time (30% of the CM's and 23% of the isolates estimate they have 3 or less months time to serve), the observed distribution does not differ significantly from the expected model (χ^2 -square = 2.242, $p > .30$).

This clearly indicates that the relationship between the last phase of Wheeler's curvilinear model of prisonization and social structure is not described by a curvilinear model indicating that individuals "reject" their role near the end of their time. On the contrary, the data support a linear model emphasizing the tendency for at least structural position to be held until the end of the time served.

Table 8 indicates the extent of previous institutional experience for the two structural positions. We observe a significant association between structural position and previous incarceration at Cedar Knoll, (chi-square = 7.3518, $p < .01$, $C = .257$). Of the CM's 25.8% have previously been incarcerated at Maple Glen and Cedar Knoll or Cedar Knoll only while 9.4% of the isolates have this form of

TABLE 8

STRUCTURAL POSITION AND PREVIOUS CEDAR KNOLL CONFINEMENT

Cedar Knoll Confinement	Structural Position		Totals
	Clique Members (%)	Isolates (%)	
Yes	39 (25.8)	6 (9.4)	45
No	112 (74.2)	58 (90.6)	170
Totals	151	64	215

$$\chi^2 = 7.352$$

$$p < .01$$

$$C = .257$$

placement history. The isolates were more likely to have served only at Maple Glen (27% as compared to 21% for the CM's). Thus, while the previous incarceration histories are similar, in the sense that over 50% of each category had not been at Maple Glen or Cedar Knoll, the difference that does exist emphasizes the extent of presocialization that occurs in the CM unit that may account for their ability to gain status during their current confinement.

This point, and the observations on offense patterns, is further emphasized when we consider the fact the CM and I units do not differ in terms of mean ages (CM = 15.9, I = 16.0), nor do they differ in terms of the number of previous correctional placements (Table 9, chi-square = 1.686, $p > .30$). While 58% of the

TABLE 9

STRUCTURAL POSITION AND NUMBER OF PREVIOUS CONFINEMENTS

Number of Confinements	Structural Position		Totals
	Clique Members (%)	Isolates (%)	
2+	26 (17.2)	13 (20.3)	39
1	46 (30.5)	14 (21.9)	60
0	79 (52.3)	37 (57.8)	116
Totals	151	64	215

$$\chi^2 = 1.67 \quad p > .30$$

I's and 52% of the CM's have had no previous incarcerations, 20% of the isolates had two or more incarcerations compared to 17% for the CM's. The clique members had slightly fewer average incarcerations than the isolates. Thus, it is not the differences in the quantity of previous commitments but their quality (i.e., exposure to Cedar Knoll) that is an element in the differentiation between clique members and isolates.

The homogeneity of the total population with regards to background characteristics discussed in Chapter Three is reflected in the fact that none of the background characteristics that were not related to delinquency history were found to be significantly associated with structural position. Tables 10 and 11 contain

TABLE 10
STRUCTURAL POSITION AND TIME RESIDED IN WASHINGTON, D.C.

Time Resided in Washington, D.C.	Structural Position		Totals
	Clique Members (%)	Isolates (%)	
Since Birth	124 (82.1)	51 (79.7)	175
1 - 6 years	11 (7.3)	9 (14.1)	20
7+ years	16 (40.6)	4 (6.2)	20
Totals	151	64	215

$$\chi^2 = 3.165 \quad p > .20$$

TABLE 11

STRUCTURAL POSITION AND FAMILY STATUS

Family Status	Structural Position		Totals
	Clique Members (%)	Isolates (%)	
Broken (with- out either parent)	39 (25.8)	16 (25.4)	54
Broken (with- out one parent)	74 (49.0)	26 (41.3)	100
Complete	38 (25.2)	21 (33.3)	61
Totals	151	64	215

$$\chi^2 = 2.056 \quad p > .30$$

the observed relationship between family status and time in Washington, D.C. and the structural position respectively.⁶ Visual inspection and chi-square tests indicate the absence of a significant relationship. The absence of significant relationships along these dimensions suggests that structural position can best be explained by reference to factors that are related to the subjects delinquency and institutional careers. While other background variables may prove useful, none of those collected

⁶These are selected for presentations as they most nearly approximated significant associations.

for our study were found to be of significant aid in differentiating between clique members and isolates. The institutional experience does not seem to include, however, current dimensions of the institutional experience. As Tables 12, 13 and 14 indicate, structural position (CM or I) is not significantly associated with average number of visits per month, job placement or average number of disciplinary actions per month. The variables we have been able to measure concerning the current institutional experience of the subjects do not allow us to distinguish between clique members and isolates. This again reflects the basic homogeneity of the "treatment" program as discussed in Chapter Three.

TABLE 12

STRUCTURAL POSITION AND AVERAGE NUMBER OF VISITS PER MONTH

Average Visits	Structural Position		Totals
	Clique Members (%)	Isolates (%)	
0	56 (43.7)	30 (46.9)	86
1	48 (31.8)	21 (32.8)	69
2 - 3	37 (24.5)	13 (20.3)	50
Totals	141	64	205

$$X^2 = 1.192 \quad p > .50$$

TABLE 13

STRUCTURAL POSITION AND INSTITUTIONAL JOB PLACEMENT

Job Placement	Structural Position		Totals
	Clique Members (%)	Isolates (%)	
Institutional Maintenance	35 (76.1)	20 (80.0)	55
Outside	11 (23.9)	5 (20.0)	16
Totals	46 ¹	25 ²	71

$$\chi^2 = .1418 \quad p > .80$$

¹105 without jobs

²39 without jobs

TABLE 14

STRUCTURAL POSITION AND AVERAGE NUMBER
OF DISCIPLINARY ACTIONS

Average Number of Disciplinary Actions	Structural Position		Totals
	Clique Members (%)	Isolates (%)	
3+	33 (21.9)	21 (32.8)	54
1 - 2	61 (40.4)	24 (37.5)	85
0	57 (37.7)	19 (29.7)	76
Totals	151	64	215

$$\chi^2 = 1.069$$

$$p > .50$$

Finally, we can consider the relationship between structural position and interpersonal maturity level. While we initially included this variable as an attempt to slightly expand our potential analytical abilities we were not able to generate a useful understanding of how this measure should be related to structural position (in the conformity model) because previous studies had not attempted to relate specific psychological dimensions to structural position. Table 15 indicates that this type of dimension is significantly associated with structural position and therefore may be relevant to a model of the organization of the correctional community. 33.8% of the CM's identify themselves as low in interpersonal maturity as compared to 17.2% of the isolates. The distributions are significantly different from the expected model

TABLE 15

STRUCTURAL POSITION AND INTERPERSONAL MATURITY LEVEL

Interpersonal Maturity Level	Structural Position		Totals
	Clique Members (%)	Isolates (%)	
Low	51 (33.8)	11 (17.2)	62
High	100 (66.2)	53 (82.8)	151
Totals	151	64	215

$$X^2 = 6.026 \quad p < .02 \quad C = .233$$

(chi-square = 6.026, $p < .02$, $C = .232$) indicating that the clique members are characterized to a significant degree in comparison to the isolates by a self description that has been found to be characteristic of the persistent subcultural delinquent.

Following the observation of zero-order significant associations it would be appropriate to explore multiple-order relationships. We are restricted in this endeavor by the size of N and our level of measurement. However, in order to consider the crucial association between prisonization and clique position we have analyzed this relationship holding constant one of the significant variables, length of time served. This control variable was selected because of its simplicity and because it could be used to generate comparisons containing enough cases for analysis (by using those above and below the median). In Tables 16 and 17 we compare clique members above and below the median for time served by self and other prisonization level. We observe that not only are the associations small and not significant, they are negative. This would suggest that length of time served is associated with structural position but that relationship becomes confounded when controls for time served are introduced. The substantively important finding is that controlling for time served does not alter the condition of no significant association between position and prisonization.

TABLE 16

STRUCTURAL POSITION, TIME SERVED AND SELF PRISONIZATION

Self Prisonization Level	Clique Members Above Median (%)	Clique Members Below Median (%)	Totals
High	24 (32.0)	32 (42.1)	56
Low	51 (48.0)	44 (58.9)	95
Totals	75	76	151

$$X^2 = -.101$$

N.S.

TABLE 17

STRUCTURAL POSITION, TIME SERVED AND OTHER PRISONIZATION

Other Prisonization Level	Clique Members Above Median (%)	Clique Members Below Median (%)	Totals
High	50 (66.7)	55 (72.4)	105
Low	25 (33.3)	21 (27.6)	46
Totals	75	76	151

$$X^2 = -.0570$$

N.S.

Conclusion

In this chapter we have demonstrated that the relationship between prisonization level and structural position cannot be accounted for by the normative model at the cottage or subnet level. The structural distinction between clique members and isolates is not related to levels of commitment to the inmate normative system; even when controls for time served are introduced, clique members are not differentiated by prisonization level. Structural position is significantly associated with the quality and quantity of the previous delinquency and incarceration history, length of current confinement and with the dimension of personality that has been observed to be characteristic of the persistent gang delinquent. Prisonization level as measured in the criminological literature is not associated with structural position. An adequate theoretical model of the inmate society cannot predict a convergence between high prisonization and membership in cliques. Rather, it is more likely that the understanding of prisonization and clique membership must be in terms of factors related to previous dimensions of delinquent and institutional histories which are of course interrelated. This will be explored in greater detail in Chapter Seven.

CHAPTER VI

LEADERS AND FOLLOWERS IN SUBNET CLIQUES

In this chapter we will consider the dimensions along which we can distinguish between those individuals who occupy apparent leadership roles in the cliques and those who do not. Our approach to the determination of leadership position is in terms of the number of reciprocated choices. In the following we will consider as leaders those who had three or four reciprocated choices ($N=54$, or 35.8% of the clique members) and as followers those who had only one or two reciprocated choices ($N=97$, or 64.2% of the clique members).¹ While previous sociometric studies of leadership have utilized the total number of choices received by the subject regardless of the reciprocal status of the choice (i.e., leadership = $\frac{\text{\# received}}{\text{total number}}$, with some proportion as a cutting point), we do not anticipate that our procedure would generate different leadership designations than the more traditional sociometric procedure because the mean number of choices received corresponds to the number of reciprocated choices. Thus, those with four reciprocated choices received an average of 6.2 choices, those with three reciprocated choices 5.8 choices, those with two reciprocated choices 2.9 choices, and those with one reciprocated choice 2.1 choices. This provides us with a further rationale for the

¹it should be clear that we are analyzing the components of the clique members category of the previous chapter. In this analysis we are considering relationships between the two types of clique members, leaders and followers.

cutting-point for the leader-follower dichotomy, as we note the similarity in the means for the three and four reciprocated choice subjects, and for the one and two reciprocated choice subjects. Furthermore, all "stars" (i.e., the person receiving the most absolute number of choices within each clique) were either three (2 of the "stars" $N = 8$ and 9) or four (four of the "stars" $N = 7$ and 9) reciprocated choice subjects. We are therefore convinced that the cutting-point represents real differences in reciprocated choice position, in relative choice position regardless of reciprocation and in absolute choice position. We will then consider the ways in which these two clique positions are related to the prisonization, offense, demographic and institutional variables considered in Chapter Five.

Table 1 displays the relationship between clique position and self prisonization. While 40.7% of the leaders as compared to 35.1 of the followers are classified as highly prisonized, the overall distribution shows significant ordered association ($r_c = .052$). However, when we consider the other prisonization scores as the determinant of prisonization level we do observe a significant ordered relationship between clique position and prisonization (Table 2, $r_c = .224$, $p < .05$), with 85.2% of the leaders classified as highly prisonized as compared to 60.1% of the followers. For the first time in our consideration of the relationship between structure and prisonization a significant association has been observed. It should be noted at this point that it is most likely that previous considerations of the relationship between inmate code and inmate social structure have been based upon a variant of the observation contained in Table 2. That is, the observations made by Schrag, Clemmer and Wheeler (see Chapter One) on the convergence between

TABLE 1

CLIQUE POSITION AND SELF PRISONIZATION LEVEL

Self Prisonization	Clique Position		Totals
	Leader (%)	Follower (%)	
High	22 (40.7)	34 (35.1)	56
Low	32 (59.3)	63 (64.9)	95
Totals	54	97	151

$$r_c = .052 \quad \text{N.S.}$$

TABLE 2

CLIQUE POSITION AND OTHER PRISONIZATION LEVEL

Other Prisonization	Clique Position		Totals
	Leader (%)	Follower (%)	
High	46 (85.2)	59 (60.1)	105
Low	8 (14.8)	38 (38.9)	46
Totals	54	97	151

$$r_c = .2238 \quad p < .05$$

popularity and prisonization reflect the fact we have just observed, namely that leaders exhibit response patterns that lead us to characterize them as highly prisonized. However, we must also note, as these previous authors have not, that other clique members do not exhibit similar response patterns and that the clique does not differ from the isolates (Chapter Five, Tables 1 and 2) in terms of the proportion of high prisonization response sets. The high prisonization response pattern is a characteristic of the leadership not the collectivity. As Garabedian, Wellford, and Schrag (see Chapter One) have previously observed, the level of prisonization is most highly correlated with the subject's offense and institutional experience prior to his instant commitment. If the collectivity does not exhibit a similar pattern of normative commitment, one might propose that the leadership position is not based upon the "prisonization level" of the leader but rather on those same dimensions that are the correlates of prisonization--prior offense and institutional history. While high prisonization may be characteristic of leaders it does not reflect the collectivities' sentiments and therefore may be interpreted as being independent of leadership determination, just as ideological position is subjugated in other organizational structures.

This focuses our attention on the prior offense, institutional and demographic history of leaders and followers. Tables 3, 4 and 5 consider the offense history of leaders and followers. All three distributions are significantly different from the expected model. Thus, in Table 3 we observe that the instant offense of leaders is less likely than followers to be a property offense (13.0% and 37.1% respectively) and more likely to be offenses involving violence (48.1% and 29.9%

TABLE 3

CLIQUE POSITION BY CURRENT OFFENSE TYPE

Offense Type	Clique Position		Totals
	Leader (%)	Follower (%)	
Violence	26 (48.1)	29 (29.9)	55
Property	7 (13.0)	36 (37.1)	43
Status	21 (38.9)	32 (33.0)	53
Totals	54	32	151

$$\chi^2 = 10.621 \quad p < .01 \quad C = .2562$$

respectively). Similarly, in Table 4 we observe that the first offense for leaders was in the majority of cases a violent offense (56.8%) while among followers the first offense was characteristically a property offense (67.0%). Thus, followers' previous offenses stand between leaders and isolates (Tables 3 and 4, Chapter Five) in terms of the proportion of violent first and current offenses. Finally, we observe in Table 5 the fact that leaders have a significantly more extensive delinquent career ($\bar{X}_L = 8.3$; $\bar{X}_F = 5.7$). Sixty-one per cent of the leaders had six or more offenses compared to 12.4% of the followers. The chi-square and contingency coefficient for Table 5 ($\chi^2 = 40.948$, $C = .463$) indicates the extent of the association,

TABLE 4

CLIQUE POSITION BY FIRST OFFENSE TYPE

Offense Type	Clique Position		Totals
	Leader (%)	Follower (%)	
Violence	29 (56.8)	16 (17.6)	45
Property	16 (31.4)	61 (67.0)	77
Status	6 (11.8)	14 (15.4)	20
Totals	51	91	142 ¹

$$\chi^2 = 23.8808 \quad p < .001 \quad C = .3793$$

¹ 9 unknown

CONTINUED

3 OF 4

TABLE 5

CLIQUE POSITION BY NUMBER OF PREVIOUS OFFENSES

Number of Offenses	Clique Position		Totals
	Leader (%)	Follower (%)	
1 or less	6 (11.1)	11 (11.3)	17
2 - 5	15 (27.8)	73 (75.3)	88
6+	33 (61.1)	12 (12.4)	46
Totals	54	97	151

$$\chi^2 = 40.9478 \quad p < .001 \quad C = .463$$

which given the absence of differences in age of onset, clearly demonstrates that leaders are a more serious delinquent category than followers and followers are more serious than isolates. Structural differentiation is clearly and strongly associated with the delinquent history of the subjects.

Leaders and followers have essentially the same institutional history at Cedar Knoll as evidenced by Table 6. Twenty-six per cent of the leaders and 25.8% of the followers had previously been placed at Cedar Knoll ($\chi^2 = .0004$, $p > .95$). However, the two structural positions differ with regards to the amount of time currently served. Followers had served an average of 8.6 months while leaders had averaged 11.1 months at Cedar Knoll during the current confinement. The

TABLE 6

CLIQUE POSITION BY PREVIOUS CEDAR KNOLL CONFINEMENT

Previous Cedar Knoll Confinement	Clique Position		Totals
	Leader (%)	Follower (%)	
Yes	14 (26.0)	25 (25.8)	39
No	40 (74.0)	72 (74.2)	112
Totals	54	97	151

$$\chi^2 = .0004 \quad p > .95$$

differences in time served are reflected in the amount of time expected to serve. Thirty-four per cent of the leaders and twenty-two per cent of the followers estimated that they were in the last phase of their institutional career (i.e., three or less months to serve).

The other dimension that differentiated between clique members and isolates was interpersonal maturity level. Table 7 indicates that leaders and followers do not distribute themselves significantly differently in terms of high or low interpersonal maturity levels. Thirty-four and 33.3% of followers and leaders respectively were scored as low on interpersonal maturity. Thus, while this dimension accounts for a degree of the variance in clique membership it does not account for structural differentiation within cliques.

TABLE 7

CLIQUE POSITION BY INTERPERSONAL MATURITY LEVEL

Interpersonal Maturity	Clique Position		Totals
	Leader (%)	Follower (%)	
Low	18 (33.3)	33 (34.0)	51
High	36 (66.7)	64 (66.0)	100
Totals	54	97	151

$$\chi^2 = .0088 \quad p > .90$$

All other variables were found not to be significantly associated with structural position and will not be displayed. Again, the homogeneity of the population relative to non-delinquency related measures and the content of the current institutional experience further focuses our analytical considerations on the dimensions that relate to the quality and quantity of delinquency and institutionalization as sources of explanation of structural position, clique membership and normative commitment.

Conclusions

The substantive conclusions that emerge from our consideration of the data presented in Chapters Four, Five and Six may be summarized as follows:

1. There is absence of a complete system social structure as measured by the degree of subnet inbreeding and exogeneous reciprocated choices
2. There is a large proportion of subjects who are characterized as perceiving the inmate society as highly prisonized (68%)
3. Reciprocated choices within subnets are organized into simple clique structures
4. The level of commitment to the inmate normative system does not vary significantly between those subjects in cliques and those subjects excluded from cliques
5. Previous offense, previous institutional history, length of confinement and interpersonal maturity provide dimensions upon which significant differences occur when comparing clique members and isolates
6. Leaders and followers within cliques differ significantly in regards

to their level of other prisonization with leaders more highly prisonized than followers

7. Leaders have more extensive and serious delinquent careers than followers
8. Leaders have served a longer period of time than have followers
9. Leaders and followers do not differ with regard to interpersonal maturity or demographic characteristics.

This has lead us to conclude that the organization of the inmate social structure is not determined by a commitment to a normative system that is opposed to the formal organization's norms, but rather that the inmate social structure is organized by the norms evident in the subject's previous histories, namely, the norm of violence, coercion and subcultural involvement.

If this is a valid position, we should be able to observe that the collectivity differs along the criminalistic dimensions and not the normative. That is, followers should in comparison to isolates exhibit more serious delinquent and institutional careers than isolates but should not differ with regards to prisonization level. As Tables 8 through 14 indicate these anticipations are substantiated by the data.

TABLE 8

STRUCTURAL POSITION BY SELF PRISONIZATION LEVEL:
FOLLOWERS AND ISOLATES

Self Prisonization Level	Structural Position		Totals
	Follower (%)	Isolate (%)	
High	34 (35.1)	19 (29.7)	53
Low	63 (64.9)	45 (70.3)	108
Totals	97	64	161

 $r_c = .051$

N.S.

TABLE 9

STRUCTURAL POSITION BY OTHER PRISONIZATION LEVEL:
FOLLOWERS AND ISOLATES

Other Prisonization Level	Structural Position		Totals
	Follower (%)	Isolate (%)	
High	59 (60.8)	43 (67.2)	102
Low	38 (39.2)	21 (32.8)	59
Totals	97	64	161

 $r_c = -.061$

N.S.

TABLE 10

STRUCTURAL POSITION BY FIRST OFFENSE TYPE:
FOLLOWERS AND ISOLATES

Offense Type	Structural Position		Totals
	Follower (%)	Isolate (%)	
Violent	16 (17.6)	7 (11.9)	23
Property	61 (67.0)	22 (37.3)	83
Status	14 (15.4)	30 (50.8)	44
Totals	91 ¹	59 ²	150

$$\chi^2 = 21.8316 \quad p < .001 \quad C = .3563$$

¹6 unknown

²5 unknown

TABLE 11

STRUCTURAL POSITION BY CURRENT OFFENSE TYPE:
FOLLOWER AND ISOLATE

Offense Type	Structural Position		Totals
	Follower (%)	Isolate (%)	
Violent	29 (29.9)	10 (15.6)	39
Property	36 (37.1)	21 (32.8)	57
Status	32 (33.0)	33 (51.6)	65
Totals	97	64	161

$$\chi^2 = 6.7378 \quad p < .05 \quad C = .2002$$

TABLE 12

STRUCTURAL POSITION BY NUMBER OF OFFENSES:
FOLLOWER AND ISOLATE

Number of Offenses	Structural Position		Totals
	Follower (%)	Isolate (%)	
0 - 1	12 (12.4)	12 (18.8)	24
2 - 5	73 (75.2)	44 (68.8)	117
6+	12 (12.4)	8 (12.4)	20
Totals	97	64	161

$$\chi^2 = 1.2776 \quad p > .50$$

TABLE 13

STRUCTURAL POSITION BY PREVIOUS CEDAR KNOLL CONFINEMENT:
FOLLOWER AND ISOLATE

Previous Cedar Knoll Confinement	Structural Position		Totals
	Follower (%)	Isolate (%)	
Yes	25 (25.8)	6 (9.4)	31
No	72 (74.2)	58 (90.6)	130
Totals	97	64	161

$$\chi^2 = 6.6685 \quad p < .01 \quad C = .1992 \quad \chi^2_{\text{yates}} = 5.656$$

TABLE 14

STRUCTURAL POSITION BY INTERPERSONAL MATURITY LEVEL:
FOLLOWER AND ISOLATE

Interpersonal Maturity Level	Structural Position		Totals
	Follower (%)	Isolate (%)	
Low	33 (34.0)	11 (17.2)	44
High	64 (66.0)	53 (82.8)	117
Totals	97	64	161

$$\chi^2 = 5.501 \quad p < .05 \quad C = .1816 \quad \chi^2_{\text{yates}} = 4.6864$$

Thus, we observe:

1. No difference between followers and isolates with regards to self or other prisonization ($\tau\text{-c} = .051$ and $-.061$ respectively)
2. Significant differences between followers and isolates with regards to first offense and current offense type ($\chi^2 = 21.832$, $p < .001$, $C = .3563$ and $\chi^2 = 6.7378$, $p < .05$, $C = .2002$ respectively)
3. The offense distribution differences illustrate the more serious and violent offenses of the followers (84.6% the followers first offenses and 67.0% of the current offenses were non juvenile status offenses; 17.6% and 29.9% of the followers' first and current offenses were violent offenses) as compared to the isolates (in both first and current offense the modal category for isolates is the juvenile status offense type)
4. There is no significant difference between followers and isolates with regards to the number of offenses ($\chi^2 = 1.2776$, $p > .50$)
5. Followers differ significantly from isolates with regards to their previous Cedar Knoll experience (25.8% of the followers and 9.4% of the isolates had a previous Cedar Knoll Commitment-- $\chi^2 = 6.6685$, $p < .01$, $C = .1992$)
6. Followers and isolates differ significantly with regards to interpersonal maturity ($\chi^2 = 5.501$, $p < .05$, $C = .1816$), 34.0% of followers and 17.2% of isolates occupy low interpersonal maturity levels.

Prisonization level does not account for the fact of being classified as an isolate or a follower, rather, in our data offense, institutional and psychological dimensions characterize the inhabitants of those positions.

CHAPTER 7

CONTACT AND COMMITMENT

Introduction

The criminological literature on the social organization of inmate communities, including the current study, has assumed that in informal social organizations the basis of organization (normative and structural) must be "collective sentiments" or a "legitimate" order. If this condition of value solidarity was not observed we proposed the inmate community could best be characterized by a conflict model emphasizing diffuse structure and conflict between inmates. The literature has focussed upon a very narrow consideration of the contents of the normative component--the concept of prisonization. The data presented in Chapters Four, Five and Six clearly indicate that the traditional conception of the normative component in inmate communities does not differentiate between those within and outside of the relevant social structure. In the following discussion we will consider the bases of adolescent delinquents organizations and relate this to our emergent consideration of the organizing principles of the inmate society.

Cognition and Behavior

Social scientists have been, as noted in Chapter One, enamoured with the relation between subjective orientations and behavior at both the individual and collective levels. There is a significant body of research that suggests that this is

not as relevant an association as we have theorized, except in orientational extremes (belief and withdrawal). The findings discussed in the earlier chapters replicate the often noted lack of association between cognitive dimensions (e.g., attitudes of individuals and group norms as expressed in responses to data stimuli), and behavior (in our case the collective "acts" that result in our assessment of social structure). In this section we will review some of the major findings in these studies in order to identify an alternative analytical strategy for our consideration of the inmate society.

The lack of association between attitude and actions at the individual level was first observed by La Piere.¹ In that classic study, La Piere observed that not only was there no positive relationship between what one said they would do and what they did but in fact there was a high negative relationship. Irwin Deutscher, who has reviewed all of the similar research since La Piere, has concluded: "no matter what one's theoretical orientation may be, he has no reason to expect to find congruence between attitudes and actions and every reason to expect to find discrepancies between them."²

In a recent study Warner and De Fleur have attempted to identify factors that are relevant to an understanding of the absence of association between attitudes and behavior.³ They observe that attitudes and actions coincide only under

¹R. La Piere, "Attitudes and Action," *Social Forces*, 13 (1934), 230-237.

²I. Deutscher, "Words and Deeds," *Social Problems*, 13 (1966), 247.

³L.G. Warner and M. DeFleur, "Attitude as an Interactional Concept," *American Sociological Review*, 34 (1969), 153-169.

the conditions of supportive situational factors. Thus, their analysis of discrimination suggests that the visibility of the action and the social distance between the actor and the recipient of the action are dimensions that are specific to the action situation that cause lack of congruence between attitudes and action.⁴ They account for error in prediction of behavior at all levels of attitudes toward discrimination depending upon the orientation of the situation in which the action occurs. It is then the demand characteristics of the situation that intervenes between attitudes and action to produce the absence of congruence.

The boundaries of this issue are not as clear at the collective level for as Allport noted most forcefully (and we echoed in Chapter One) collectives have frequently been defined in terms of only the normative component without reference to behavioral elements (e.g., the structure of the collectivity).⁵ Therefore there is generally no testing of this relationship and the normative element is analyzed apart from its observable consequences in behavior. In addition, behavioral uniformity is frequently interpreted as evidence of "underlying" subjective orientations that account for the uniformity in behavior and the absence of "collective sentiments" indicates a condition of social disintegration (i.e., anomie and/or

⁴Those who refuse to give-up the concept of attitudes frequently revert to the "attitude toward the situation being more relevant than the content of the attitude" when confronted with this type of evidence. See M. Rokeach, Beliefs Attitudes and Values (San Francisco: Jossey-Bass, 1968), p. 127.

⁵F. Allport, "A Structuronomic Conception of Behavior," Journal of Abnormal and Social Psychology, 64 (1962), 1-30.

conflict).⁶

In a recent analysis of the bases of group integration Feldman has, following an extensive review of the previous theoretical and empirical efforts, concluded that three major dimensions of group integration are identifiable.⁷ These are normative integration, functional integration and interpersonal integration. Normative integration refers to the existence of rules that govern behavior. Functional integration refers to the existence of interdependent roles. Interpersonal integration refers to reciprocal liking of group members for one another. It is clear that our study has been concerned with these three bases, though we have not dealt extensively with the functional mode (only in terms of our distinction between leaders and followers). Table 1 (from Feldman) contains the correlation between these three measures for 568 males, 9-16 years of age comprising 61 groups in summer camps in 1965 in the state of Michigan.

We observe that the only significant (at the .05 level) correlation is between functional integration and interpersonal integration, both of which refer to characteristics of structural cohesiveness. Normative integration (e.g., prisonization) and interpersonal integration (e.g., social structure position--though Feldman measured it only by reference to degree of liking other members not the structure of these "likings") correlate at $+ .24$ which was not significant ($r^2 =$

⁶See discussion in Chapter One.

⁷R.A. Feldman, "Interrelationships Among Three Bases of Group Integration," *Sociometry*, 31 (1968), 30-47.

.0576). Our contention and findings regarding the absence of association between prisonization and social structure is supported by data from a non-delinquent setting, and supports the position that collective structure and norms are not co-terminus. Groups exist that are not normatively organized.

TABLE 1

PRODUCT-MOMENT CORRELATIONS FOR INTERRELATIONSHIPS
AMONG THREE TYPES OF GROUP INTEGRATION

Types of Integration	r	Sig.
Functional-Interpersonal	.51	<.001
Normative-Interpersonal	.24	N.S.
Normative-Functional	.14	N.S.

Criminologists have come to recognize this fact in other areas but, as indicated in Chapter One, have not recognized this with regards to the inmate society prior to this research. In the study of another collectivity of law violators, the delinquent gang, we are now aware that the gang is not normatively distinguishable from nondelinquent collectivities although it is obviously behaviorally different. Short and Strudbeck have observed that delinquent gang members and nondelinquents (similar with regards to class position, race, age and region of the city) evaluate prescriptive norms in the same way.⁸ Empey and Lubeck have concluded from their

⁸J. Short and F. Strudbeck, Group Processes and Gang Interaction (Chicago: University of Chicago Press, 1965), pp. 47-77.

research in Los Angeles and Utah that "delinquent and nondelinquent, rural and urban, youth appraise situations (involving officially disvalued behavior) from some common perspectives."⁹ Matza, in a summative, theoretical analysis states that "there is a subculture of delinquency but it is not a delinquent subculture,"¹⁰ to express his contention that delinquent gangs are not unified by and focused on a coherent and pervasive normative structure although they exhibit behavioral conformity. While gang members exhibit behavioral uniformity this cannot be attributed as "subcultural theories" propose, to the operation of social facts.

In a recent analysis Stratton has documented in a prison setting (N=351) the absence of significant association between prisonization and associations, using a measure of prisonization similar to that described in Chapter Three and an associational preference scale that included items concerning post institutional friendships with other inmates.¹¹ These factors were intercorrelated and correlated with attitudes towards violation of the law and extent of identification with criminal values. The major results of Stratton's study are summarized in Table 2. The inmate loyalty and association variables are not significantly correlated ($r = .14$), and inmate loyalty does not correlate significantly with any of the other variables. This

⁹L. Empey and S. Lubeck, "Conformity and Deviance in the Situation of Company," *American Sociological Review*, 33 (1968), 766.

¹⁰D. Matza, *Delinquency and Drift* (New York: John Wiley, 1964), p. 33.

¹¹J. Stratton, "Differential Identification and Attitudes Toward the Law," *Social Forces*, 46 (1967), 256-263.

TABLE 2¹INTERCORRELATIONS OF REFERENCE GROUP INDICES AND
ATTITUDES TOWARD LAW VIOLATIONS²

	Criminal Identification	Associational Preference	Inmate Loyalty
Associational Preference			
Auto	.27 ³		
Other	.21		
Inmate Loyalty			
Auto	.03	.14	
Other	.06	.15	
Law Violation			
Auto	.34 ³	.41 ³	.06
Other	.48 ³	.37 ³	.04

¹Reprinted from J. Stratton, "Differential Identification and Attitudes Toward the Law," *Social Forces*, 46 (1967), 260.

²Auto offenders = 272; Other = 79.

³Significantly different from zero at .01 level.

reflects our finding concerning the absence of association between prisonization and clique membership.

At the collective level there is the recognition, though it is less visible and readily agreed to than at the individual level, that structures need not be organized by normative orientations. Though this seems to be contrary to the very basis of the traditional sociological approach to the understanding of the effect and organization of informal collectivities we will suggest that this represents a simple, reductionistic conception of the explanation of behavior--one that must be discarded

In order to develop more viable conceptual tools.

Culture and Social Structure

Within a particular mode of conceptualization is accepted apriorily that human events must be explained by reference to systems of explanation that are related to each other, in the sense that they are mutually influenced, but cannot explain all the variation in each other. Thus cultural, social and personality systems are conceived to consist of analytically separate and interacting components. Thus, there can be no systemic reductionism (each system has internalities that cannot be explained by reference to other systems) nor can there be mere eclecticism (the systems are externally related). Therefore culture and structure should not be congruent (they may be in conflict), though they are related, as the analysis of the two involves the analysis of two internalities¹²

In this theoretical mode culture refers to normative statements (generously prisonization) and structure refers to the organization of society (generously our choice structure). The structural system refers to the distribution of power in the analysis of Weber, Dahrendorf, Parsons and Rieff. Power in organizations can have a variety of foundations. French and Raven have suggested that these are: (1) coercive power, (2) reward power, (3) expert power, (4) legitimate power, and (5) referent power (identification).¹³ Warren has formulated the following

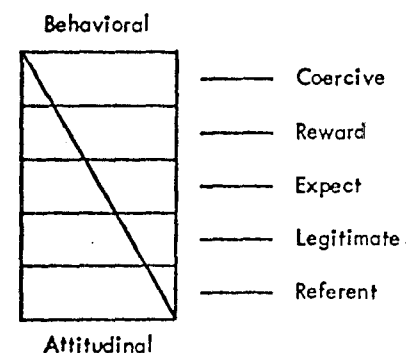
¹²The most concise statement of this position is found in A.L. Kroeber and T. Parsons, "The Concepts of Culture and of Social Systems," American Sociological Review, 23 (1958), 582-583.

¹³J.R. French and B. Raven, "The Bases of Social Power," in Dorwin

association between power base, behavior and attitudes:¹⁴

FIGURE 1

PREDICTED RELATIONSHIP BETWEEN POWER BASE
AND TYPES OF CONFORMITY



The condition of coercive determination of power is associated with behavioral conformity and attitudinal independence.

The inmate culture (the elements of prisonization) represents a peculiar moral ideal. As Sykes and Messinger have suggested the underlying dimension of the inmate culture involves admonitions to reduce the degree to which inmates cause trouble for each other.¹⁵ The culture does not prescribe positive goals but rather

Cartwright and A. Zander (eds.) Group Dynamics (Evanston: Row, Peterson, 1960) pp. 607-623.

¹⁴D. Warren, "Power, Visibility, and Conformity in Formal Organizations," American Sociological Review, 33 (1968), 955.

¹⁵G. Sykes and S. Messinger, "The Inmate Code," in Theoretical Studies in the Social Organization of Prison (New York: Social Science Research Council, 1963).

establishes only a proscriptive (do not inform on another inmate), defensive system. The literature on the normative element stresses loyalty to self not to each other. The inmate culture may just as easily be conceptualized as a divisive factor as a unifying one. Culture as proscriptive would suggest, to the extent that it penetrates and is penetrated by the social system, a potential for unstable, and/or conflicting social structure.

The inmate social structure (as measured by patterns of reciprocal choices) is fragmented by residential propinquity. It contains only 70% of inmates with 30% being isolates. Prisonization level does not differentiate between those within and outside of structures, though leaders are more prisonized than followers. Those within structures are characterized, relative to isolates, primarily in terms of involvement in more violent and extensive delinquent histories, more previous time served at Cedar Knoll, and a personality configuration similar to the subcultured delinquent.

These characteristics of culture, structure and actors cannot be explained by reference to a conformity or conflict model (as discussed in Chapter One) but rather must be understood by reference to a more elaborate model.

The Prison Community

We begin with the assumption (untested) that the inmate culture is best characterized by the elements of prisonization (68% characterize others as highly prisonized). We need not now postulate a subculture of violence within the prison community. However we recognize that this does not determine social structure nor does it correlate with positions in social structure. In fact, we propose it is a divisive

force that would, if only it operated, create a completely controlled but unrelated society.

The social structure develops in a condition of minimal inputs from the culture system and minimal input from external systems.¹⁶ In such a condition we would expect that coercion could be the sole basis of power and that therefore we could expect high behavioral conformity but low attitudinal conformity (self prisonization).¹⁷ In the prison community, as in the delinquent gang, coercion is real in the sense it refers to ability and willingness to engage in conflict. Our data strongly suggests that the basis of the social structure is coercion, not legitimation, reward, expertness or referent.

In the inmate society, as in the non-inmate society, culture and structure are analytically separate and any attempt to explain one by reference to the other (reductionism) must be inadequate. Rather than continue as culture reductionists those concerned with the nature of the prison community should focus on more refined understandings of the social structure and how it is related to the inmate culture.

¹⁶The major external system would be the administrative structure. We did not consider this in our data collection, however, we were aware of its significance and are now only re-awakening this recognition.

¹⁷This suggests that the observed absence of relationship between self and other prisonization may not be artifactual as suggested in Chapter Four.

APPENDIX A

THE CONNECTIVITY ANALYSIS PROGRAMS

Original programmers: T.J. Fararo and Satish Seth (AUTOCODER)
Translated to FORTRAN BY : C.F. Wellford and F.C. Praeger

I. CONTENTS OF THE PACKAGE

The decks are numbered from one to five. Deck one is the data deck for the Cedar Knoll net study utilized in this study. Decks two through five are various programs.

DECK 2	Net Tracing Program
DECK 3	Parameter Estimation for Nets
DECK 4	Higher Order Bias Estimate
DECK 5	Full Tracing Formula

All programs are written in FORTRAN IV and were tested and run on the IBM 360/65 of the University City Science Center.

II. DATA INPUT (DECK 1)

Each person (node) is assigned a three digit number such that each person in the population is uniquely defined and the range of numbers is consecutive from 1-N, with a maximum $N=999$. The node identification number is punched in columns 1-3. This is followed by up to 10 three digit choices (targets) of the node (columns 4-33). Columns 34 (designated A variable) and 35 (designated B variable) can contain dichotomized information

(punch = 0 or 1) on the node and column 36 (designated C variable) a trichotomized variable (punch = 0, 1 or 2). Columns 37-80 are blank. The data in columns 34, 35 and 36 are utilized for subnet analysis.

Example. Let person 76 (lead zeroes do not have to be punched but all node identifiers of less than three digits are right-justified within their three column fields) have as his six targets 1, 143, 232, 161, 34 and 124. Suppose also that he has the values $A = 1$, $B = 0$, $C = 2$. Then his card is punched as:

_76__1 143 232 161 _34 124 (Blank to 34) 102 (Blank to 80)

III. NET TRACING PROGRAM

The program operates over the stored data to perform a set of empirical tracings as described in Chapter Two. It will also do subnet tracings. Control cards are set by the user for the density, level and subnet (if any) desired for analysis. Additional parameters are manipulable by the user in a similar manner.

A. Input decks and orderings:

DECK 2

/ *

GOSYSIN

N Card

DATA

Problem Card

/ *

N - Card format:Col.Description

1 - 5

Right justified odd integer to generate random number sequence. Each different odd integer generates a different sequence.

8 - 10

Population of total net.

11 - 80

Blank

Problem - Card format:Col.Description

1 - 2

Contact density from 1 - 10.

3 - 4

Number of starters.

5 - 7

Population of total net.

8 - 9

Level from 1 - 10.

Let L = level, then,

L = 0 begin with first target

L = 1 begin with second target

L = 10 begin with tenth target

10

Blank

11 - 15

Minimum number of samples.

16 - 20

Blank.

21 - 25

Maximum number of samples.

26 - 30

Blank.

31 - 35

Cut-off criterion, C. Decimal point is not necessary.

36 - 40

Blank.

41 - 45

Subpopulation for subnet analysis only.

<u>Col.</u>	<u>Description</u>
46 - 50	Blank.
51 - 80	Subnet rooting instructions see (a) below.

(a) Control Words for Subnet Studies.

Columns 51 - 59 of each problem card are reserved for information detailing the nature of the subnet to be analyzed, if any. Each subnet study requires a new problem card.

The partitioning variables which limit the nature of the kind of subnet that is studied are given in the profile containing values of A, B and C. Thus A may be sex, B may be delinquency-status and C may be grade. Any substantive variable may be used, provided only that A is 2-valued, B is 2-valued and C is 3-valued.

To utilize A as a partitioning variable we say that we "root" nodes on A. This merely establishes that the program will classify nodes on the basis of A. To study one or another of the two classes of nodes, we further "root" on either the indicator "1" or "0." Thus, suppose A is sex and A-1 is male while A-0 is female. We require two instructions to the program: take into account sex (root on A) and further, trace a net containing those nodes that are male (root on A-1). If no other variable is used to classify nodes, the result is a tracing over a subnet containing only males. Using B or C

produces further partitioning of the population. Again, a two-fold instruction is required: root on the variable and then root in particular on a subclass specified by the variable.

A further option is present in restricting the population from which starters or targets at steps beyond the origin of the tracing are drawn. Thus to sample starters from the subnets we "root on starters." But one can let the starters be completely arbitrary and only root nodes at subsequent removes; this calls for an instruction "do not root starters" and "root targets."

Similarly, one can root starters but not subsequent targets (e.g., a message enters the system and is certain to land among those who have property A-1, but afterwards spreads through the total system). Finally, one can root on neither starters nor targets: this special case is a total net analysis.

The options are obtained by control word punching in the problem card for the tracing as follows:

<u>Column</u>	<u>Description</u>
51	0 = do not root on starters 1 = root on starters
52	0 = do not root on targets 1 = root on targets
53	0 = do not root on A 1 = root on A
54	0 = do not root on B 1 = root on B

<u>Column</u>	<u>Description</u>
55	0 = do not root on C 1 = root on C
56	0 = root on A = 0 1 = root on A = 1
57	0 = root on B = 0 1 = root on B = 1
58	0 = root on either C = 0 or C = 1 1 = root on C = 2
59	0 = root on C = 0 1 = root on C = 1
60-80	Blank

(b) All of the above fields are right justified; blanks need not be punched.

B. For each problem card that is input, a set of structure statistics is given as output. No cards are output. A record of $n(t)$ for each step t is given for each sample tracing for a given problem and then the averages are printed as the structure statistics. As many problem cards can be run in the same job as the line and time limits of the operation will allow.

IV. PARAMETER ESTIMATION FOR NETS

Computes π , σ , π_s for total net or any subnet defined in terms of the variables A, B, and C of rooting.

A. Input decks and ordering:

DECK 3

/*

GOSYSIN

DATA

Blank Card

Problem Cards

Blank Card

/*

B. Format of input cards.

Problem cards:

<u>Cols.</u>	<u>Description</u>
1 - 5	Level (L)
6 - 10	Density
11 - 15	NNN
16 - 20	-1 iff root on A-0 0 iff do not root on A +1 iff root on A-1
21 - 25	-1 iff root on B-0 0 iff do not root on B +1 iff root on B-1
26 - 30	+1 iff root on C 0 iff do not root on C
31 - 35	-1 iff root on C-0 0 iff root on C-1 +1 iff root on C-2

(Note: For this program L and density range from 1 to 7,
and NNN must be less than 500%)

C. Output

- 1) problem card printed
- 2) π
- 3) σ
- 4) π_5
- 5) \underline{a}_i
- 6) subnet size N_i
- 7) total number of contacts in subnet
- 8) Number reciprocated contacts
- 9) Number sibbed contacts
- 10) Number doub-role reciprocated contacts

V. HIGHER-ORDER BIAS ESTIMATE

Computes lambda for total net or any subnet defined in terms of variables

A, B and C.

All format and deck ordering is identical to that for the third program (DECK

3) for parameter estimation for nets. The only change is in the output, as

follows:

- 1) problem card printed
- 2) subnet density \underline{a}_i
- 3) no. of contacts (axones) on subnet
- 4) subnet size
- 5) no. of contacts "returning to grandparent"

6) λ ("gp")

VI. FULL TRACING FORMULA

Computes theoretical values of $n(t)$, $P(t)$, $N(t)$ and $X(t)$ for every t up to a point where $P(t) \rightarrow 0$, given input values for the density \underline{a} , π , σ , and the starting fraction $P(0)$, as well as the net size. The formula derived in Appendix A of the Fararo-Sunshine monograph is employed. The same formula can be used to derive random net predictions by setting $\pi = \sigma = 0$ on the input cards.

A. Deck order:

DECK 5

/ *

GOSYSIN

Problem Cards

Finish Card

B. Formats:

Problem cards:

$\underline{a}_i, N_i, i, i, P(0)$

and see program for actual FORTRAN input format. Finish card:

as in problem cards but set $\pi \geq 1$.

C. Output

A table of theoretical structure statistics, with entries labeled.

APPENDIX B

THE SCHEDULE

Name: _____

Age: _____

1. When do you expect to be released from Cedar Knoll?

Month _____ Year _____

2. Print the names of the four male students at Cedar Knoll (but not in Orientation Cottage) who are your best walking partners. (Give their full name, not nickname).

1. _____
2. _____
3. _____
4. _____

Answer the following questions by checking the response that most agrees with the way you think about the problem described. There are no right or wrong answers--the way you feel is the response we want. Do not skip any of the questions.

1. A student commits a minor rule infraction. A counselor, who observes the student, reports the incident. Later two students are discussing the counselor's action. One of the students criticizes the counselor. The other, let's call him Johnson--defends the counselor and says he is usually fair and that he is only doing his duty.

What do you think of Johnson defending the counselor?

It was right _____

It was wrong _____

How many of the male students here at Cedar Knoll do you think would approve of Johnson's defending the counselor?

Almost all _____

About three-fourths _____

About half _____

About one-fourth _____

Almost none _____

2. Students Anderson and Watts are good friends. Anderson had some money smuggled into Cedar Knoll by a visitor. He explains to Watts that he thinks the counselor is getting suspicious and asks Watts to hide the money for a few days. Watts takes the money and hides it.

What do you think of Watts' hiding the money?

It was right _____

It was wrong _____

How many of the male students here at Cedar Knoll do you think would approve of Watts' hiding the money?

Almost all _____

About three-fourths _____

About half _____

About one-fourth _____

Almost none _____

3. Harris is planning to run away. He asks Davis to help him by talking to the counselor while Harris makes it to the woods. Davis says no, and tells Harris he is going to warn the counselor of Harris' planned escape.

What do you think of Davis' decision?

It was right _____

It was wrong _____

How many of the students here at Cedar Knoll do you think would approve of Davis' decision?

Almost all _____

About three-fourths _____

About half _____

About one-fourth _____

Almost none _____

Answer the following by circling "T" if you think the statement is true or "F" if you think the statement is false. We are interested in your opinions, what you think. I will read each statement twice then give you a short time to think about your answer and to circle the T or F.

1. T F Where you end up in life is mostly a matter of luck.
2. T F It would be kind of dumb to vote for increasing your taxes.
3. T F It's not what you do, but whether or not you get caught that really counts.
4. T F People interfere with my thinking.
5. T F Honesty is usually a handicap in getting ahead in the world.
6. T F It's not what you know, but who you know that counts.
7. T F I always follow the rule that what people don't know won't hurt them.
8. T F All is fair in love and war.
9. T F When things go wrong I just try harder.
10. T F A person never knows when he will get in trouble.

- 11. T F Honestly looking at it, everyone is only interested in his own problems.
- 12. T F It's better to take each day as it comes than to plan about the future.
- 13. T F Policemen who bawl people out do so just to feel important.
- 14. T F A person who is different should try to be more like others.
- 15. T F Actually the most important single thing for a man to give his family is good support so that they will have all the things they want.
- 16. T F I can see many reasons why a person would vote to raise his own taxes.
- 17. T F Looking at it honestly, I think that all I have been doing here is putting in my time.
- 18. T F Some people just seem to have it in for me.

CODE DESCRIPTIVE DECK

<u>Column</u>	
1 - 3	Node
4 - 6	Target 1
7 - 9	Target 2
10 - 12	Target 3
13 - 15	Target 4
16 - 21	Prisonization Responses 16, 18, 20 1=High 2=Low 17, 19, 21 1,2=High 3,4,5=Low
22	Self Pr. Rank 1=High (2 or more)
23	Other Pr. Rank 1=High (2 or more)
24 - 25	IM Score
26	IM Level 2=Low 1=High
27 - 28	Age (years)
29	Race 1 - Non White 2 - White
30	Religion 1 - Prot. 2 - Catholic
31 - 32	Time Served in Months
33 - 34	Time Expected to Release in Months
35	Current Cottage 1 - Orientation 5 - B5 2 - B2 6 - B6 3 - B3 7 - Ash 4 - B4

Column

36	Cottage Side 1 - A 2 - B
37	Operating Cottage if currently in Ash
38	Cottage Side 1 - A 2 - B
39 - 40	Age of Official Delinquency Onset in Years
41 - 42	Current Offense (code as in List A)
43 - 44	First Offense (code as in List A)
45 - 46	Total Number of Arrests Prior to Current
47 - 48	Total Number of Prior Adjudications
49 - 50	Total Number of Prior Correctional Placements
51 - 52	Time (months) Served in Correctional Institutions
53 - 54	Age (years) at First Correctional Admission
55	Previous Placement at M.G. or C.K. 1 - None 2 - M.G. Only 3 - C.K. Only 4 - M.G. and C.K.
56	Other Placements 0 - None 1 - Junior Village 2 - Foster Home 3 - 1 and 2 4 - Other Dependency Institution 5 - 1 and 4 6 - Youth Probation House
57 - 59	Last Residence (D.C. Census Tracts)

Column

60

Time in D.C.

- 1 - Since Birth
- 2 - 1 year or less
- 3 - 1 year to 3 years
- 4 - > 3 years to 6 years
- 5 - > 6 years to 10 years
- 6 - > 10 years to 15 years
- 7 - > 15 years

61

Migration (Place)

- 0 - None
- 1 - South
- 2 - North
- 3 - Midwest
- 4 - Far West
- 5 - Foreign Born

62

Family Status

- 1 - Complete
- 2 - Father Deceased
- 3 - Mother Deceased
- 4 - Mother only, Father Separated or Divorced
- 5 - Father only, Mother Separated or Divorced
- 6 - Illeg., Mother lives alone
- 7 - Mother and paramour, father living
- 8 - With other relatives
- 9 - Does not live with parents or relatives

63 - 65

Last Street School (code as in List B)

66 - 67

Last Street Grade Attended

68 - 69

Current Institutional School Placement

- 1 - Highest
- 15 - Lowest

70 - 71

Vocational Training

- 00 - None
- 01 - Barber
- 02 - General Shop
- 03 - Carpentry
- 04 - Shoe Shop
- 05 - Auto Shop

Column

72 - 73

Current Job Placement

- 00 - None
- 01 - Institutional Maintenance
- 02 - Cottage Maintenance
- 03 - DTS Canteen
- 04 - Hospital

- 11 - MacDonald's
- 12 - Accent Enterprises
- 13 - Gasoline Stations
- 14 - Ft. Meade Commissary
- 15 - Farmer Brown's Furniture Co.

74

Special Programs

- 1 - Research and Development

75 - 76

Number of Disciplinary Actions

77 - 78

Average Monthly Visits

- 99 - Not yet eligible for visits

LIST A

- 1 - Petit Larceny - Shoplifting
- 2 - Larceny
- 3 - UUA
- 4 - Dest. Public Property
- 5 - Burglary
- 6 - Housebreaking
- 7 - CCDW
- 8 - Robbery
- 9 - Simple Assault
- 10 - Assault
- 11 - Rape
- 12 - Homicide
- 13 - Sodomy
- 14 - Indec. Assault
- 15 - Tampering with auto
- 16 - False Fire Alarms
- 20 - Dis. Conduct
- 23 - Truancy
- 24 - Beyond Control
- 25 - Poor Com. Adj.
- 26 - Absconding C.K. or other Inst.
- 27 - Beyond Control J.V.
- 90 - Unknown
- 99 - Current is first

LIST B

- | | |
|-----------------------------|-----------------------|
| 000 - Not in school in D.C. | 26 - Anacostia |
| 1 - Gordon Jr. High | 27 - Boys Jr.-Sr. |
| 2 - Kramer | 28 - Geo. Mason |
| 3 - Shaw | 29 - Douglas |
| 4 - Cardoza | 30 - Backus |
| 5 - Banneker | 31 - Gidding Elem. |
| 6 - Kelly-Miller | 32 - Hine Twilight |
| 7 - Birney Elementary | 33 - Woodson Jr. High |
| 8 - Francis Jr. High | 34 - Eliot |
| 9 - Watkins | 35 - Scott Elem. |
| 10 - Hart | 36 - Jackson Elem. |
| 11 - Sousa | 37 - Dunbar |
| 12 - Terrell | 38 - Ballow |
| 13 - MacFarland | 39 - Emory |
| 14 - Randall | 40 - Brightwood Elem. |
| 15 - Woodrow Wilson | 41 - Stewart |
| 16 - Bruce Evans | 42 - Eastern |
| 17 - Cook Elementary | 43 - Partridge |
| 18 - Langley | 44 - Rabout |
| 19 - Paul | 45 - Jefferson |
| 20 - Garrett Patterson | 46 - Coolidge |
| 21 - Browne | 47 - Simm Elem. |
| 22 - Springarn | 48 - Roper |
| 23 - Bundy | 49 - Sharp Belle |
| 24 - McKinely | 91 - Special Classes |
| 25 - Taft | |

END