NODULAR MODELS: A TECHNIQUE FOR ARTICULATING STRATIFICATION AND PERSONALITY SYSTEMS

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ABSTRACT

NODULAR MODELS: A TECHNIQUE FOR ARTICULATING STRATIFICATION AND PERSONALITY SYSTEMS

by Irwin William Miller, Jr.

Most research on the personality concomitants of social stratification has focused on the relationships between a single stratification variable and a single personality variable. Further, such research has used techniques which assume that the relationship between these variables is linear, i.e., single-valued or monotonic.

The problem of this study is to attempt to develop models which permit the articulation of stratification as a system with personality as a system such that both monotonic and non-monotonic relationships are observable, and to assess the advantages and disadvantages of these models in comparison with the traditional linear, bivariate models.

A conceptual analysis of stratification as the antecedent system results in the development of two new models. One, the Amplifier model, treats status and status consistency as a composite antecedent and relates this antecedent to a specified monotonic order for the consequent system. The other, the status structure model, is one type of Nodular model which is designed to provide an antecedent system for examining non-monotonic relationships between stratification and personality.

The status structure model maps variations in status consistency over a range of ordered composite status groups. Maximum status

consistency nodes are taken to represent status structure groups. Minimum status consistency nodes are interpreted as boundaries.

Personality is viewed as an open (or quasi-open) system that transacts with the contemporary social environment, and which comprises functionally coherent domains that are differentially status-relevant. Two domains hypothesized in this study are adjustment and achievement. The mapping of personality concomitants over the status structure model is the basis for the second type of Nodular model, the personality concomitant model.

A theoretical analysis of mediating processes suggests that conflicting values and expectations are the basic links between adjustment concomitants and both status and status consistency. The influence of status on achievement variables appears to be explicable in terms of differences in the content of values and expectations, and in language differences. However, the direct relationship between status consistency and the achievement domain, ceteris paribus, is indeterminate.

The Amplifier and Nodular models, and a representative selection of traditional monotonic models, are applied to stratification and personality data obtained from 340 seventeen-year-old high school boys.

In general, linear models support the hypotheses that adjustment and achievement are two distinct functionally coherent domains of personality, and that achievement is more status-relevant than adjustment. However, linear models fail to indicate the functional importance of status consistency for either personality domain.

The hypotheses for the two Nodular models are supported. The status structure model generates three maximum status consistency

nodes interpretable as status structure groups and two minimum status consistency nodes interpretable as boundaries. An analysis of the occupational and educational composition of the families in these groups indicates that the groups are internally congruent and externally differentiated such that the resulting pattern is sociologically meaningful.

The personality concomitant model indicates that both adjustment and achievement indicants tend to have isomorphic relationships with the status structure. Moreover, this model suggests that personality concomitants are not simple functions of either status or status consistency. Rather, the model generates (and provides a technique for testing) hypotheses concerning the differential functional importance of these two stratification variables at varying locations in a stratification system.

The Nodular models are evaluated and compared with linear models in terms of four criteria: (1) data requirements, (2) generality or flexibility, (3) information yield, and (4) interpretability. In all, the most distinctive features of the Nodular models appear to be their holistic character and their ability to test and generate hypotheses which the linear models are incapable of testing or generating.

NODULAR MODELS: A TECHNIQUE FOR ARTICULATING STRATIFICATION AND PERSONALITY SYSTEMS

By

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TO

BONNIE AND MARK

AND

"THE BEAUTIFUL LADY"

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TABLE OF CONTENTS

TABLE OF CONTENTS - Continued

TABLE OF CONTENTS - Continued

TABLE OF CONTENTS - Continued

TABLE OF CONTENTS - Continued

TABLE OF CONTENTS - Continued

LIST OF TABLES

LIST OF TABLES - Continued

LIST OF TABLES - Continued

LIST OF FIGURES

LIST OF APPENDICES

CHAPTER I

INTRODUCTION

One of the concerns of social psychology is the study of the transactions between individuals or personality systems and social environments or social systems. These systems are perhaps best viewed as systems in reciprocity. However, usually the social system is taken as the independent or antecedent system and personality is taken as the dependent or consequent system.

The area of social psychology which studies these two systems is called social structure and personality. One facet of social structure is social stratification, a major sub-discipline of sociology. Social stratification refers to the hierarchical arrangement of individuals and groups according to consensually held criteria of classification and evaluation.

The Problem

There has been a considerable amount of research on the personality concomitants of social stratification. Most of this research has focused on the relationships between a single stratification variable and a single personality variable. Further, this research has used techniques which assume that the relationship between these variables is linear, i.e., single-valued or monotonic. This dissertation reflects a general dissatisfaction with the theory and methods underlying this bivariate and monotonic approach.

The problem of this dissertation is to attempt to develop models which permit the articulation of stratification as a system with personality as a system such that both monotonic and non-monotonic relationships may be observed, and to assess the advantages and disadvantages of such models in comparison with the traditional linear, bivariate models.

Approach and Scope

The general approach of this dissertation is to examine conceptual and methodological issues in specifying and articulating the antecedent system (stratification) and the consequent system (personality). The following overview indicates the scope of this approach.

Previous Research

Chapter II surveys research in stratification and personality and presents a critique of the theory, methods, and findings of these studies.

Conceptual Analysis

Conceptual analysis is approached from the view that the basic requirement is a detailed specification of the antecedent system. This is done in Chapter III, where the basic taxonomic facets of stratification are held to be the hierarchical and the non-hierarchical dimensions of organization. This chapter concludes with an examination of ascertainment techniques, with special emphasis on the problem of delineating boundaries in stratification systems.

Chapter IV examines selected issues which provide the basic points of departure for formulating personality as the consequent system in stratification-personality research. This chapter concludes with a view of personality which is held in this study.

Chapter V attempts to integrate the conclusions of preceding chapters by considering types of models for relating stratification and personality. This is approached in two ways: (1) by examining formal system characteristics, and (2) by juxtaposing theories and hypotheses concerning mediating processes. This analysis results in the identification of six basic types of models which provide the framework for subsequent procedures and analyses.

Models and Procedure

Chapter VI describes the development of a new linear model (the Amplifier model) and new non-monotonic systems models (the Nodular models), outlines the problem of evaluating linear and Nodular models, and presents the hypotheses to be tested for each model. Chapter VII describes the sample and data, the treatment of the data, the construction and evaluation of the major indicants, and the analyses for each model.

Findings

Chapter VIII presents the results obtained from the linear monotonic models. Chapter IX presents the results flowing from the Nodular models and compares these with the results from the linear models. Finally, Chapter X summarizes the dissertation, compares and evaluates the models, and discusses the limitations of the study and the tasks for future research.

Significance of the Study

The major significance of the study lies in its contribution to stratification and personality research in providing a systems approach

which offers broader theoretical and methodological frameworks for articulating the two systems.

One side effect of the study is that it presents a new technique for ascertaining boundaries in stratification systems, and thereby contributes to problems associated with the delineation of social "classes."

CHAPTER II

BACKGROUND OF RESEARCH

This chapter reviews research on the personality concomitants of social status and status consistency for the period of about 1950 to the present.[1] The aim of this chapter is (1) to provide a basis for determining which classes of personality variables are consequent variables and (2) to assess the status conditions which might be expected to result in personality differences. The chapter concludes with a critique of the theory, methods, and findings of these studies.

Definitions and Scope

Social status, as it is used in the following studies, refers in general to a hierarchical ranking of individuals or groups along such dimensions as social honor, social standing, social prestige, income, material possessions, ecological characteristics of residence, race, ethnicity, subjective identification, or similar criteria.

A definition of status consistency follows from the multidimensional view of stratification. This view holds that there are multiple rank systems by which an individual may be assigned a status position. An individual is said to have high status consistency if there is a high degree of agreement between his status positions on several rank

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[1]Auld (1952) presents an excellent summary of studies concerned with social status and personality test responses for the period prior to 1950.

systems. On the other hand, low status consistency reflects discrepancies between the status positions on the rank systems. Examples of rank systems are occupational prestige, education, and income.[2]

Personality is a broad concept, often used to refer to specific traits as ascertained by personality tests, and sometimes used to refer to any subjective characteristic of the total system of orientations of the individual. For this review, we shall consider all subjective attributes which are logically distinguishable, however ascertained, as subsumed under the term "personality." Whether these subjective attributes constitute a single coherent system which guides, influences, or determines overt behavior is problematical.[3]

The scope of the review is bounded by a concern with non-pathological facets of personality. Other major personality domains with which stratification variables have been related are intelligence, socialization, and mental illness.[4]

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[2]Terms such as "social status," "social class," and "socio-economic status" are often used as though they were equivalent, when in fact there are important conceptual and technical differences. Other terms denoting status consistency, with variations in conceptual emphasis, are "status crystallization," "status congruence," "status equilibrium," and "status balance." Conceptual and technical issues associated with the use of these stratification terms are examined in Chapters III and VII.

[3]Conceptual and technical issues associated with a view of personality as a consequent system are examined in Chapters IV and V.

[4]For examples of the intelligence studies, see Sewell and Ellenbogen (1952), Haggard (1954), Carlson (1955), Sewell and Haller (1956), Hoffman, Mitsos, and Protz (1958), Liddle (1958), Burchinal (1959), and Haller and Thomas (1962). The relationships between stratification and socialization practices have been reviewed and evaluated by Bronfenbrenner (1958) and Sewell (1963). A recent summary of the evidence on stratification and the incidence and prevalence of mental illness is presented by Kleiner and Parker (1963).

Concomitants of Social Status

This section examines the personality concomitants of social status under four categories: (1) adjustment variables, or those variables which are taken to indicate lack of neurotic, nervous, or anxiety symptoms; (2) achievement variables, or those behaviors and orientations which are taken to be symptomatic of the goal structures and associated means perceived by and motivating the person; (3) self-concept variables, or those variables assumed to reflect the image the individual has of himself; and (4) other variables not readily classifiable under these three categories.

Adjustment Variables

Auld (1952) reviewed approximately 25 studies dealing with the relationship between social status and personality test responses. These studies represent the use of 13 different personality tests, some of which are projective. Most of the studies surveyed show social status differences on the tests examined, and in about a third of the studies these differences are appreciable. Of those studies which indicated status differences, the "middle-class" subjects obtained more favorable scores than the "lower-class" subjects.

The following studies, which were published subsequent to the Auld survey, are presented first if they used paper-and-pencil tests and second if they used projective tests.

1. Paper-and-pencil tests. Correlation studies by Sims (1954), Sewell and Haller (1956, 1959), Eysenck (1960) and Haller and Thomas (1962) are indicative of the range of association between various measures of social status and a variety of personality indicants. The variables examined and their respective correlations with social status are: concern over social status (-.31); nervous symptoms (-.24);

concern over achievement (-.18); rejection of family (-.12); nervous tension (-.12); will control (+.10); cyclothymia (+.11); emotional stability (+.11); character or super-ego strength (+.12); total adjustment scores (+.16, +.23); extroversion (+.17); sophistication (+.17); adventurous autonomic resilience (+.18); and home, health, social, emotional and total adjustment indicants (+.01 to .37).

Only one study from among the above (Sewell and Haller, 1956) used controls. Sewell and Haller controlled for number of siblings, chronological age, and intelligence and found that status made an independent contribution to adjustment.

Other studies using a variety of data analysis techniques are reported by Himmelweit (1955), Mitchel (1957), Liddle (1958), and Burchinal, Gardner and Hawkes (1958). These studies indicate that the following characteristics are significantly associated with low social status: economic worries; feelings of rejection or persecution and consequent aggressive tendencies; feelings of insecurity; psychosomatic complaints or nervous symptoms; unfulfilled desires for increased independence and new experience; troublesome anxiety reactions; socially unacceptable attitudes toward others; lack of self-assurance; lack of leadership ability; and low scores on total adjustment indicants.

Hoffman and Miranda (1955) attempt to deal with the role of "middle-class" bias in personality tests. The authors had judges rate each item of the Neurotic Tendency Scale of the Bernreuter Personality Inventory as to its "middle-class" bias. The sample was 486 high school students.

Results indicated that the "working-class" subjects obtained higher neuroticism scores on the total items, on the biased items and on the unbiased items. However, there was a greater inflation for the "working-class" on the biased items than on the unbiased items.

The authors conclude that for the personality test examined there is a "middle-class male bias."

Most of the studies reviewed have found significant status-related differences in personality adjustment measures. These differences have been in the direction of associating more "favorable" scores with higher social status levels. None of the studies surveyed have indicated a reversal in this trend. Only one study, by Burchinal (1959), fails to find significant status-related differences in personality adjustment scores.

2. Projective Tests. Parsons (1955) examined the association between Rozenzweig Picture Frustration Study scores and social status in a group of 150 high school seniors. Non-significant product-moment correlations were obtained.

Mason and Ammons (1956) studied three families, each having at least one child between the ages of 10-13, randomly selected from three "social-class" levels in a semi-rural community of 2,500. The mother and child in each family were individually tested with a short form of the Thematic Apperception Test (TAT). The authors found that willingness to participate was highest in the "upper-class" while "middle-class" children tended to be most cautious. No language differences were discerned between the "upper-class" and "middle-class" responses, but "lower-class" stories showed poorer pronounciation and grammer, and more slang.

Rainwater (1956) administered the Szondi Test to 95 eighth grade students. Results led the author to conclude that "middle-class" subjects are more dependent on personal relations for gratification, are more optimistic, show more control of impulses, and are more committed to verbal symbolic behavior than are "lower-class" subjects.

An examination of three projective tests, the Rorschach, the Fascism (F) Scale and the TAT, was made by Riessman and Miller (1958).

For the Rorschach, they conclude that "lower-class" subjects tend to give fewer color responses and appear more maladjusted. "Lower-class" subjects give shorter stories in response to the TAT. Finally, "lower-class" subjects obtain higher scores on the F-Scale although the authors feel that the items probably have different meaning in the "lower-class" subculture.

3. Conclusion. Findings for projective tests tend to parallel the results of paper-and-pencil tests. Most of the status-related differences for projective tests show responses which are interpretable as "unfavorable" for lower status subjects in contrast to higher status subjects.

The consistency of results in the area of adjustment holds inspite of the wide variation in personality tests, indicants of social status, and data analysis techniques.[5] Thus, our conclusions are in agreement with those reached by Auld (1952) over a decade ago.

Achievement Variables

The achievement variables surveyed in this section are grouped under five headings: (1) achievement motivation, (2) levels of aspiration, (3) deferred gratification, (4) achievement related values, and (5) "over- and under-achievement." The earlier distinction between paper-and-pencil questionnaires and projective tests cuts across some of the above areas.

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[5]A total of twenty-three different personality tests were used in the studies reviewed here. Ten of these are different from the tests used in the research reviewed by Auld (1952). Our review also indicates the use of more than twelve different indicants of social status. If empirical consistency did not obtain in the studies reviewed, one might question the possible influence of inter-study differences in instruments. However, this is not problematical here, and therefore we do not discuss specific status or personality instruments.

1. Achievement motivation. Achievement motivation, or the need for achievement (n-Achievement), is a tendency to strive for excellence in terms of self-established standards (McClelland, Atkinson, Clark and Lowell, 1953). Since this tendency is held to be non-conscious, methods of ascertainment typically employ projective techniques, usually a set of standardized TAT pictures. The following four investigations attempt to relate social status to n-Achievement. The first three use the TAT, the last study uses a paper-and-pencil questionnaire.

Douvan (1956) hypothesized that n-Achievement is more generalized and situation-free in the "middle-class" than in the "working-class." Achievement motivation was assessed for each group under two conditions of reward, material and symbolic, for a total sample of 313 high school students. The results substantiated the hypothesis: the n-Achievement scores of the "working-class" subjects showed a greater variation between the two reward conditions than did the scores of the "middle-class" subjects.

Rosen (1956) found that "middle class" subjects got significantly higher n-Achievement scores than did "lower-class" subjects in a sample of male high school subjects.

In another study, Rosen (1959) reports the same trend but finds that social status accounts for a greater share of the difference in n-Achievement scores than ethnicity.

Peterson (1962) ascertained n-Achievement by means of the Need-Achievement Scale of the Edwards Personal Preference Schedule on 555 freshmen and sophomore college students. Results show that for men only there is a significant correlation of +.22 between social status and n-Achievement.

2. Levels of aspiration. Correlations between social status and levels of occupational aspiration of +.34 (Straus, 1962) and of +.37

(Haller and Miller, 1963) are reported. Higher levels for "middle-class" subjects on occupational aspirations are reported by Himmelweit (1955) and for educational and occupational aspirations by Rosen (1956) and Schneider and Lysgaard (1953).

Two investigations are noteworthy for their use of controls. Hieronymus (1951) reports correlations ranging from +.46 to +.55 between social status and three measures of aspirations (educational, occupational and overall) with intelligence controlled. Sewell, Haller and Straus (1957) control for sex and intelligence and find that social status makes an independent contribution to levels of educational and occupational aspiration.

Rosen (1959) finds that levels of occupational aspiration are influenced more by ethnicity than by social status.

Empey (1956) distinguishes between absolute and relative levels of occupational aspiration. Relative levels of occupational aspiration refer to the youth's aspiration in relation to the occupation of his father. Findings show (in agreement with the other studies) that absolute levels of occupational aspiration are positively associated with social status. However, Empey finds that the relative levels of occupational aspirations of lower status boys are greater than those of higher status boys.

A report by Wilson (1959) shows that school districts characterized by different "social-class" climates affect aspirations, achievement and political preferences when the student's "class" background is controlled. For example, "working-class" high school boys have their aspirations elevated in the context of "professional" schools while sons of professional families have their aspirations lowered in the context of "working-class" schools.

Finally, Bordua (1960) examined the college plans of 1,529 ninth- to twelfth grade students using father's occupation as an indicant of

socioeconomic status. The control of parental stress on college plans drastically reduced the positive association between status and college plans, but left a residual.

3. Deferred gratification. Loeb (1953), in a speculative work, argues that the "lower-class" allows more immediate impulse gratification in contrast to the "middle" or "upper-classes." He concludes that even though the literature might emphasize early training experiences as being of first importance in the development of personality, the most important factor is the extent to which impulses get immediate satisfaction so that patterns of using energy are laid down.

Loeb's position notwithstanding, there are few attempts to relate deferred gratification patterns to social status.

Schneider and Lysgaard (1953) found that "working-class" subjects were characterized by a proclivity for physical violence whereas "middle-class" subjects were characterized as "well-mannered and obedient." Subjects were 2,500 high school students based on a national sample.

Straus (1962) administered a deferred gratification scale to 338 male high school students. The scale had five subscales: affiliation, aggression, consumption, economic independence and sexual expression. Results indicated no significant correlation between social status and the total score of the deferred gratification scale. However, significant correlations between social status and deferred gratification for affiliation (+.12) and for economic independence (+.26) were noted.

Haller and Miller (1963, p. 115) present a correlation of +.18 between socioeconomic status and a general index of positive evaluation of deferred gratification for a sample of 433 seventeen-year-old high school boys.

4. Values. Hyman (1953) has collated and re-analyzed data from various public opinion surveys dealing with the differential value placed

on the culturally prescribed goal of success by "social classes."

Some of Hyman's major findings may be summarized as follows. "Lower-classes," in contrast to "middle" and "upper-classes," place less emphasis on college training, emphasize those factors which would lead them to achieve careers low in the economic structure (e.g., security and wages rather than congeniality, interests and individual qualifications), are more aware of their lack of opportunity, and accord different prestige to occupational goals.

Himmelweit (1955) found that "middle-class" boys are more concerned with how well they do in school than are "working-class" boys.

Rosen (1956) ascertained three areas of value orientations for a group of 120 male high school students. The three value orientations were activistic vs. passivistic, future vs. present, and individualistic vs. familistic. Analysis showed that "middle-class" boys score higher on the achievement-oriented poles of activistic, future, and individualistic than do "lower-class" boys.

Using the same achievement-values, Rosen (1959) found that social status was associated more than ethnicity with the achievement-values.

Haller and Miller (1963, p. 115) present data concerning a value orientation similar to the activistic versus passivistic indicant of Rosen (1956). These authors show a correlation of +.21 between socio-economic status and belief in internal versus external determination of events.

Finally, Smelser (1963) has shown that adolescent and adult values are a function of the socioeconomic history of the family during the son's developmental years (birth to age 18). Data were based on classifications of 93 families by their status positions relative to a 1928 median, and whether their status rose or fell between 1928 and 1946.

Findings indicated that sons from high status upwardly mobile families emphasize competence and power, have higher occupational aspirations, and emphasize strength in their self-perceptions and their perceptions of their father.

5. "Over- and under-achievement." The concepts of over and under achievement are related to the discrepancy between what one would expect an individual to attain solely on the basis of estimates of his ability and what he actually does attain. If an individual achieves more than one would expect on the basis of ability, he is said to "over-achieve." If an individual achieves less than one would expect on the basis of his ability, he is said to "under-achieve."

Strodtbeck (1958) examined the discrepancies between measures of intelligence and achievement on a group of 1, 151 teen-age boys. Results indicated that over-achievement is associated with higher social status.

On the other hand, Burchinal (1959) found no significant correlation between social status and measures of over- and under-achievement in a group of 176 fourth to tenth grade girls.

Self-Concept

McPartland and Cumming (1958) ascertained self-concept by means of twenty replies to the question "Who am I." Four categories of response were used for data analysis: (1) concrete ("I am a blond"), (2) social position ("I am a father"), (3) situation-free ("I am a happy person"), and (4) comprehensive-vague ("I am not a communist"). Results showed that self-conceptions based on positions in established social systems were significantly more frequent in the "middle-class." Self-conceptions based on situation-free identification were significantly more frequent in the "lower-class."

Four other studies of social status and self-concept are surveyed by Ruth Wylie (1961). She concludes that these studies do not permit any conclusions concerning social status and self-concept relations. Two studies have statistically non-significant trends and the other two studies lack controlled variables (e.g., intelligence).

Finally, Brookover, Paterson and Thomas (1962) report correlations between a measure of general self-concept and socioeconomic status for 513 males ($r = +.24$) and 537 females ($r = +.26$) from a group of seventh grade students.

Other Variables

Le Shan (1952) examined the stories told by 117 eight to ten year old youths in response to the stimulus "tell me a story." Analysis indicated that the stories of "middle-class" subjects covered longer time-spans than the stories of "lower-class" subjects.

Rothman (1954) found no significant "social class" differences for 56 ninth grade students on eight personality measures: purposes, aspirations, attitudes, beliefs, feelings, interests, thinking, and action. Operations used to assess these areas were not specified.

McArthur (1955) attempted to determine whether "middle" and "upper-class" students tell different TAT stories and whether the differences are predictable from Florence Kluckhohn's formulation of five value orientations. Subjects were 201 Harvard freshmen who had attended public ("middle-class") and private ("upper-class") secondary schools. Results indicated that the two groups differed on fifteen predictions derived from the psychodynamics associated with "dominant vs. variant" patterns of value orientations. For example, public school subjects were future oriented whereas private school subjects were past oriented.

Kaufman (1957) found a non-significant correlation between social status and an anti-Semitism scale on a group of 213 non-Jewish college students.

Strodtbeck (1958) examined the relationship between father's values and social status in his study of 1, 151 fourteen to seventeen year old public and private school boys. Values ascertained were the belief that the world is amenable to rational mastery, willingness to leave home, and preference for individual rather than collective credit. Results showed that agreement with these values is associated with higher social status.

Inkeles (1960) examined data from previously completed studies to show that equivalent status positions in the modern industrial order generate a pattern of perceptions and values which are consistent from country to country. His analysis shows that higher status is associated with job satisfaction, job security, happiness, self-confidence, a stress on ambition, decency and honesty in child-rearing, the belief that human nature can be changed, and optimism regarding control of the atom.

Miller and Swanson (1960) studied reactions to conflict as a function of social "class" and child-rearing practices in a group of 112 white male seventh to ninth grade students. The sample was also classified in terms of "entrepreneurial vs. bureaucratic integration," referring to characteristics of the father's birth and occupation.

Results indicated that "middle-class" boys showed more certainty regarding moral standards, more repression of failure, and more inhibition of direct expression of aggression than did "working-class" boys. The last finding was more pronounced in the entrepreneurial setting. "Working-class" boys preferred those defenses characterized by simplicity, maximal distortion of the perceptual field, generality of applicability, and creation of social difficulties (e.g., denial).

"Middle-class" boys preferred defenses characterized by complexity, less distortion of the perceptual field, applicability to specific kinds of conflict, and creation of fewer social problems (e.g., turning against the self). Finally, "middle-class" boys preferred conceptual styles in jobs and hobbies while "working-class" boys preferred motoric styles.

Peterson (1962) studied 555 male and female college students. He found that low social status is associated with peer-conformity whereas high social status is associated with peer-independence.

Goodchilds and Smith (1963) examined the function of social status as an intervening variable on the effects of unemployment. They reason that a high social status individual would view unemployment as a personal failure, while a low status person would view unemployment as society's fault. Results show that the longer their unemployment the more defensive and self-critical higher social status subjects became. The findings for lower status subjects are the reverse.

Summary and Conclusions

Our survey of adjustment concomitants of social status has shown that higher social status is associated with various measures of "personality adjustment," self-assurance, emotional stability, control of impulses, adventurousness, and "extroversion." On the other hand, lower status subjects score higher on measures of worry, insecurity, neuroticism, nervous symptoms, anxiety, concern over social status and achievement, and rejection of family.

Selected findings from the areas of achievement, self-concept, and other variables indicate the following. Higher social status is associated with high achievement motivation, high levels of educational and occupational aspiration, deferred gratification for affiliation and economic independence needs, values facilitating high achievement in

the American culture, self-concepts based on social positions, future and longer time-span orientations, peer-independence, and preference for "socially approved" ways of handling conflict.

The most consistent findings were obtained in the areas of adjustment, achievement motivation, levels of aspiration, and achievement values. Weaker or contradictory conclusions flow from our review of deferred gratification, "over- and under-achievement," and self-concept. Some of the findings in the area of other variables lend some support obliquely to conclusions based on adjustment and achievement.

It seems noteworthy that when measures of degree of association (such as correlation coefficients) are presented, the relationship between social status and achievement variables is stronger than the relationship between social status and adjustment variables. Indeed, Havighurst (1952) suggests that "social class" probably is more closely associated with values than with the "basic personality structure."

Similarly, Sewell (1961) argues for more concern with attitudes, values and aspirations, rather than with deeper personality traits. Sewell also suggests that in the area of values, attitudes and aspirations social status influences appear to be most pronounced.

Concomitants of Status Consistency

This section examines five studies dealing with the personal consequences of status inconsistency. These consequences are (1) political liberalism, (2) social withdrawal, (3) psychophysiological symptoms of stress, and (4) "class consciousness."

Political Liberalism

Lenski (1954) studied the relationship between political liberalism and status crystallization based on a random sample of 749 interviews

with residents of the metropolitan Detroit area. Status crystallization and status were based on four hierarchies: income, occupation, education and ethnicity.

Lenski found that low status crystallization was related to Democratic voting patterns and liberal views on government sponsored health insurance programs and price controls. Even though certain patterns of status inconsistency were more relevant for liberal views than others, liberal political views were associated with low crystallization regardless of the specific pattern.

Kenkel (1956), in an attempt to replicate Lenski's study on a random sample of 300 residents in Columbus, Ohio, used the status dimensions of occupation, education, dwelling rental value, and dwelling area prestige. Kenkel found that there was no significant relationship between status crystallization and politico-economic attitudes, even when patterns of status inconsistency were examined. One of Kenkel's criticisms of Lenski's study is that it was difficult to determine the "natural breaks" on the status crystallization variable.

Lenski (1956a), commenting on Kenkel's study, attempts several explanations for the contradictory findings. First, Lenski maintains that one cannot assume that status crystallization may be adequately assessed by just any status dimensions. These status dimensions must be "basic" (however, Lenski does not offer criteria for determining "basic" dimensions). Secondly, Lenski maintains that it makes a difference where the "natural break" is made. Kenkel split his status consistency measure into halves, while Lenski divided his measure into three-fourths high and one-fourth low. Third, Lenski states that liberal political tendencies result only from marked or pronounced inconsistencies in status. Fourth, Lenski feels that Kenkel should have controlled for status differences. Finally, Lenski indicates that research should examine the consequences of each of the various patterns of status inconsistency.

Social Withdrawal

The relationship between status consistency and social participation is examined in another study by Lenski (1956b). He hypothesizes that "persons with a low degree of status crystallization are more likely to be subjected to disturbing experiences in the interaction process and have greater difficulty in establishing rewarding patterns of social interaction than others." Findings tend to support the hypothesis in that persons with low status crystallization have a higher rate of withdrawal from participation in voluntary organizations than high status crystallization persons.

Psychophysiological Symptoms

Jackson (1962) studied the relationship between status consistency and psychophysiological symptoms of stress. Data were obtained from an area cluster sample of 2,460 American adults in private households. The measure of status consistency was based on occupation, education, and racial-ethnic background status ranks. A symptom level measure consisted of sixteen multiple-choice items.

Results showed that inconsistents had higher levels of psychophysiological symptoms when age, marital status, religion, childhood residence and current residence, length of residence, and region were controlled. However, the findings held only in those cases where racial-ethnic status was high and educational or occupational statuses were low.

"Class Consciousness"

Finally, Landecker (1963) examined the relationship between "class crystallization" and "class consciousness." Class crystallization is defined as "the degree to which mutually equivalent rank levels of

different rank systems coincide in their incumbents, thereby forming social classes and class statuses."

Landecker distinguishes three types of "class consciousness": "class status consciousness," "class structure consciousness," and "class interest consciousness."

"Class status consciousness" includes a person's self-identification with a class and a preference for members of one's own class. "Class structure consciousness" concerns the question of whether there are different classes in a given community or society and a sense of barriers or boundary lines between classes. "Class interest consciousness" refers to a set of beliefs about the identification of self interests with class interests, a distinction between the interests of different classes, or the belief that class conflict is necessary.

The association between class crystallization and each of the three types of class consciousness was examined on a sample of 613 cases from the Detroit metropolitan area study.

Results indicate that both consciousness of class status and consciousness of class interest increase with crystallization. However, for class structure consciousness, crystallization differences do not account for differences in class barrier consciousness. Rather, class barrier consciousness is a function of the joint impact of low crystallization and low status.

Summary and Conclusions

Research concerned with the personality concomitants of status crystallization (or related concepts) is a new frontier in status-personality research. Thus, there have been only a handful of these studies to date, and any generalizations would be highly dubious.

Nevertheless, status consistency looks promising as an antecedent variable. However, its newness raises several conceptual

and technical problems which are not as yet well understood. Some of these are discussed in the following section; others are examined in Chapters III, V, VI, and VII.

Critique

This section examines some of the major weaknesses in the assumptions and methods characteristic of the research surveyed in this chapter.

The Monotonic Assumption

Previous research has generally assumed that status-personality relationships are monotonic or single-valued. This is reflected in the concentration on linear data models. This is also reflected in the related assumption that status-personality functions are continuous rather than discontinuous. In short, it has generally been assumed that status effects on personality operate uniformly and unidirectionally over the entire range of social status.

Lack of Controls

The possible effects of other variables on status-personality covariations have not received sufficient attention. A few of the studies reviewed used some form of control.[6] From these few instances it is not clear whether certain status-personality relationships are spurious because of common associations with other variables, such as intelligence.

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[6]These were applied for two concomitants of social status: adjustment (Sewell and Haller, 1956), and levels of aspiration (Hieronymus, 1951; Sewell, Haller, and Straus, 1957). Lenski (1954) and Jackson (1962) used controls in examining the concomitants of status consistency.

On the other hand, we are not advocating the control of every variable that the researcher may have at hand. Rather, we are arguing for the systematic, but not indiscriminate, use of controls which will aid and not obfuscate the problem of hypothesis testing and interpretation.

Status Consistency as an Antecedent

Lenski's (1956a) insistence that certain "natural breaks" be observed seems to be based on arbitrary considerations. To call one's own cutting-points "natural breaks" without adequate theoretical or empirical support is a dubious practice. Similarly, to argue that only pronounced status inconsistencies (rather than both inconsistencies and consistencies) determine changes in dependent variables requires some theoretical justification.

On the other hand, Lenski's suggestion that attention to particular patterns of inconsistency may be fruitful seems appropriate. Again, however, theoretical justification has not been developed. Moreover, the possible merits of the pattern approach does not mean (as Lenski appears to imply) that research concerned with the concomitants of continuous measures of status consistency is not legitimate.

Finally, the question of which status dimensions constitute the "basic" components for a status consistency indicant is problematical. Lenski's implication that his and only his dimensions are "basic" requires a critical attitude.

Combined Effects as an Antecedent

There has been a conspicuous lack of attention to the possible functional importance of the joint effect of status and status consistency on personality consequents. Excluding the use of controls, Landecker (1963) is alone in showing the joint effect of the two status variables on class barrier consciousness.

The Antecedent System

The general approach of all the research surveyed has been to take either status or status consistency as the antecedent. This approach ignores the possibility of deriving a stratification system from several stratification variables and then using this system as an antecedent. This systems approach would facilitate the analysis of the personality concomitants of discontinuities in stratification, such as boundary and "class" analysis.

In short, insufficient attention has been devoted to a systematic conceptual analysis and specification of stratification as the antecedent system.

The Consequent System

Finally, research has not clearly demonstrated that certain classes of personality variables, and not others, are status-relevant. The identification of such functionally coherent domains would contribute to the parsimonious development of a theory (or theories) capable of accounting for the empirical observations and able to generate new hypotheses not presently anticipated.

In a word, the complexities of personality need to be systematically reduced to as few basic constructs as possible. Then the determination of which constructs are status-relevant may proceed systematically.

Summary and Conclusions

This chapter surveyed research dealing with the personality concomitants of social status and status consistency.

The congruence of the findings for social status suggests that there are stable and perhaps substantial relationships between status variables and personality variables. These are in the direction of

associating high status with personality adjustment and achievement orientations. Thus, two major classes of consequent variables are adjustment and achievement.

The findings for status consistency were based on only a few studies. Hence, generalizations do not seem warranted at this point. However, these studies suggest the possible importance of the personality adjustment concomitants of status consistency.

The weaknesses of previous research point to the need for work along new frontiers. Research seems to have exhausted the pay-off of monotonic bivariate models for articulating stratification and personality.

In our view, any new work needs at a minimum the clarification and specification of the antecedent and consequent systems, an exploration and comparison of monotonic and non-monotonic models, and systematic but not indiscriminate use of controls.

The following chapter examines problems in the conceptual analysis and ascertainment of social stratification as an antecedent system.

CHAPTER III

THE ANTECEDENT SYSTEM: STRATIFICATION

This chapter attempts to order logically the core concepts for social stratification theory and research, and to generate critical questions for status-personality research. To the extent that this goal approximates theory construction, this chapter is a modest attempt to provide a theoretical base for developing a model of stratification as an antecedent system.

This chapter reflects the belief that a clear specification of the antecedent system is a sine qua non for systematic status-personality research. A specification of the consequent system is also important, although we would take the position that it is second in priority. This is because the range of choice is much broader when one attempts to specify antecedents for personality than when one attempts to specify personality consequents for stratification.

The scope of this chapter is bounded by the view that stratification systems are multidimensional and that the units of these systems are organized along two axes--the hierarchical and the non-hierarchical. Major attention is given to the problems associated with discontinuities, boundary analysis, and ascertainment.

Overview

In general, sociologists view stratification as the hierarchical arrangement of units in a social system.[1] This section examines

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[1]Social stratification has only recently developed into a major area in American sociology. Thus, Gordon (1958, pp. 10-11) writes:

some of the core concepts in this view.

Definitions

Parsons (1953, p. 93) defines stratification as "the ranking of units in a social system in accordance with the standards of the common value system." Freedman, Hawley, Landecker, Lenski, and Miner (1956, p. 232) view stratification in terms of a series of rank systems. Each rank system is defined as "an hierarchical ordering of comparable social positions on the basis of variations in the degree of power vested in them by the group."

Other definitions emphasize specific units and the function of inequality in hierarchical arrangements. Kahl (1957, p. 12) views a stratified society as "one marked by inequality, by differences among people that are evaluated by them as being 'higher' or 'lower'." Gordon (1958, p. 238) states: "Stratification in a social order is a concept which refers to a vertical arrangement of persons--a hierarchy--a system of higher and lower, greater and lesser, superior and inferior."

Finally, Chinoy (1961, p. 131) summarizes many views when he writes:

> Stratification may be considered a process, a structure, a problem; it may be seen as one aspect of the differentiation of roles and statuses in society, as division of society into social groups or quasi-groups, as the social arena in which the problem of equality or inequality presents itself--or as all of these.

Consensually held classifications and evaluations are related to two important distinctions. One is the distinction between achieved

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"The area of investigation which may be called social class or social stratification could definitely be said to have arrived, by 1955, to the status of a major subdiscipline within the field of American sociology."

and ascribed status. The other concerns the contrast between community and society as bases for stratification.

Ascribed status is based upon relatively fixed criteria over which the individual has little or no control, such as race, ethnicity, or nationality. On the other hand, achieved status is based on qualities or attributes gained by actions of the individual, such as educational and occupational achievement.

Morris, Broom, and Selznick (1963, p. 197) suggest that stratification in America is based upon two different consensual bases:[2]

> There are probably two kinds of class order in the United States: (1) a number of separate class structures in small communities all over the country--structures seen and agreed upon only by certain members of those communities, and (2) nationwide classes, perceived vaguely by about three-quarters of the population.

The Multidimensional View

The multidimensional approach to stratification has its origin in the work of the German sociologist Max Weber (Gerth and Mills, 1946; Gordon, 1958). Weber pointed out that (1) there are several dimensions of stratification which must be kept distinct, and (2) a person's positions on each of these dimensions are not necessarily identical. The important dimensions for Weber are economic position ("class"), social status ("honor" or prestige), and "power" ("parties").

The acceptance and elaboration of the multidimensional view is reflected in the work of Parsons (1953), Stone and Form (1953), Freedman, Hawley, Landecker, Lenski, and Miner (1956), Kahl (1957),

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[2]Pfautz and Duncan (1950) have criticized the studies by Warner for failing to note the distinction between "community" and "society" as bases for social stratification.

Gordon (1958), and Williams (1960), among others. These authors either accept the Weberian scheme or elaborate it to include such dimensions as birth, personal qualities, personal achievement, and authority (Parsons, 1953, and William, 1960); occupation, education, and ethnic-racial descent (Freedman, et al., 1956); interaction, class consciousness, occupation, and value orientations (Kahl, 1957); and economic as well as political power (Gordon, 1958).

Discontinuities

The multidimensional approach leads to several important issues in stratification theory and research. One of these concerns the concept of social "class" as a structurally discrete aggregate of individuals who share certain distinguishing characteristics which set them off from other aggregates in the stratification system. These characteristics are assumed to be associated with important differences in patterns of social interaction, attitudes, economic consumption, and beliefs.

The social "class" issue involves questions concerning discontinuities in the hierarchical dimensions of stratification as well as in the "goodness of fit" between rankings based on the several dimensions.

Thus discontinuities provide a unifying theme for examining a variety of issues which revolve around the hierarchical and non-hierarchical axes of stratification systems.

Hierarchical Discontinuities

Four issues have been approached from the hierarchical perspective. These are (1) the choice of dimensions for the delineation of "classes," (2) the status continuum versus categorical hypotheses, (3) objective versus subjective definitions of "class," and (4) univariate models for boundary analysis.

Dimensions

Weber postulated economic criteria as the basis for delineating "classes." Others define class systems in terms of several stratification variables and other associated variables which contribute to the dynamics of stratification. Gordon (1958, p. 234) summarizes this view:

> The complex and innumerable interweavings of economic factors with politico-community power, with the status structure, with occupational pre-emption, with cultural attributes, and with group-life divisions constitute what might be called the social class system.

Gordon (p. 249) maintains that the term "social class" must be applied precisely to one of the stratification variables for the sake of conceptual clarity. He suggests that the single most appropriate dimension is that of social status because it is most closely related to the factor of "group life."

> Our hypothesis . . . is that, of the three basic stratification dimensions, it is the social status structure rather than the economic or political power dimensions which plays the largest immediate role in producing those social divisions, shifting and amorphous as they may be, of American communities which center around intimate friendships, clique life, association membership and participation, and intermarriage.

Continuum Versus Categorical Hypotheses

Landecker (1960) calls the categorical view the "class structure" hypothesis. This hypothesis holds that stratification differences in the United States exhibit "natural breaks" such that community status systems are composed of distinct structural units called "classes."

The status continuum hypothesis, on the other hand, denies the existence of "natural breaks" and argues that status differences are gradual and continuous rather than discontinuous.

Cuber and Kenkel (1954) and Lenski (1952) advocate the continuum hypothesis. Landecker (1960) views both hypotheses as partially adequate, each being appropriate for a different portion of the total stratification system. Gordon (1958) suggests that the empirical answer lies somewhere between the two extremes.

Finally, Cuber and Kenkel (1954) claim that the dimensions of "power" and "privilege," as well as the dimension of prestige or status, are in a continuum form in American society. Gordon (1958) argues that it is only on the status dimension that the issue is problematical.

Objective Versus Subjective Definitions

Social "class" has been viewed in terms of both subjective (psychological) and objective (sociological) phenomena. As an objective phenomenon, the delineation of "classes" is postulated on the basis of such factors as income, occupation, wealth or standard of living, and status or general social standing as estimated from the consensual classifications and evaluations of others.

As a subjective phenomenon, "class" is usually equated with "class consciousness," for which the "essence of class definition is self-attribution or self-affiliation" (Gordon, 1958, p. 194).

The "interest group theory of social classes" developed by Centers (1949) is an example of a class consciousness or subjective view of class systems. The interest group theory states that individuals in the same economic circumstances develop common interests and values concerning political-economic issues and a sense of common class membership. However, Centers (p. 27) distinguishes between stratification as an objective system and class as a subjective system:

> Classes are psycho-social groupings, something that is essentially subjective in character, dependent upon class consciousness (i.e., a feeling of group membership), and class lines of cleavage may or may not conform to what seem to social scientists to be logical

> lines of cleavage in the objective or stratification sense. . . . Class, as distinguished from stratum, can well be regarded as a psychological phenomenon in the fullest sense of the term.

Centers's approach to the delineation of social classes has been criticized in terms of the validity of his thesis and the usefulness and relevance of his conceptualization (Gordon, 1958, pp. 197-202). Chief among the criticisms are the naivete of polling techniques in ascertaining self-identification, the inadequacy of forced-choice type questions in an area of complexity, the ambiguity of the term "working class," and evidence that clearly polarized ideological groups do not exist on either a stratum or "class" basis.

Boundary Analysis

The use of the term "class" has two implications. One implication is that "classes" are structurally distinct but essentially contiguous. The other implication is that the boundaries between "classes" also constitute structural categories to which individuals may be assigned.

In short, the emphasis on discontinuity may vary from the idea of sharp "natural breaks" to the idea of smooth zones of transition. In the former, boundaries are merely nominal breaking points. In the latter, boundaries are aggregates having the same functional importance as the "classes" which they serve to delineate.

The fundamental issue in boundary analysis is whether there are discontinuities in a stratification system. Attempts to assess these discontinuities have taken one of two approaches. In one, the emphasis is directed to only the hierarchical facet of stratification. In the other, non-hierarchical arrangements are used as a basis for delineating discontinuities in hierarchical stratification.

The categorical hypothesis represents the first approach. However, the second approach holds that the categorical hypothesis is a sufficient, but not a necessary, condition for delineating discontinuities in a stratification system.

The first approach uses a basically unidimensional boundary model. This model will be discussed in the following paragraphs. The second approach uses a multidimensional boundary model, and examples of this will be discussed in a subsequent section.

The unidimensional boundary model seeks "natural breaks" in the distribution of either hierarchical stratification variables or variables assumed to be associated with stratification variables. The general assumptions of this model are: (1) fewer individuals exist at the boundaries between "classes" than within the "classes," and (2) both stratification and associated variables are distributed discontinuously at the boundaries.

Duncan and Artis (1951) stratified a population of approximately 2,100 persons by eight different methods, examined the resulting intercorrelations, and correlated each of the eight methods with indices of social participation in the community.

Findings indicated that the relationships between stratification methods and types of social participation revealed no clean "breaks" in the dependent variable. Rather, there were only gradual changes indicating a lack of discreteness of the groupings on the stratification methods.

Duncan and Artis conclude that none of the methods proposed for delineating "classes" provides an unique solution to their number and their boundaries, and that therefore the researcher should avoid a tendency to reify any particular empirical scheme.

Summary and Conclusions

Gordon's (1958) suggestion that the social status structure is the most important factor in delineating social "class" appears to be a reasonable and parsimonious approach to the problem of hierarchical discontinuities. Further, because we dislike being impaled on the horns

of a dilemma, the balanced view of the continuum versus categorical issue argued by Landecker (1960) and Gordon (1958) seems theoretically adequate and empirically testable.

We prefer the objective rather than the subjective definition of stratification or "class" for a simple but fundamental reason. In status-personality research, the psychological concomitants of stratification are problematical. Thus, if we are to avoid begging the question, the conceptual specification of the antecedent system (stratification) must be analytically independent of the conceptual specification of the consequent system (personality). This seems to us to be sound scientific procedure.

Finally, the inadequacies and ambiguities of unidimensional boundary models point to the need for developing models of boundary analysis which provide analytically unique and theoretically meaningful solutions. Indeed, the problem of boundary analysis is fundamental to any attempt to articulate personality with stratification systems.

Non-Hierarchical Discontinuities

Having discussed some characteristics of multidimensional hierarchies, we now turn to a second organization principle in stratification, the non-hierarchical.

The multidimensional view of stratification raises the question of the extent to which different positions on the several dimensions converge or diverge in an individual. This is the problem of status consistency.

Another non-hierarchical aspect is that of "status conflict" (Gordon, 1958) or "status instability" (Stone and Form, 1953). Status conflict refers to the extent to which consensus about the status of groups is present among the members of a community.

Finally, the concept of status consistency may be generalized to characterize groups rather than individuals. This has been termed "stratum attribute consistency" (Broom, 1959) and "class crystallization" (Landecker, 1963).

Status Instability or Conflict

The basic idea of status conflict or status instability is put cogently by Gordon (1958, p. 178):

> Obviously the concept of a system of hierarchical statuses depends on the assumption of a widespread consensus on the standards of evaluation and at least an oblique concession of status inferiority by those at the alleged bottom of the status hierarchy. If such common standards and widely dispersed consensus do not exist, then some form of opposition of status claims may be present which could hardly be placed within the framework of status hierarchy.

Stone and Form (1953) elaborate the concept of status instability based on research on the status structure of a small Midwestern city. Stone and Form suggest that while hierarchical arrangements are most stable, there are other types of status arrangements which they regard as instabilities tending toward a hierarchy. Specifically, they (p. 152) maintain that "By subtly fostering the notion of hierarchy, the term 'stratification' blinds the investigator to negative cases."

Stone and Form identify three empirical types of status instability. (1) "Status opposition," where two or more status groups are contesting for the same status position and thereby existing in an horizontal relationship. (2) "Vertical polarization," where extreme status groups are recognized but where the middle area is simply a "status aggregate" lacking clear status differentiation. (3) "Unranked status groups" for which there is no community consensus on their ranking. For example, bohemians, intellectuals, artists and politicians.

Status Consistency

The concept of status consistency received early treatment by Benoit-Smullyan (1944). He distinguishes three types of "status": economic, political, and prestige, noting that an individual or group may occupy different positions in each of these hierarchies. He introduces the notion of "status conversion," whereby a high standing on one dimension is used to obtain high standing on the other dimensions. Furthermore, as a result of status conversion processes, there is a tendency for "status equilibration" where a high correlation emerges among the different types of status. This high correlation is called an "equilibrium status structure."

Hughes (1945) discusses "dilemmas and contradictions of status" which stand in contrast to the process of "status conversion" noted by Benoit-Smullyan. Hughes (p. 353) writes:

> In the struggle for achievement, individual traits of the person stand out as separate entities. And they occur in peculiar combinations which make for confusion, contradictions, and dilemmas of status.

Dilemmas of status assignment arise primarily out of occupational mobility. This is exemplified by the Negro professional man. Hughes (p. 367) writes: "The dilemma, for those whites who meet such a person, is that of having to choose whether to treat him as a Negro or as a member of his profession."

Broom (1959) suggests that the concept of individual status consistency represents the convergence of the social psychological and the structural interests of sociology. Broom indicates several ramifications of the concept.

First, status consistency "allows for analysis of the consistency or inconsistency of the behaviors invoked by the several statuses" (pp. 430-431).

Second, he distinguishes (as does Lenski, 1954) two aspects of status consistency. (1) As a positional variable reflecting the overall goodness of fit between several status scores, and (2) as a pattern variable indicating status profiles independent of the particular positional score.

Finally, Broom discusses the difference between objective differences in status positions and the individual's awareness of his status consistency or that of another person. Awareness, as an intervening variable, is viewed by Broom as social psychological rather than positional. Thus, he maintains that awareness cannot be imputed a priori from measures of status consistency.[3]

Finally, there are two different interpretations which may be applied to the concept status consistency.

In any series of criteria used for assigning social status, some are objective hierarchies on which a person has an objective position. In this instance status consistency may refer to the degree of congruence among the objective positions.

On the other hand, these objective positions may be the basis for segmental status judgments for the individual by others (Gordon, 1958, p. 189). In this instance status consistency may refer to the agreement among the segmental status judgments.

"Stratum Attribute Consistency"

Broom (1959) views the concept of status consistency as simply part of a more general problem of goodness-of-fit. Thus, the concept

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[3]Indeed, the same argument has been presented by Sampson (1963). However, Lenski (1954), Gordon (1958), and Jackson (1962) do not make this distinction explicit, although their formulations clearly assume awareness as a mediating process.

may be generalized to the analysis of group.

One of these generalizations is called "stratum attribute consistency" by Broom and refers to the consistency of statuses within a group as compared to other groups at the same and different stratum levels.

Another similar concept is that of "class crystallization" as used by Freedman, et al. (1956) and Landecker (1960, 1963). Landecker (1963) defines "class crystallization" as

> the degree to which mutually equivalent rank levels of different rank systems coincide in their incumbents, thereby forming social classes and class statuses.

This concept and its use in boundary analysis is examined in the following section.

Summary and Conclusions

The concept of a "status aggregate," examined by Stone and Form (1953), is of considerable importance. It suggests a view of boundaries as substantive rather than nominal structures in a heterogeneous stratification system.

Further, the idea of segmental status judgments has two implications. For one, it permits a view of status inconsistency as both a possible antecedent and consequent of lack of community consensus on the statuses of various social units. Second, it emphasizes the importance of awareness of discrepancies in segmental status judgments (rather than merely objective statuses) for the personal consequences of status inconsistency.

Finally, the generalization of individual status consistency to characterize groups provides the basis for designing multidimensional boundary models. The implication of the concepts examined in this section for boundary analysis is summarized in the section on "Ascertainment" later in this chapter.

Multidimensional Boundary Analysis

Two similar but importantly different techniques for ascertaining "class" boundaries have been proposed. These are by Freedman, et al. (1956) and Landecker (1960).

Freedman, et al. (pp. 232-236) begin by distinguishing between "rank systems" and "class systems."

An individual may occupy positions in several rank systems such as those based upon differences in income, occupation, education, and ethnic-racial descent. The authors suggest that one of the important problems in stratification is the degree to which the rank systems constitute a single, coherent structure. "Class crystallization," the basis for class systems, is assumed to exist to the degree that consistency between rank systems exists.

The authors acknowledge that the existence of a class system is a matter of degree, depending upon the extent to which class crystallization has occurred. Thus (p. 234):

> to the degree to which a category or group of persons occupy approximately equivalent positions in the major rank systems of the society, they constitute a class.

Finally, the consequences of these conditions are stated (p. 236):

> differential association by class is a function of the degree of class crystallization and the vertical distance between classes.

Figures 1 and 2 below are adopted from the authors. Figure 1 shows a lack of class crystallization among three rank systems, while Figure 2 indicates an instance of perfect class crystallization.

There is a difficulty in interpreting Figure 2 which apparently is not recognized by the authors. That is, how many "classes" are there in Figure 2? Two interpretations are possible. On the one hand, Figure 2 may indicate three classes, one for each perfectly crystallized

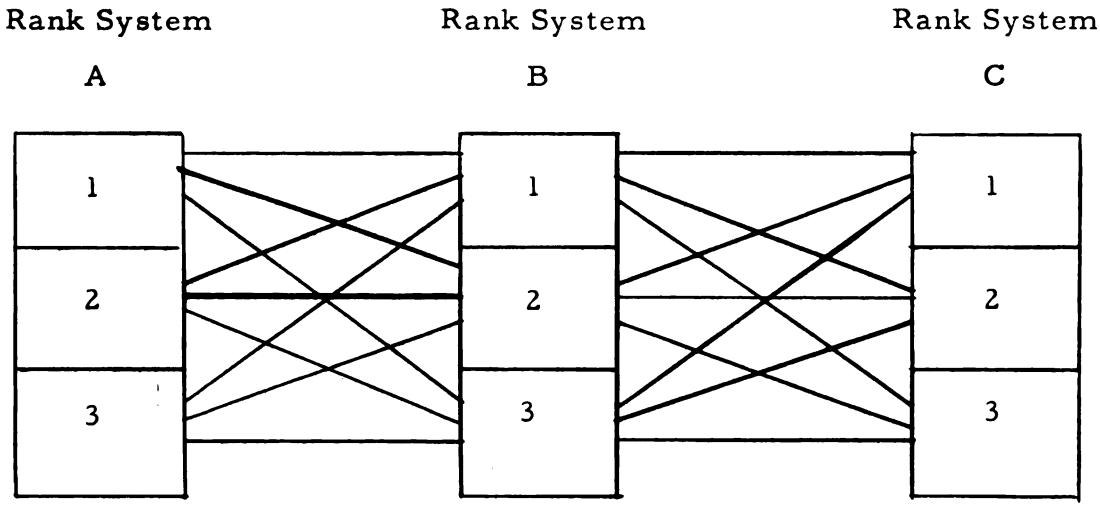

Figure 1. Lack of class crystallization (each connecting line represents one-third of all persons on a given rank level).

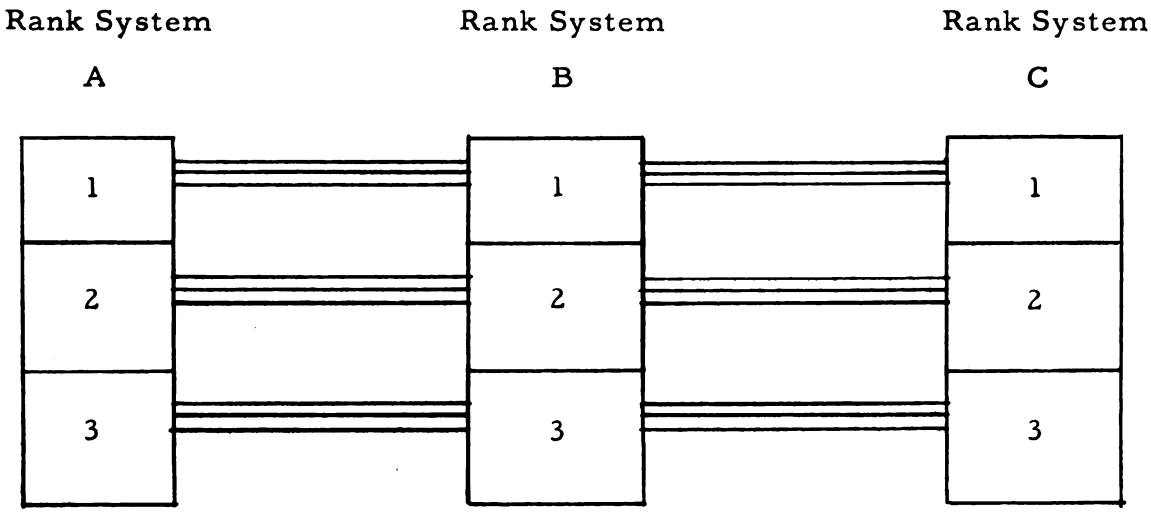

Figure 2. Perfect class crystallization (each connecting line represents one-third of all persons on a given rank level).

rank level. Or, Figure 2 may indicate only one class, composed of three rank levels which are continuous.

Since the question of continuity and discontinuity is the issue, the model as presented does not provide an analytically unique solution to the problem. Moreover, if one class is indicated, then no boundaries exist. The entire stratification system is homogeneous.

Landecker presents a very similar model in terms of rank systems. However, Landecker defines boundaries not as the absence of crossovers between non-adjacent positions on rank systems (as Freedman, et al., imply), but rather by the condition such that "incumbents of contiguous ranks in one rank system occupy noncontiguous ranks on the other rank systems."

Thus, Landecker goes beyond the mere specification of status consistency as a criterion of classes by recognizing that boundaries also must be defined. In addition, Landecker introduces the possibility of specifying the magnitude of a boundary in terms of the degree to which incumbents of any two contiguous ranks of one rank system are separated in other rank systems.

Landecker's approach may be conveniently discussed by referring to Figure 3 which is taken, with minor adaptations, from his paper. The letters in Figure 3 refer to persons; the numbers refer to ranks in each rank system.

Landecker's model allows some deviation from perfect crystallization for the assignment of encumbents to the same class position. In fact, in operationalizing the model, class boundaries are simply a matter of degree.

The model as originally illustrated by Landecker indicates a class boundary where there are no crossovers of the ranks of encumbents on the rank systems, and postulates classes where there are crossovers of only one rank difference. However, this is simply a

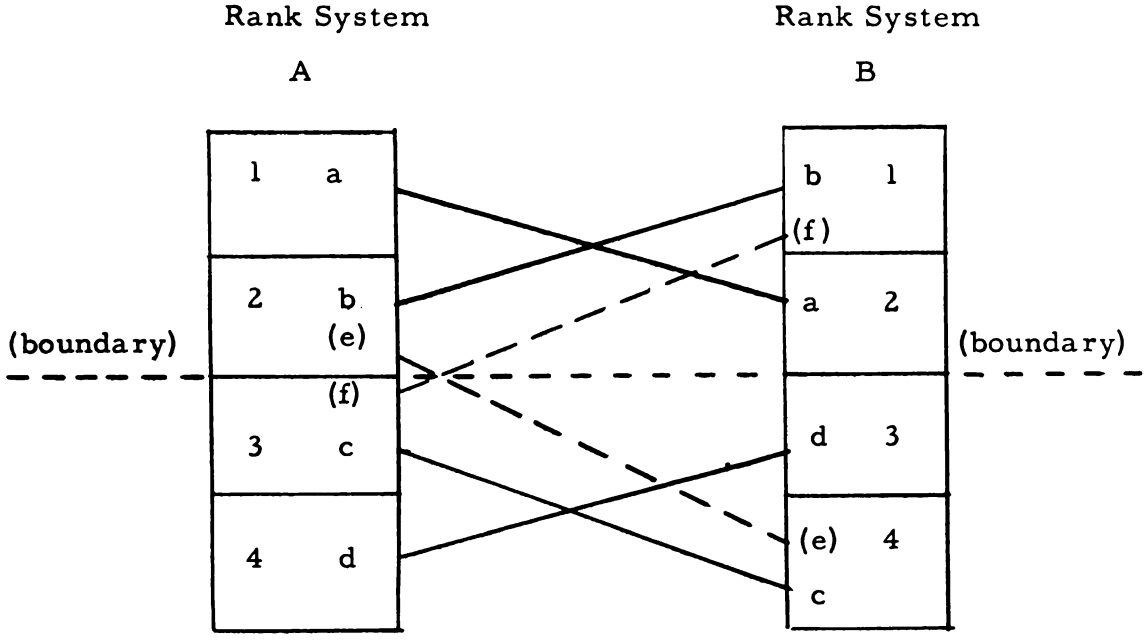

Figure 3. Schematic presentation of a class boundary.

slight modification of the scheme presented by Freedman, et al., and consequently the specification of the location of the boundary is unique only if ideal conditions are met.

Landecker's actual definition (p. 871) shows that something was missing in the figure originally presented, and our modifications are designed to make the schematic model fit the definition:

> The presence of a boundary is indicated by the fact that incumbents of contiguous ranks in one rank system occupy noncontiguous ranks in the other rank system.

Therefore, we have introduced persons (e) and (f) to show the conditions for the existence of a class boundary. Our modifications are set off by parentheses and dashed lines.

The operationalization of the model is achieved by standardizing the unit of rank scores, successively estimating the rank difference for each rank system by computing the inter-rank distances of the adjusted means on three other rank systems, and then combining these rank differences into an overall class boundary index.

The technique presented by Landecker is involved, tedious, and in several places obscure. He finds a single boundary in his investigation between the highest and second highest status percentile. This implies, of course, that boundaries as such are not structural units.

Summary and Conclusions

Status consistency provides a beginning for constructing multidimensional models for stratification boundary analysis. Moreover, as Landecker (1960, p. 877) has noted:

> The view suggested by these findings is that neither the class structure nor the status continuum hypothesis takes precedence over the other, but rather that each is appropriate to a different portion of the total system of stratification. (emphasis ours)

However, the first boundary model does not satisfy a unique solution for the number of "classes." Further, both models result in

nominal rather than substantive definitions of boundaries. These and other measurement problems are examined in the following section.

Ascertainment

Problems of ascertainment in stratification research have been obliquely recognized in the previous discussions. This section provides a brief outline of general methods and examines specific issues concerning functionally coherent domains, status consistency, and boundary analysis.

General Methods

Sociologists have used three fundamental methods in studying social stratification (Morris, Broom, and Selznick, 1963). These are (1) the objective approach, (2) the subjective approach, and (3) the reputational approach.

1. Objective approach. In the objective approach the investigator stratifies a population on the basis of criteria which he assumes most accurately describe the social behavior he is attempting to understand or predict. These criteria are frequently income, occupation and education. However, any criteria which are objectively ascertainable, whether by observation or instrumentation, may provide the basis for this approach. The fundamental logic is that the investigator does the stratifying.

In contrast, the subjective and reputational approaches generate a stratification system from the point of view of the members of the society or group. However, both are "objective" in the sense that they are attempts to arrive at valid knowledge through systematic observation.

2. Subjective approach. The logic of the subjective approach is to determine where members of a social system place themselves with

respect to stratification categories. Usually, although not necessarily, this approach is typical of attempts to discover subjective strata from which the investigator infers social "class" membership, "class consciousness," and "self-attribution or self-affiliation" (Centers, 1949; Gordon, 1958; Landecker, 1963). This approach is also useful in determining the number, size, and arrangement of subjective strata. Its application has frequently been justified on the basis of the argument that it is more important to know the position a person thinks he occupies than where others place him.

3. Reputational approach. Finally, the reputational approach establishes a stratification order by having the members of a community classify each other, evaluate the categories, and rank them in a hierarchy. Usually, only a portion of the members serve as judges, depending upon criteria such as length of residence and knowledge of the community. The segmental judgments or ratings are combined to provide an overall picture of the stratification system.

A major limitation of the reputational approach is its requirement for a fairly small sample (to insure the range of acquaintance of the judges). In addition, lack of consensus among the raters and differences in the criteria and classifications employed by persons at different positions in the stratification system are limitations of this approach.

4. Comments. Differences in the stratification structure as seen by the scientist and by community members, as well as differences among community members, raises the question of whose view is more correct. Morris, Broom and Selznick (1963, p. 185) argue that "the point of view that is 'best' depends entirely upon what is to be predicted with it."

However, the issue is more complex than this solution would seem to imply. Form and Stone (1957) attempted to assess "the relative importance which laymen place upon the symbolism which the sociologists

use, insofar as the laymen use such symbols in their placements and appraisals of others."

Findings indicated that of twelve status indexes presented, seven were judged by a majority of respondents to be irrelevant or unimportant in appraising others. These seven were household furnishings, income, occupation, organizations and clubs, type of house, clothing, and type of neighborhood.

Since occupation and income are often used by sociologists, this finding, as noted by Form and Stone, is somewhat "surprising." We might suggest that "unnerving" may be a more appropriate term. However, the authors offer a possible "tranquilizer" by suggesting that respondents may have taken this opportunity to "play down" status differences in the community.

The five indexes which were judged to be "important" by a majority of respondents were credit rating, education, family, race, and religion.

Finally, judgments of education and occupation were found to be significantly associated with the socioeconomic stratum of the respondent. Lower status respondents tended to judge education and occupation as less important symbols than did upper status respondents. Form and Stone (p. 514) conclude:

> Since education and occupation are very frequently used by sociologists in stratifying communities, it may be argued that they are really viewing the community through the eyes of high status groupings. . . . The other, and perhaps more pertinent, interpretation would acknowledge that the members of the higher strata of the community are in fact the bestowers of community status; but, until more searching investigations of precisely the mechanisms of status bestowal are undertaken, the problem will remain unresolved.

Coherent Domains

The apparent lack of consensus between respondents and sociologists on the important symbols for stratification may not be serious. This is because most of the symbols produce substantially correlated, and hence equivalent, rankings. Thus, even if a respondent denies the importance of occupation and in fact stratifies others in terms of education, for example, the results are roughly equivalent to those obtained were he to use occupation as the criteria. Evidence for this view comes from several sources.

Reiss (1961, p. 84) found substantial rank correlations between NORC occupational prestige scores and median income level (+.85) and level of educational attainment (+.83). On the other hand, there is evidence that stratification variables constitute two functionally coherent domains both of which contribute to an overall estimate of socioeconomic status.

Auld (1952), in his survey of status-personality research, noted the varying emphasis on economic differentiae (income or possessions) and social differentiae (prestige or esteem). Two factor analytic studies tend to substantiate the functional basis for this distinction.

Kahl and Davis (1955) factor analyzed the intercorrelations of 19 socioeconomic status indexes on a sample of 219 residents of Cambridge, Massachusetts. They found that it was possible to account for more variance by extracting two factors rather than one. The first common factor was composed of various measures of occupation, education and self-identification. The second common factor contained ecological measures such as house and residential area characteristics, plus measures of the status of the subject's parents.

Atherton (1962) found marked agreement with the findings of Kahl and Davis on a sample of 242 in Berkeley, California. Variables, ascertained in 1928 and 1929, were: home environment, income,

education, occupation, and census tract measures. The intercorrelations of 20 variables were factor analyzed. Results showed that two factors, accounting for 65 per cent of the total variance, were associated with occupational and educational variables versus housing and other material variables.

Three points should be noted in interpreting and evaluating these findings.

First, the socio and economic dimensions of stratification indicants should not obscure that fact that these dimensions are substantially correlated. Thus, a measure which includes both dimensions may yield a more reliable estimate of social status even though such a measure is not strictly factorially pure. More precisely, such a measure should be called "socioeconomic," thus indicating the fact that it is a measure of at least two aspects of stratification.

Secondly, the substantial but imperfect correlations among stratification variables indicates that for any given individual the equivalence of such indicants may vary widely. Indeed, if this were not so, concepts such as status consistency would not be meaningful. Moreover, the degree to which various indicants may be considered equivalent ways of stratifying a population depends on the extent to which the associated rank systems are crystallized in the population. Since populations may differ in their overall consistency, composite measures developed in one group may not be applicable to another group.

Finally, the fact that any set of stratification variables are not perfectly correlated should not be taken as the basis for an argument against the use of composite measures of status. However, the researcher should be aware that such composite measures are approximate, that they may summarize a series of imperfect but nevertheless significant segmental judgments of status, and that the composite may include variation from several stratification components.

Thus, the view expressed by Gordon (1958, p. 218) seems to us to be unnecessarily restrictive:

> . . . the framers of a scale must choose which of the stratification components they wish to measure. To lump them all together is justifiable neither on any theoretical basis, nor on the basis of available research evidence considered in earlier chapters, which indicates that these stratification components do not vary perfectly with one another.

Status Consistency

There are five important considerations in ascertaining status consistency and associated concepts.

First, the scores for each rank system must be standardized such that they are comparable. Lenski (1954, 1956b) and Landecker (1960, 1963) used cumulative percentages or percentiles, while Jackson (1962) used ranks. These scores are then combined such as to yield a composite measure of status consistency and/or a pattern of status consistency for an individual.

Lenski's (1954) technique for a composite measure is:

$$SC = 100 - \left[\sum_{i=1}^{n} (X_i - \bar{X}_n)^2\right]^{\frac{1}{2}}$$

where: X_i = percentile score on rank system i.

$\bar{X}_n$ = the mean of the n scores on n rank systems.

100 = a constant so that high variance among the rank system scores would yield a low status consistency score.

SC = measure of status consistency for the individual.

Lenski justifies the use of squared deviations from the mean in order to emphasize the effect of larger deviations and to minimize the effect of smaller deviations.

A second consideration which has not been recognized by those attempting to ascertain status consistency is the comparability of the shapes of the distributions of the scores for each rank system. This is not a matter of each distribution having a specified shape, such as normal, Rather, it is that each distribution should have roughly the same shape, be it normal, rectangular, skewed, or whatever.

This is necessary to insure that the positions of individuals on one rank system may be duplicated on any other rank system. In short, if there are n slots on rank system A for high status, then there should be n slots on all other ranks systems for high status. If there are not, then it is not possible for all n persons to occupy equivalent positions on each rank system.

In a word, the distribution characteristics of the indicants for each rank system should not introduce spurious distortion in the assessment of the composite measure of status consistency.

Another issue concerns the inclusion of achieved and ascribed rank systems in a composite measure of status consistency. Both Lenski (1954) and Landecker (1960) include achieved and ascribed statuses in their investigations. Landecker justifies this simply on the desire to select as broad a range of rank systems as permitted by the data. Lenski's choice is based upon the assumed importance of the selected rank systems. Neither appears to recognize the possibility that status consistency based entirely on either achieved or ascribed statuses may have different implications for the individual.

There is a fourth consideration which is related to the above, and which has not received sufficient attention from those using the status consistency concept. This is the assumption that the importance of the different rank systems is equivalent. That is, is being high on one rank system equivalent to being high on another rank system?

This issue is obliquely recognized by those who emphasize the importance of status consistency patterns. However, it applies equally well to measures of composite status consistency.

In short, the various rank systems may require different weights in computing status consistency depending on the particular rank levels involved. We see no easy and immediate solution to this problem, but suggest that it may be part of the general problem of differential weights for the segmental status components of a composite measure of status.

Finally, there is the somewhat dubious introduction of a so-called "statistical artifact" in treating the validity of status consistency scores for those having extremely high or extremely low general status scores. Landecker (1963, p. 222) argues:

> Since a composite measure of status can yield extremely high or low values only in those cases where its component scores are either consistently high or consistently low, strong crystallization is necessarily associated with a larger proportion of relatively extreme status scores than is weak crystallization.

Landecker considers this a "statistical artifact" and hence a "bias." However, this line of reasoning appears faulty. In the first place, "statistical artifact" and "bias" implies that the operation in question introduces characteristics in the data which are functions strictly of the operation and which do not represent a valid picture of the "real world." But individuals with extremely high or low general status positions would indeed exhibit a high degree of status crystallization. This does not indicate a "bias" in the instrument, but rather a consequence of the manner in which status consistency is conceptualized. If the instrument did not reflect this characteristic, then it would be biased.

Secondly, while it true that extreme status positions are necessarily associated with high status consistency, it does not follow that the mid-range of status should have proportionately less crystallization.

It may have an equally high degree of crystallization, but the freedom of consistency variance for individuals in the mid-range of a composite measure of status is simply a characteristic of the stratification system as conceptualized.

Boundary Analysis

We maintained earlier that the ascertainment of "social class" basically involves the issue of continuities and discontinuities in stratification systems. We recognized, however, that other criteria such as differential association, values, and "class consciousness" were important. However, our point was that boundary analysis is a necessary but not sufficient condition for the delineation of "social classes."

Two boundary analysis models were distinguished. One, a unidimensional model, attempts to discover discontinuities in the hierarchical dimension of stratification. The other model was described as multidimensional because it attempts to map discontinuities in one stratification axes (consistency or stability) on to another stratification axes (hierarchical status).

In our view the multidimensional model is superior for two reasons. First, it provides a sociologically more meaningful view of boundaries by integrating a variety of stratification concepts. Second, it allows the specification of boundaries as structural units on the same level as "classes."

Boundary analysis must be objective and analytically sophisticated. To depend upon the classifications of respondents entirely is to invite complete classificatory anarchy. A study by Lenski (1952) cogently illustrates some of the pitfalls.

Using the reputational approach, Lenski instructed twenty-four respondents in a New England community to (1) indicate the number of

classes in the community and (2) rate families as to their class position. Findings showed that there was little consensus on the number of classes. Most importantly, several raters volunteered the information that they could subdivide the families almost indefinitely!

Thus, if boundary analysis is to contribute to the solution of class analysis and associated issues such as the status continuum versus status category hypotheses, techniques which allow the possibility of an unlimited number of discrete classifications must be avoided. In the final analysis, the view that stratification systems consist of both continuous and discontinuous features appears to be the most promising.

In conclusion, the problem of boundary analysis presents an important focus for the concerns of social psychology. It provides an analytical bridge between individual status consistency concepts such as "status conversion" (Benoit-Smullyan, 1944), "dilemmas and contradictions of status" (Hughes, 1944), and "marginality" (Lenski, 1954) on the one hand, and group or structural concepts such as "equilibrium status structure " (Benoit-Smullyan, 1944), "status instability," "vertical polarization," and "status aggregate" (Stone and Form, 1953), "status conflict" (Gordon, 1958), and "stratum attribute consistency" (Broom, 1959) on the other hand.

In our view, the boundary models of Freedman, et al. (1956) and Landecker (1960) should not, like the proverbial baby, be "thrown out with the bath" simply because their designers have still retained a nominal definition of "class" boundaries. As we shall show in Chapter VI, the view of Stone and Form (1953) regarding the existence of "status aggregates" interposed between two polarized status groups may be incorporated in a boundary model.

Summary and Conclusions

This chapter surveyed selected core concepts in stratification theory and research. Social stratification is defined as a hierarchical arrangement of social units based on consensually held classifications and evaluations. A multidimensional view of stratification is supported by the use of a plurality of stratification symbols by sociologists and respondents. However, there is also a non-hierarchical axis in the organization of stratification systems. This, in conjunction with the multidimensional view, generates questions of goodness-of-fit between the dimensions.

The problem of discontinuities in stratification systems provides the framework for delineating social "classes." Status structures are viewed as the fundamental bases for ascertaining a "class" system. Status, in turn, is seen as a function of segmental judgments although status is often measured in terms of a series of objective status positions.

The objective, subjective, and reputational approaches to the study of stratification were discussed and evaluated. Findings concerning the coherent domains of stratification indicants were offered as a partial remedy for discrepancies between stratification as seen by the sociologist and by respondents. Composite measures of social status, which seem to be justified by the present state of the art, are generally indicants of socioeconomic status.

Finally, the advantages of multidimensional boundary models were examined. It was concluded that one of the major inadequacies of current models is their nominal rather than substantive definitions of boundaries. In a word, analytically adequate models for delineating boundaries are viewed as necessary but not sufficient for ascertaining social "classes," or heterogeneous stratification systems.

Two models, incorporating both the hierarchical and non-hierarchical axes of stratification, are developed in Chapter VI. One of these is a monotonic model, the Amplifier model. The other, a non-monotonic model, is called the Nodular model. The Nodular model is the basis for developing a new technique for boundary analysis, the status structure model. The status structure model is derived from stratification variables, but permits the articulation of stratification as a system with personality.

The next chapter examines certain problems in conceptual analysis and ascertainment for the consequent system, personality. Chapter V attempts to synthesize the outcomes of specifying the antecedent and consequent systems by examining a variety of ways of articulating the two systems.

CHAPTER IV

THE CONSEQUENT SYSTEM: PERSONALITY

This chapter examines several conceptual options in developing a view of personality for status-personality research, and presents our view of personality. This view forms the basis for the models of articulation which are presented in the following chapter.

The conceptual options examined in this chapter do not exhaust the range of issues in personality theory. Moreover, it is not the purpose of this chapter to attempt to review theories of personality. Rather, we have selected those issues which, in our judgment, provide the basic points of departure for formulating personality as the consequent system in status-personality research.

Finally, while the preceding chapter attempted to provide a detailed specification of the antecedent system, this chapter is more modest for three reasons.

First, it is our position that a detailed specification of the antecedent system is more fruitful (and more necessary) for status-personality research in its present state of development. Second, while there is substantial consensus among sociologists regarding the focal concepts and problems for stratification theory, personality theory is characterized by pluralism and lack of convergence. Finally, personality theories (unlike stratification theories) tend to be general theories of behavior and hence highly complex (Hall and Lindzey, 1957, p. 18).

Nevertheless, we grant that a detailed specification of personality as the consequent system in status-personality research is needed. However, this task is beyond the scope of this dissertation.

Overview

Definitions

Allport (1937, 1961) has reviewed scores of definitions of personality. He has classified these under three main types: (1) biosocial, (2) biophysical, and (3) positivist.

The biosocial definitions tend to define personality in terms of the perceptions of others and the external effect an individual has on others. It is a social or "outer" view of personality.

The biophysical definitions view personality as an objective entity, having its own life-history and existence apart from the perceptions of other people. This "essentialist" view, which Allport prefers, holds that personality is what a person "really is."

Finally, positivist definitions maintain that the "internal structure" of personality is inaccessible to science and cannot be known directly. Personality is defined as a construct which cannot go beyond the operations used to measure it.

Inkeles (1956) views personality in terms of three levels. One level is that of the basic personality mechanisms such as aggression and anxiety. A second level involves the specific but highly generalized orientations of the individual to himself and to significant others. The third level is characterized by the more or less conscious idea systems of the individual.

The formulations of Allport and Inkeles suggest that there are various levels or aspects of personality which may be selected for articulation with stratification. As we shall show in subsequent discussions, the differential status-relevancy of these various levels is problematical.

Personality and Environmental Systems

Personality theory as a general theory of behavior includes within its purview all environments in which the human organism is implicated. Thus, stratification systems, as a specific class of social environments, are relevant to personality theory. However, personality theory has not yet mapped an environmental taxonomy comparable to the taxonomies of personality. Therefore, personality theory as such does not offer a direct means for formulating a theory of status-personality dynamics.

As we shall attempt to show in the following chapter, the conceptual analysis of stratification, as a specific environmental system, provides some leads for describing the articulation of personality with status variables. Thus, in a modest way, we are contributing to a systematic explication of an aspect of the social environment in which personalities are implicated. The need for this type of explication in the study of human behavior has been noted recently by Sells (1963, p. 700):

> The most obvious need in evaluating the manifold encounter of organism and environment is a more satisfactory and systematic conceptualization of the environment. This implies a taxonomic, dimensional analysis of stimulus variables comparable to the trait systems that have been developed for individual difference variables.

Sociological Reductionism

The specification of stratification as the antecedent system in no way commits us to a position of sociological reductionism. Stratification and personality represent different analytical foci. Their similarity lies in that both may be viewed as systems of action (Inkeles, 1963, pp. 318-320). Thus, each is relevant for an understanding of the other, and for predicting behavior.

For example, sociologists have used the concept of social stratification to explain and predict a wide range of social behavior. This behavior has ranged from patterns of social interaction, economic consumption, and social mobility to political attitudes, voting patterns, and mental illness. In this view, social behavior is a consequence of the individual being implicated in particular social environments.

On the other hand, personality theory views a general class of behavior as a consequence of a particular subjective system of organismic attributes. This system is characterized as being transportable from one environmental system to another.

Basic Concepts

Homeostasis

Stagner (1951) views the process of homeostasis as a unifying concept in personality theory. He presents personality development as an evolutionary process whereby the centrality of biological functions are replaced by the centrality of ego function. Generalizing from the balance of organic functions, persons are seen as striving to maintain a constant physical and social environment.

Several current cognitive personality theories reflect an emphasis on homeostatic features of personality. Concepts such as balance (Heider), dissonance (Festinger), and congruity (Osgood and Tannenbaum) parallel the interest in goodness-of-fit in stratification theory (see Katz, 1960, Zajonc, 1960, and Broom, 1959).

Functionally Coherent Domains

The criterion of parsimony in science requires that the complexities of personality be reduced to as few constructs or variables as

possible. There are two implications of this criterion for status-personality theory and research.

First, there is the specification and description of the total personality by the psychologist. Many theorists attempt to do this by conceptual analysis. However, factor theorists such as Cattell (1957) have attempted to ascertain a minimum number of explanatory constructs by the application of multivariate analysis to objective questionnaire data.

Second, there is the problem of culling from these basic personality dimensions those which are status-relevant. This task also involves determining the number of status-relevant domains, and whether these require one or several theories for explaining their status-relevancy.

In our view the approach of factor analysis is empirically sound and a partial corrective to conceptual anarchy. Further, this approach is congruent with the nomothetic perspective, discussed in a following section, and provides the basis for several analyses described and presented in Chapter VII.

Finally, two possible functionally coherent domains were suggested in our literature review in Chapter II. These are the adjustment and the achievement domains. Hypotheses concerning these are presented in Chapter VI and tested in Chapter VIII.

Open Versus Closed System Perspectives

Allport (1960) regards all sharp controversies in personality theory as probably arising from two opposed points of view--the closed or quasi-closed system and the open system views of personality.

Four criteria for open systems are presented by Allport. The first two are accepted by most current theories of personality.

The last two are specific characteristics of open systems. The four criteria are:

1. Material and energy exchange.
2. Requirement for a steady state.
3. Elaboration of internal order.
4. Transactional criterion.

Stimulus response theory and methodological positivism concentrate on material and energy exchange. Other theories (e.g., psychoanalytic) emphasize the satisfaction of needs, the reduction of tension, and the maintenance of equilibrium as basic problems in personality dynamics. These focus on the requirement for a steady state, or homeostasis.

The first two criteria "emphasize being rather than becoming." Other theories focus on the third criterion and emphasize the tendency of human personality to go beyond steady states and to strive for the enhancement and elaboration of internal order. For example, Maslow (1954) discusses the distinction between deficiency motivation and growth motivation, the elaboration of need-hierarchies, and the concept of "self-actualization."

Finally, many theories view personality as integumented, as residing entirely within the skin of the organism. However, at the human level there is more than an exchange of matter and energy, "there is extensive transactional commerce with the environment." This fourth criterion is emphasized by theorists who define personality in terms of social interaction, role, or some form of field theory.[1]

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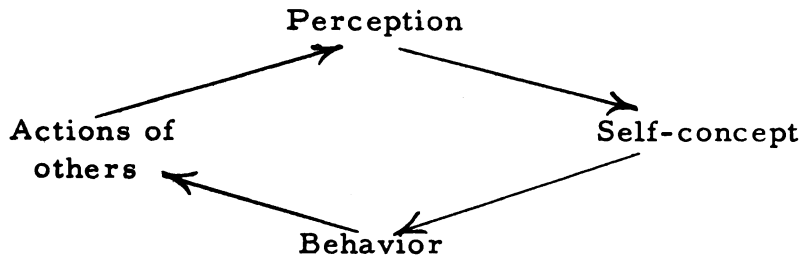
[1]For example, see Yinger (1963) for a field view of personality. G. H. Mead's contribution illustrates a view of personality as the stage on which social interaction is "played out" by the individual (Bolton, 1963, p. 9).

Allport accepts the validity of the fourth criterion but admits that he, as most other Western theorists, has held the integumented view of personality. Allport views this as the "knottiest problem in contemporary social science," but warns that the open system criterion "must not be applied with so much enthusiasm that we lose the personality system altogether."

There are two implications of the open system view for stratification-personality research. First, emphases on the different criteria lead to different views of the processes assumed to mediate stratification position and personality. Second, an over enthusiastic application of the open system view may lead to either a bluring of the distinction between stratification and personality systems, or a definition of personality which is elliptical vis a vis the social environment.

1. The self-concept as an open system. A recent example of the open system view is found in Kinch's (1963) formalized theory of the self-concept.

Kinch defines the self-concept as "that organization of qualities that the individual attributes to himself." The self-concept is assumed to emerge from the individual's perception of the actions of others toward him, and in turn to influence his behavior. The individual's behavior is assumed to influence the behavior of others toward the individual. Thus, the theory is open and circular:



2. The "oversocialized conception of man." An over-enthusiastic application of the open system view is the target of Wrong's (1961) criticism of modern sociological theory.

Wrong castigates modern sociology for holding an "oversocialized conception of man." In his view, current theory gives a two-fold answer to the question of how men become amenable to social control: "internalization" of social norms and conformity to the "expectations" of others in order to maintain a favorable self-concept.

The solution for Wrong is in the view that "man is a social animal without being entirely a socialized animal." Wrong seems to advocate a balance between the open and closed system views when he concludes (p. 193):

> . . . when our sociological theory overstresses the stability and integration of society we will end up by imagining that man is the disembodied, conscience-driven, status-seeking phantom of current theory. We must do better if we really wish to win credit outside of our ranks for special understanding of man, that plausible creature whose wagging tongue so often hides the despair and darkness in his heart.

Nomothetic Versus Idiographic Approaches

Some personality theorists prefer to study personality as a nomothetic system, having invariant dimensions on which all individuals may be compared. Others argue that the nomothetic approach ignores the uniqueness of personality, and that scientific laws of personality must build upon an idiographic approach.

The nomothetic position is characteristic of factor theorists such as Cattell (1957). The idiographic position is cogently stated by Stephenson (1953, p. 50):

> . . . not all persons have blue eyes in some degree. . . . We cannot measure the knee jerks of a limbless sailor or agree that no knee jerk in an intact leg is the same thing as no knee jerk of a nonexistent limb. When one thinks of it, the same seems to be true of many, perhaps all, personality traits and of all behavior.

Fiske (1963) examines the weaknesses of current personality tests, pointing to the number of idiosyncratic responses these test yield. He places the nomothetic-idiographic issue in the form of a dilemma (p. 652):

> Are the variables now used to describe personality homogeneous dimensions which are pertinent to the description of people in general? Or are they gross categories for classifying essentially individual forms of behavior that are best measured in terms of relative frequency?

Allport (1961, p. 21) occupies a half-way house, refusing to be impaled on the horns of the "dilemma." He writes:

> The psychology of personality is not exclusively nomothetic, nor exclusively idiographic. It seeks an equilibrium between the two extremes.

Synchronic and Diachronic Viewpoints

The diachronic view holds that early experiences produce personality characteristics which persevere and which are important determinants of later behavior. Emphasis on the importance of childhood experience, and the view that personality development is continuous rather than discontinuous, are examples of this view.

On the other hand, the synchronic view does not deny the importance of early experience, nor the assumption that contemporary behavior is in part a function of past experience. However, the synchronic view holds that personality development is discontinuous in that adult personality is relatively independent of the events of childhood or infancy.

Several writers have taken issue with the assumptions of the diachronic view. Foote (1957) argues that it is an illusion that personality development, at least in the sense of differentiation, slows down after childhood. Bolton (1963, p. 6) echoes a similar position:

> We are constantly assured that personality is stabilized by the end of childhood and merely unravels in adulthood. But where is the evidence for these assertions? For the most part, the point is merely assumed, and even the few studies that provide some scanty evidence for personality stability in adulthood fail to consider the fact that regularity of personal behavior may be as readily explained by regularities in the social scheduling of behavioral performances as by persistence in personality structure.

In conclusion, the synchronic viewpoint seems more defensible and it is congruent with an open (or at least quasi-open) system perspective of personality.

Ascertainment

There are a variety of techniques for assessing dimensions of personality. Cattell (1957, pp. 51-59) discusses these techniques under three categories which he calls "media of observation."[2] These "media of observation" are: (1) life record, (2) questionnaire, and (3) objective test variables.

Life Record

In this medium the behavior of individuals in their everyday situations is observed and recorded. Typically, such observations are often unsystematic and speculative. These observations may be expanded to include behavior ratings made by the investigator.

Questionnaire

Questionnaire techniques include introspective and consciously self-evaluative assertions of the individual about himself.

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[2]Other, and more detailed, classifications of techniques are presented by Rosenzweig (1948) and Allport (1961). A specific idiographic technique has been developed by Stephenson (1953).

Objective Test Variables

Questionnaire data is viewed as suspect for three reasons. First, the person may not know himself. Second, the individual may not always answer honestly even if he does know himself. Finally, reliability coefficients are not possible because there is only one observer.

Objective test data share the objectivity of life record data and have the property of being derived from a standardized test situation as with questionnaire data. Thus, Cattell views objective test variables as the most attractive techniques.

Cattell defines a test (p. 59) as a "contrived, artificial, standardized stimulus situation and rule for response scoring, in which the subject knows the general class of responses he is to make, and which is transportable to different groups of subjects."

Summary and Conclusions

This chapter examined a variety of concepts and controversies concerning personality. Each of these may provide status-personality theory and research with points of departure. However, we need not be impaled on the horns of several apparent "dilemmas." Many of these are analogous to the continuum versus categorical issue in stratification.

Thus, stratification may be articulated with a variety of formulations of personality. These formulations may emphasize biosocial or biophysical definitions, open versus closed system views, various levels of personality, different personality domains, nomothetic or idiographic approaches, and diachronic versus synchronic perspectives. The choice of formulations, however, may influence the findings and conclusions of the research. This is true also for the ascertainment techniques which are used.

The approach of this dissertation tends to lean toward a balance on the biosocial and biophysical definition issue, and on emphases on different levels of personality. Further, the main emphasis is on adjustment and achievement as two hypothesized functionally coherent domains. In terms of ascertainment, questionnaire data are used. These balances are illustrated in Chapter VII, where the major indicants for the consequent system, personality, are developed.

On the other hand, the approach of the dissertation is best described as nomothetic and synchronic in that these are the assumptions underlying the various models for articulating the antecedent system with the consequent system.

In conclusion, the definition of personality held in this dissertation is as follows. Personality is a set of subjective adjustment and achievement attributes comprising an open (or quasi-open) and multilevel system which transacts with the contemporary social environment. The following chapter examines the analytical and theoretical bases for articulating stratification and personality systems.

CHAPTER V

ARTICULATING THE TWO SYSTEMS

This chapter examines three approaches to developing methods for studying the relationships between stratification and personality systems. These three approaches are (1) articulations based on system characteristics, (2) general stratification formulations, and (3) articulations based on coherent domains.

Articulations Based on System Characteristics

The Antecedent System

Social status and status consistency represent the two major taxonomic facets of stratification. Each may be related to personality independently or both may be combined in some manner and their joint effect on personality examined.

Thus, three articulation models are possible. In one, either composite status or status consistency is an antecedent variable. In the second, composite status and status consistency form a composite antecedent. In the third, the model comprises a derived antecedent system based on both composite status and status consistency.

The first model assumes only bivariate and monotonic relationships between a stratification variable and a personality variable. The second and third models combine both composite status and status consistency and relate the resultant to personality.

The second model treats the two stratification facets as a composite independent variable but assumes either monotonic or

non-monotonic relationships with a personality variable. A monotonic example of this model, the Amplifier model, is developed later in this chapter and presented formally in the following chapter.

Finally, the third model treats the two facets of stratification as an integrated status structure system rather than as simply two independent variables. The status structure model, which is a special case of Nodular models, attempts to handle several difficult problems of stratification theory such as the delineation of boundaries and their psychological concomitants. This model is developed in the following chapter.[1]

The Consequent System

Personality is viewed as a set of subjective attributes comprising an open (or quasi-open) system which transacts with the contemporary social environment.

Adjustment and achievement attributes are hypothesized to be major functionally coherent domains of personality. Thus, each of the articulation models discussed above may be articulated with either the adjustment or the achievement domain. This yields six articulation models based on characteristics of the antecedent and consequent systems.

The adjustment and achievement domains might be combined into a composite consequent system similar to the ways in which composite status and status consistency were combined for the antecedent system. However, our treatment of stratification and

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[1]In subsequent chapters we shall show that the bivariate and monotonic approaches have only limited usefulness in testing and generating hypotheses regarding the personality consequences of stratification. On the other hand, the Nodular models will be shown to be more adequate than the other two approaches.

personality systems did not lead to any rationale for considering such consequent composites status-relevant.

General Stratification Formulations

There are several general theoretical formulations which are relevant for relating the hierarchical facet of stratification to several domains of personality. We shall first examine these, and then consider specific theories for relating composite status and status consistency to either the adjustment or the achievement domains of the consequent system. We have been unable to find any general formulations for the consequents of status consistency.

A general theoretical framework for the personality concomitants of social stratification has been summarized by Sewell (1961). This framework underlies much of the status-personality research reviewed in Chapter II, and contains three assumptions.

First, in all societies some system of stratification exists such that subgroups are related in terms of social inequality. Second, the position of the child's family in the stratification system determines his exposure to learning influences and his access to opportunities socially defined as desirable. Finally, the early experiences of the individual will be considerably important in determining later social behavior.

We need note only one point. The third assumption is unnecessarily restrictive in that it implies a diachronic and closed-system view of personality development.

Another general framework, which provides a basis more nearly congruent with a synchronic and open system approach, is presented by Inkeles (1956).

Inkeles indicates three ways by which adult personality may be studied. First, personality may be examined primarily in terms of biologically given characteristics such as prolonged infant dependency or the human maturation cycle emphasized by Freudian and neo-Freudian theories. Second, personality may be studied in terms of learning theories which view the individual mainly as the end product of conditioning in a matrix of reward and punishment. Finally, personality may be viewed as expressing value orientations and normative ways of acting which reflect development in a given socio-cultural environment.

The individual's position in a stratification system may influence his personality through each of these three modes. In the first by mediating processes based on biological characteristics (e.g., infant discipline). In the second by both defining and allocating systems of reward and punishment. In the third by providing different socio-cultural environments.

Finally, the processes by which these various modes and levels of personality are articulated with the stratification system have typically been subsumed under the term "socialization." Sewell (1963, p. 163), in his review of recent developments in socialization theory and practice, defines socialization as:

> . . . the process by which individuals selectively acquire the skills, knowledge, attitudes, values, and motives current in the groups of which they are or will become members. . . .

This definition illustrates the "sponge" characteristic of the concept socialization. Moreover, socialization, defined in this way, is elliptical in terms of its ability to explain how different stratification positions effect the selective acquisition of a variety of subjective attributes.

In short, this definition merely summarizes a series of empirical observations--the homogeneity of certain subjective attributes within

groups--but does not explain the process or processes of differentiation between groups.

Articulations Based on Coherent Domains

The Adjustment Domain

1. Composite status. Explicit theoretical formulations attempting to predict or explain the observed inverse relationship between composite status and personality adjustment are virtually absent in the research literature. There are two notable exceptions.

Sewell and Haller (1959) offer two fairly specific but post factum explanations. We shall refer to one of these as the value-expectation conflict hypothesis. The other we shall call the frustration-anxiety hypothesis.

The value-expectation conflict hypothesis holds that values and behavioral expectations are internalized early by the child. For the lower class child, the values and expectations are assumed to come into conflict, at subsequent points in time, with the values and expectations of the larger social environment of the school and the community. These conflicts presumably generate tensions which are manifested in a number of physical and psychological symptoms.

The frustration-anxiety hypothesis assumes that at least some lower-status youths are striving for upward social mobility. Some of these individuals will probably encounter a great deal of frustration because of environmental limitations such as lack of access to funds and facilities. This hypothesis holds that one consequence of this frustration will be high anxiety for the low-status youth relative to his peers from higher status positions.

A second formulation is presented by Jarrett and Haller (1964). Jarrett and Haller develop a concept of "incipient alienation" which

is held to characterize youths who find their family, school, and peer relations unrewarding as they relate to chances and future plans for achievement. The personality variables subsumed under the term incipient alienation are status concern, concern over achievement, and rejection of family.

The authors assume that the success goal is preferred for all adolescent boys by parents and teachers. They hypothesize that under these conditions "a relative scarcity of success-producing resources increases the probability of incipient alienation among adolescents." Both personal and situational success-producing resources are examined by Jarrett and Haller. Social status is held to be one of the situational resources, and findings indicate that low status is associated with incipient alienation.

Thus, in the Jarrett and Haller formulation, conflicts or stress arising from the discrepancy between the achievement expectations of others and the success-producing resources of the individual (of which social status is one aspect) generate a number of low adjustment symptoms which are subsumed under a concept of incipient alienation.

2. Status consistency. In Chapter III we noted two general ways in which status inconsistency could generate consequences for the individual. One holds when status inconsistency is an attribute of that portion of the stratification system in which an individual is implicated. The other holds when status inconsistency is an attribute of the individual.

When status inconsistency is an attribute of a portion of a stratification system, there are two stress-producing processes for persons implicated. These are (1) the generation of "dilemmas and contradictions" for responses to those who are status inconsistent, and (2) "marginality" attributed by others to the implicated person by virtue of his membership in a "status aggregate" which lacks community consensus on its status position.

When status inconsistency is viewed as an attribute of the individual, there are two processes assumed to lead directly to increased personal stress. These are (1) frustration arising from unsuccessful attempts to reduce status inconsistency by means of "status conversion," and (2) inconsistent or incompatible behavioral expectations associated with the divergent segmental statuses.

However, there is a third process in which status consistency is assumed to mediate the adjustment effects of composite status. This process is called the amplification effect, and the model designed to test this hypothesis is called the Amplifier model.

The following paragraphs examine in more detail several formulations concerned with the direct effect of status consistency on adjustment, and with the indirect or amplification effect on adjustment.

3. Direct effects. This approach focuses on the functional importance of status consistency for adjustment, all other things (including composite status) being equal.

Lenski (1954, p. 412) examines the notions of social pressure and marginality in relation to the adjustment and adaptation of status inconsistent persons:

> Apparently the individual with a poorly crystallized status is a particular type of marginal man, and is subjected to certain pressures by the social order which are not felt (at least to the same degree) by individuals with a more highly crystallized status.

Lenski suggests that there are four possible reactions to these social pressures: (1) blame the social order, (2) blame other individuals as individuals, (3) blame the self, and (4) withdraw from the socially disturbing experiences.

Of the four reaction, blaming the self is most clearly associated with lowered adjustment as reflected in lowered self-evaluation.

Jackson (1962, p. 470) attempts to synthesize various interpretations of the psychological impact of low status consistency.

> It may be that the basic problem underlying all these is that of conflicting expectations. An individual's rank on a status dimension controls, in part, his expectations of others, his expectations of himself, and others' expectations of him. These expectations and the degree to which they are fulfilled control, in part, the individual's image of himself. When a person holds high rank on one status dimension and low rank on another, the expectations (both those held by the individual and by others) mobilized by the rank positions will often be in conflict.

Jackson holds that conflicting expectations generate frustration and uncertainty, both of which presumably lead to symptoms of psychological stress.

We may illustrate the idea of conflicting expectations by referring to Figure 4. Each circle indicates one of the four segmental statuses and its associated expectations. The areas of overlap of the four circles (the hatched areas) represent the degree of congruence between the expectations associated with each of the four statuses.

Thus, when status consistency is high, there is a large degree of overlap between the expectations, and consequently a large area of common expectations relative to the specific expectations (non-overlaping areas for each circle). On the other hand, low status consistency provides a very small area of common expectations. In this instance, the expectations may be inconsistent, incompatible, or even conflicting.

In short, we are assuming that equivalent positions in different status dimensions require equivalent expectations without specifying the particular content of these expectations. This is the core idea for formulating the direct effects of status inconsistency, ceteris paribus.[2]

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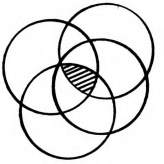
[2]Sampson (1963) has pointed out that a mere difference in rank positions does not necessarily lead to behavior which attempts to reduce the inconsistency, as Lenski (1954, 1956b) seems to imply. Rather, Sampson argues that a tendency toward status equilibrium exists only when the status discrepancies imply inconsistent expectations for the behavior of the occupant of the positions.

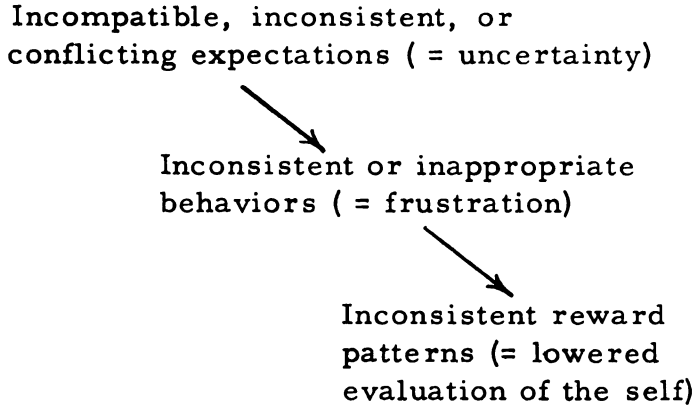
Status
Consistency



Status
Inconsistency

Figure 4. Convergent and divergent expectations associated with status consistency and inconsistency.

In conclusion, the major conditions mediating status inconsistency and personal stress, and their associated symptoms, appear to follow this sequence:



4. Indirect effects. When we consider status consistency as an indirect or mediating variable, a different type of formulation emerges. Here we take the effect of composite status as primary, and define the role of status consistency as a secondary variable which modifies the effects of composite status.

In this approach the content of the segmental statuses is important. Status consistency is viewed as a lense through which the adjustment effects of the segmental statuses are focused. In this instance, Figure 4 should be interpreted as analogous to focused versus unfocused segmental statuses.

Low status is associated with low adjustment, and high status is associated with high adjustment. It seems reasonable to suppose that consistently low segmental statuses will have more impact on low adjustment than segmental statuses some of which are low and some of which are higher. Similarly, consistently high segmental statuses would lead us to expect higher adjustment than a few high segmental statuses and a few lower segmental statuses.

Thus, status consistency may amplify the effects of composite status. These and other assumptions and hypotheses are incorporated in the Amplifier model which is formally presented in the next chapter.[3]

The Achievement Domain

1. Composite status. The positive association between composite status and achievement variables has typically been explained in terms of status-related differences in achievement values and expectations (Hyman, 1953, and Rosen, 1956). However, a general and adequate theory for relating composite status and achievement concomitants is difficult to identify in the literature.

A symbolic-linquistic approach would seem to satisfy some of the requirements of generality while having an intrinsic relevance for achievement. Moreover, this approach seems to be congruent with the transactional idea of open systems and the synchronic approach to status-personality relationships.

Bernstein (1961) presents a theory of social learning based on the distinction between a public language and a formal language. Bernstein maintains that "a middle-class child learns both these linguistic modes and uses them according to the social context, whereas a lower working-class child is restricted to a public language." Bernstein (pp. 307-308) summarizes the implication of his theory for achievement behavior and orientations:

> Fundamental to the view presented is the fact that a middle-class child is capable of responding to, manipulating, and understanding a public language, as well as a language that is structured to mediate relatively explicit, individualized qualification, as a

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[3]The amplification role of status consistency would presumably hold for any personality variable associated with composite status.

> result of his socio-cultural environment. . . . because of this a greater complexity of possible relationships are made available to him, which permits conceptualizing activity of a high order. Because of the different structuring of the lower working-class child's environment he is limited to a public language. This radically narrows the extent and type of his object relationships. Thus, the middle-class child and the lower working-class child are oriented to different orders of learning as a result of the implications of their forms of language use.

Finally, Bernstein notes that "a situation calling for an explicit individual qualification may well be one that engenders critical psychological stress for the speaker of a public language." Such a situation, Bernstein argues, is typically found in formal education.

Since learning experiences, particularly in the school situation, are presumably important determinants of achievement orientations, this theory provides a basis for expecting status differences in the achievement domain. This seems to be the main thrust of the theory. However, there are also implications for adjustment as a reflection of "critical psychological stress" when formal language requirements are imposed on a low status individual.

In short, status related differences in learning linguistic modes point to a positive association between composite status and achievement, and to a lesser degree adjustment.

However, there is also an implication for selecting intelligence as a control variable in assessing the relationships between status and adjustment and achievement concomitants. That is, intelligence tests employ languages typically oriented to explicit and finely differentiated meaning, complexity of object-relationships, and high-order conceptualization.

Thus, some of the status differences in adjustment and achievement may be due to linquistic differences (rather than value and expectation differences). Therefore, we conclude that intelligence is

a theoretically-relevant control variable for stratification and personality research.

2. Status consistency. Status consistency, all other things equal, does not bear a clear and unequivocal relationship to the achievement domain.

For example, low status consistency may depress achievement performances and aspirations because of excessive anxiety (arising from stress). On the other hand, low status consistency may elevate achievement behavior and aspirations by mobilizing a desire to consolidate the discrepant segmental statuses.

Thus, the effects of status consistency or inconsistency on variables in the achievement domain are not specifiable in terms of any of the theoretical formulations examined.

Summary and Conclusions

Six articulation models are based on an examination of the characteristics of the antecedent and consequent systems.

There are three antecedent models. In one, either composite status or status consistency is related to personality. In the second, composite status and status consistency comprise a composite antecedent. In the third, composite status and status consistency are used as the basis for deriving an antecedent system--the status structure model. Each of these three antecedent models may be applied to either the adjustment or achievement domain of personality, thereby yielding six articulation models.[4]

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[4]Other types, of course, are possible. For example, the bivariate model may assume non-monotonic as well as monotonic relationships. However, the bivariate monotonic model best represents the approach of previous research. Thus, the six types of models are intended to be representative and systematic without being exhaustive.

Conflicting values, expectations, and linguistic modes appear to be the basic processes mediating adjustment and both composite status and status consistency.

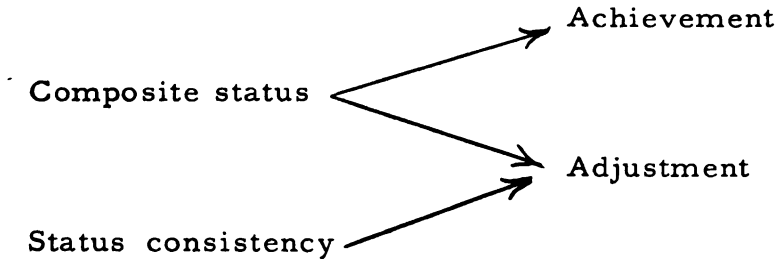
The individual low in composite status presumably experiences value, expectation, and linguistic conflicts with those of higher status who impose, particularly in the school system, values, expectations, and language requirements which the low status person either has not learned or is unable to learn.

The individual low in status consistency is assumed to experience conflicts arising from incompatible expectations, inappropriate behaviors, and inconsistent reward patterns.

In both instances the resulting psychological stress is hypothesized to be expressed in such symptoms as uncertainty, frustration, lowered evaluation of the self, anxiety, psychosomatic complaints, and nervous tension.

The effects of composite status on achievement variables seem explicable in terms of differences in the content of values and expectations, and in linguistic differences. However, the direct relationship between status consistency and the achievement domain, ceteris paribus, appears to be indeterminate.

Thus, the theoretical basis for articulating the antecedent and consequent systems is incomplete and looks as follows:



Finally, we concluded that a theory of status differences in learning linguistic modes suggests the theoretical relevancy of intelligence as a control variable in stratification and personality research.

However, two models provide formulations which suggest that adjustment and achievement concomitants may not be simple functions of either composite status or status consistency.

One, the Amplifier model, holds that status consistency amplifies the effects of composite status. The other, the status structure model, suggests an examination of the personality concomitants of heterogeneous stratification systems or status structures. This model offers a possible basis for studying the personality consequences for individuals implicated in boundaries as well as status structure groups.

The Amplifier model and the Nodular model, of which the status structure model is a special case, are presented in the following chapter.

CHAPTER VI

MODELS, PROBLEM, AND HYPOTHESES

The conceptual bases for the Amplifier and the Nodular models were developed in Chapters III and V. This chapter states the rationale for these models in full, describes their operationalization, formulates the problem of comparing and evaluating linear and Nodular models, and presents the hypotheses to be tested for each model. The rationales for these hypotheses, which were developed in preceding chapters, are briefly restated.

The Amplifier Model

Status consistency may be viewed as a lense through which the various segmental statuses are focused. If status consistency is low, the values and expectations associated with the divergent segmental statuses are dispersed, perhaps incompatible or conflicting. Thus, the composite effect of these statuses on a status-relevant concomitant will be weak.

Conversely, if status consistency is high, the values and expectations associated with the convergent segmental statuses are focused, and consequently congruent and mutually reinforcing. Thus, the composite effect of these statuses on a concomitant will be strong.

In short, status consistency may <u>amplify</u> the effects of composite status. The model which attempts to test this hypothesis of amplification is called the Amplifier Model.

The design of the Amplifier model is simple. Figure 5 shows how various status levels are amplified by status consistency to produce a specified ordering of a criterion variable.

Status	Status Consistency	Criterion
High	High	A
	Low	B
Low	Low	C
	High	D

Figure 5. The Amplifier Model.

Three assumptions together with the theory stated above leads to a hypothesis for the Amplifier model.

First, it is assumed that the amplification effect of status crystallization is not due simply to the addition of the segmental statuses. Amplification is assumed to be an interactive process between levels of the segmental statuses and status consistency.

Second, the amplification effects are assumed to be independent of any additive effects based on a correlation between status and status consistency. Thus, the more status and status consistency are independent, the more the order of the criterion effects may be attributed to amplification.

Third, status is assumed to be the primary variable in ordering the criterion effects. Status consistency is secondary in that it amplifies the effects of status. This assumption is called the status-primacy assumption, and holds that $B > C$.[1]

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[1]The reasoning behind the status primacy assumption was discussed in the section on the indirect effect of status consistency in the preceding chapter.

Finally, our theory of amplification provides the basis for ordering A > B and C > D. Thus, the Amplifier model hypothesis is that the criterion effects have a monotonic order such that A > B > C > D.

Nodular Models

The Nodular models attempt to deal with the problem of mapping personality concomitants onto a two dimensional stratification system. They have several advantages over the Amplifier model.

Nodular models make fewer assumptions and thus may be viewed as more general models. For one, Nodular models do not assume a monotonic order for their concomitants. For another, Nodular models provide for the analytical delineation of boundaries and hence for the analysis of the personality concomitants of discontinuities (e.g., boundaries) as well as status continua. Finally, Nodular models make no composite-effect order assumption for status and status consistency.

There are two types of Nodular models. One is the status structure model mentioned in Chapters III and V. The other is the personality concomitant model which is based on the status structure model. Thus, we first present the status structure model and then examine the personality concomitant model.

The Status Structure Model

By "status structure" we mean a mapping of variations in status consistency over a composite status continuum range for a given population. Such a mapping is assumed to generate a series of modulations or inflections in aggregate status consistency at varying points along the status continuum. Thus, discontinuities in aggregate status consistency are mapped on continuities in composite status.

Discontinuities as reflected in consistency modulations may be of two kinds. Areas of composite status characterized by low consistency relative to areas immediately lower and higher in status are taken as status structure boundaries. On the other hand, two status areas differing in composite status and separated by a boundary are taken to be status structure groups. By definition, these groups have high consistency relative to the boundary which separates them.

In short, consistency "peaks" represent status structure groups and consistency "valleys" represent status structure boundaries. We shall refer to these "peaks" and "valleys" as nodes. Thus, the term Nodular model.

1. Conceptual framework. Individuals belonging to status groups are characterized by relatively high consistency among their objective status ranks. They may be said to have been successful in their attempts at "status conversion." Moreover, this consistency among objective ranks contributes to consensus among others as to the individual's composite or general status.

This is because others will probably employ different status symbols in estimating the individual's status. However, if the individual has consistency among several ranks, there will tend to be consensus among the segmental judgments of others irrespective of which criterion is chosen by a particular judge.

Thus, objective consistency is one possible basis for community consensus in stratifying individuals. Lack of objective consistency, on the other hand, may be the basis for lack of subjective consensus in the community. The result is that persons characterized by status consistency are more likely to be viewed by others in the community as comprising a clearly identifiable status group.

Individuals implicated in boundaries, on the other hand, are characterized by a low degree of status consistency. Thus, there is

likely to be a lack of community consensus as to their composite status position and consequently they will not be perceived as comprising a clearly identifiable status group. Such individuals correspond to the "status aggregate" based on "vertical polarization" as described by Stone and Form (1953).

The status structure model is related to the concept of social mobility. Since mobility involves changing one's composite status, and since it would be difficult to change all of the segmental statuses simultaneously, those who are mobile would probably be less status consistent than would those who are not mobile. Thus, boundaries may include many individuals who are in the process of moving from one status group to another. If this is so, then the concept of boundaries is given further theoretical support.

However, it may also be that boundaries are emerging status groups in a fluid stratification system. In this instance, boundaries would include individuals who are attempting to consolidate their status positions by means of "status conversion." Thus, boundaries observed at one point in time may be observed as status groups at a subsequent point in time in the same stratification system.

The mapping of status structures may generate any number of boundaries and associated status groups, or simply no boundaries at all. If no boundaries, then the status structure is homogeneous and status is assumed to be distributed continuously in a given population. If one or more boundaries exist, then the status structure is heterogeneous and status is assumed to be distributed discontinuously, or categorically.

Finally, the range of composite status covered by both status groups and boundaries may vary from one population to another and within a given population. Consequently, the relative number of individuals implicated in both boundaries and groups may be empirically determined.

There are two reasons why we consider the question of whether status structure groups represent social "classes" as problematical. First, we are postulating that heterogeneous status structures are necessary but not sufficient conditions for the delineation of "classes." Second, and related to the first, the model does not indicate such criteria as consensual recognition of groups and boundaries, differential patterns of social interaction, or self-identification. Thus, the term status structure simply denotes a bivariate status system whose characteristics are either homogeneous or heterogeneous.[2]

2. Operationalizing the model. A status structure is ascertained by partitioning a sample of N subjects into k groups with N/k individuals in each group, and ordering the groups from low to high composite status.

Thus, if scores on composite status for 100 individuals are available, and if k = 10, then the 10 individuals with the lowest status scores are placed in group k_1, the 10 individuals with the next highest status

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[2]It should be noted that the status structure model, as a possible basis for delineating social "classes," is formulated strictly in terms of structural variables. For this we are indebted to the work of Stone and Form (1953), Freedman, et al., (1956), Broom (1959), and Landecker (1960).

The idea of using "wiggles" or modulations in one variable to indicate discontinuities in another variable owes much to the sensitizing ideas of Guttman (1954). However, Guttman seems to suggest a model of "class" boundaries based upon psychological variables rather than stratification variables. We consider this unacceptable since it blurs the distinction between the antecedent and the consequent systems, and begs the question of the psychological concomitants of boundaries. Thus, Guttman (p. 255) writes:

> . . . we have been alerted to wiggly regressions, and keep finding various kinds which would have been dismissed previously as implausible. These are ordinary correlation problems, without reference to components. The regression of personal adjustment on one type of socio-economic status shows a succession of bends in Israel data--tentatively suggesting objective dividing points for social classes.

scores are placed in group k_2, and so on until the 10 individuals with the highest status scores are placed in group k_{10}. The k groups are called composite status groups, and they are ordered such that $k_1 < k_2 < k_3 < \ldots . k_9 < k_{10}$. The ordered composite status groups are placed along the abscissa of a Cartesian coordinate axes system.

Next the median status consistency score for each of the k ordered composite status groups is computed.[3] Since each group has an equal number of individuals (N/k), the medians will have equal reliability.

The ordinate of the coordinate system is then scaled in intervals which span the range of computed medians. The status consistency medians are plotted graphically for each of the k composite status groups and a smooth curve is drawn connecting each of the coordinate plots moving from low to high composite status. The result is a graphical representation of a status structure.[4]

Figure 6 illustrates hypothetical modulations in status consistency which result in nodes where status consistency is at its minimum or

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[3]There is no basis for assuming that the distributions of status consistency scores for the composite status groups are either normal or equivalent in shape. Therefore the median rather than the mean is used because the median is less sensitive to departures from normality and hence the pattern of medians will not be distorted due to differences in the shapes of the distributions.

[4]As we noted, every portion of the resulting curve will have equal reliability. However, the magnitude of this reliability will depend on the size of N/k. The larger N/k is, the higher the reliability of the entire curve. But there is another desirable characteristic of the curve and that is its sensitivity to detect real differences within the status structure. This sensitivity increases as k increases. But an increase in k will reduce the size of N/k unless N is increased proportionately. Therefore, we should seek some acceptable pay-off between reliability and sensitivity. An analytical solution to this problem is developed in the section on "reliability and sensitivity" which follows the present section.

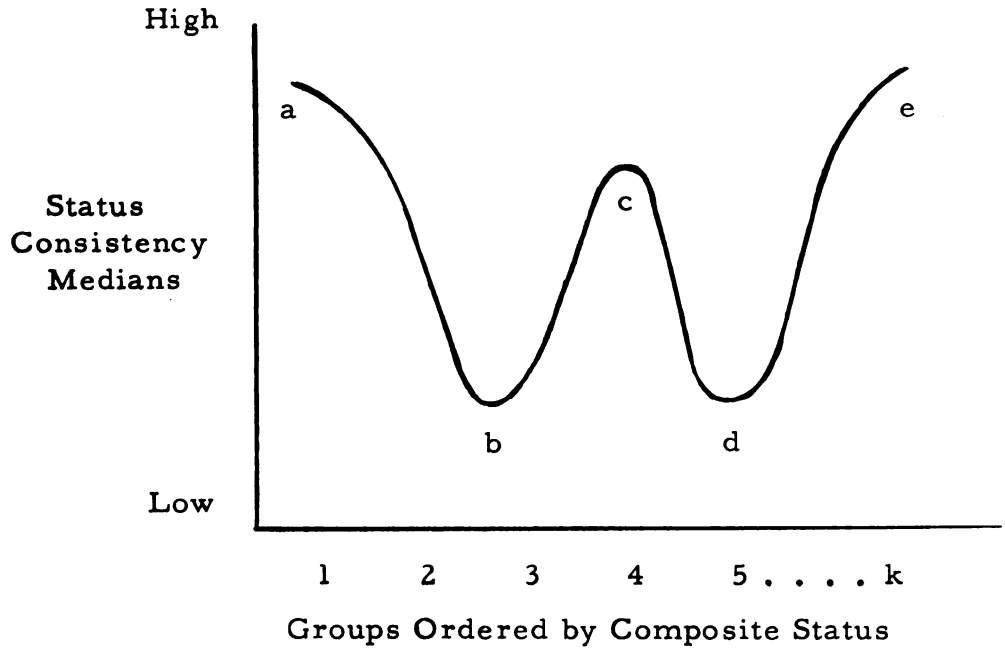


Figure 6. The status structure model.

maximum. Thus, the term nodular structure indicates the general characteristics of a status structure which is heterogeneous, i.e., a structure having discontinuities which represent status structure groups and status structure boundaries.

Strictly speaking, the resulting plot would not be a nodular structure if all the status consistency medians were equal. In that case, the resulting status structure would be homogeneous, i.e., lacking in discontinuities which may be identified as status structure groups or boundaries.

The particular shape of the hypothetical graph in Figure 6 is based on several theoretical considerations discussed in Chapter III. These may be briefly restated here.

We assume that status consistency and composite status are generally independent. However, by definition extremely low and extremely high composite status can occur only if the segmental statuses are highly consistent. Thus points a and e will be high in status consistency if and only if the range of groups includes individuals who are extremely low or high in composite status. If, on the other hand, the full range of composite status is not represented in the population to which the status structure model is applied, the curve may be truncated at one or both ends of the composite status order.

If the curve is truncated at the low end of composite status, then the correlation between status and status consistency will tend to be positive. If, on the other hand, the curve is truncated at the high end of composite status, then the correlation between status and status consistency will tend to be negative. Consequently, if the curve is not truncated at all the correlation between status and status consistency will tend to be zero. Thus, the independence of status and status consistency obtains if and only if there is a full range of composite status in the population.

Areas of composite status groups characterized by low status consistency relative to areas immediately lower and higher in status are called boundaries. Thus, points b and d in Figure 6 represent the centers of boundaries. Conversely, points a, c, and e represent the centers of status structure groups. Since the curve is smooth between centers of boundaries and status groups, boundaries and groups are relative to one another. Thus, boundaries shade into status structure groups and the exact point at which one decides to assign an ordered composite status group to either a boundary or a status structure group is arbitrary.

However, for practical purposes, a reasonable set of limits may be established about the center of the status structure group. Ordered composite groups falling within these limits may be assigned to the status structure group. Ordered composite status groups falling outside of these limits may be treated as members of a boundary.

Another solution would be to establish limits based upon the ordinate midpoint between the maximum and minimum status consistency medians defining the adjacent centers of a status structure group and a boundary. This solution would be satisfactory as long as the ordinate midpoints fall between two ordered composite status groups.

The whole question of goodness-of-fit between an hypothesized status structure and the obtained nodular curve depends upon considerations of the overall reliability and sensitivity of the status structure model. This is clarified by an examination of the relationships between the size of the sample, the number of composite status groups, the number of status structure groups which are hypothesized, and reliability and sensitivity levels.

3. Reliability and sensitivity. The reliability of the status structure model may be defined in terms of the stability of results when the model is repeatedly applied to the same population. Sensitivity refers to the ability of the model to detect real differences in the nodular structure of a given stratification system. Since the goal of the status structure model is to provide a basis for delineating boundaries and status structure groups, both reliability and sensitivity are important.

Reliability is proportional to the number of individuals within each composite status group, or N/k. Thus reliability may be increased by either increasing N or decreasing k. Sensitivity is proportional to the number of composite status groups, or k. Thus, sensitivity is increased by increasing k. But if k is increased with N held constant, then N/k or reliability is reduced. Thus, in order to increase both reliability and sensitivity it is necessary to increase N proportionately more than k.

The problem is how to analytically determine the size of N sufficient to test a given hypothesis concerning the number of status structure groups with an acceptable level of reliability and sensitivity.

Our solution is that the researcher make his own judgments as to reliability and define sensitivity in terms of how many medians he requires to delineate a boundary or a status structure group. These two criteria together with a specification of the number of status structure groups hypothesized are sufficient to determine the appropriate N.

The following solution relates reliability and sensitivity criteria to the hypothesis being tested by the status structure model:

1. Let N = the total number of individuals in the population to be tested.

2. Let k = the total number of composite status groups for the status structure model or the total number of status consistency medians.
3. Let r = N/k, the number of observations desired for each status consistency median. (Reliability)
4. Let s = the average number of medians desired to delineate a boundary or a status structure group. (Sensitivity)
5. Let g = the number of status structure groups and b = the number of boundaries hypothesized for the population N.
6. Since their are always (g - 1) boundaries for g status structure groups, b = g - 1.
7. Then k may be defined independently of N and r in the following way:

$$\begin{aligned} \text{from (4) and (5):} \quad k &= sg + sb \\ \text{from (6):} \quad &= sg + s(g-1) \\ &= sg + sg - s \\ &= s(2g-1) \end{aligned}$$

8. Thus, since r = N/k (from 3 above):

$$N = rk = rs(2g-1)$$

9. Therefore, N is determined if reliability (r) and sensitivity (s) criteria are given and if the number of status structure groups (g) is hypothesized.

Two examples will illustrate how these parameters (N, r, k, s, and g) may be estimated from each other.

Suppose an investigator had a total N equal to 400 and he wished to test the hypothesis that g = 3. His problem is to determine how many k composite status groups are appropriate if he wishes an average sensitivity level of three medians for each boundary and status structure group (s = 3). Both k and r, reliability, may be estimated from this information.

Since $k = s(2g-1)$, $k = 3(5) = 15$. Therefore, k = 15 composite status groups. It is now possible to estimate the reliability r by noting that N = rk and therefore $r = N/k = 400/15 = 26.7$. Thus, the investigator will have each median based on approximately 26 individuals.

On the other hand, the investigator may begin by stipulating that r = 40 and then determine the effects of this criterion on the average sensitivity level and k. (It should be noted that since s will be changed, k also will be changed as long as g is held constant. This is because k = s(2g-1). Or, it may be noted that since k = N/r, and r is changed, k also will be change. Thus, only N = 400 and g = 3 will remain constant.)

The new value of k may be determined first by noting that k = N/r = 400/40 = 10. Having k = 10, the new value of s is given by k = s(2g-1) and therefore s = k/(2g-1) = 10/5 = 2. Thus, with N = 400, r = 40, and g = 3 the investigator will have an average sensitivity of 2 medians for each hypothesized status structure group and 10 composite status groups.

Other variations are possible. The point is that this type of formulation allows the investigator to trade off the parameters by relating them to a specific hypothesis.

The Personality Concomitant Model

This model attempts to deal with the problem of the response of individuals to differential location in the status structure model. Its construction is analogous to the construction of the status structure model in that the median values for a personality concomitant are mapped for each of the ordered composite status groups. This corresponds to the mapping of median values of status consistency in the status structure model.

However, the personality concomitant model differs in that it does not result simply in the mapping of personality concomitant medians on the ordered composite status groups. The personality mappings are superimposed or overlaid on the status structure model. The result is a tri-variate graphical structure rather than a bivariate

structure. The fact that both mappings are related to the same set of ordered composite status groups provides a reference for coordinating personality coordinates with status consistency coordinates.

In short, the personality concomitant model uses the status structure model as an antecedent system on which personality concomitants are mapped. Two kinds of antecedent-consequent relationships are possible--isomorphic and non-isomorphic.

1. Isomorphic and non-isomorphic mappings. By isomorphic we mean a relationship such that the nodes of the status structure have a one-to-one correspondence with the nodes of the personality mapping. This one-to-one correspondence may either be completely in phase or 180 degrees out of phase.

If completely in phase, then the maximum and minimum nodes of the antecedent system correspond to the maximum and minimum nodes of the consequent system respectively. If 180 degrees out of phase, then the maximum nodes in the antecedent system correspond to minimum nodes in the consequent system, and conversely the minimum nodes of the antecedent system correspond to maximum nodes in the consequent system.

A non-isomorphic relationship lacks a one-to-one nodular correspondence. There are three types of non-isomorphic relationships.

In one, there is a modulation in the personality variable without a corresponding modulation in the status structure.

In the second, there is a modulation in the status structure without a corresponding modulation in the personality variable. This may occur when either the personality variable is constant or when it is a monotonic function of composite status.

Finally, modulations in personality may be such that the personality nodes fall between the status structure nodes. In this case the

phase differences between the antecedent and consequent systems fall somewhere between zero and 180 degrees.

Isomorphic and non-isomorphic relationships may occur in simple or complex patterns in the nodular model. However, each of the several types is amenable to various interpretations.

Perhaps the easiest type to interpret is the isomorphic relationship. Here variations in the personality concomitant may be taken as a function of an individual having differential membership in a boundary versus a status structure group. Isomorphic relationships are always non-monotonic. They best illustrate the fundamental characteristic of the Nodular model.

Non-isomorphic relationships may be simple or complex, monotonic or non-monotonic. Two simple instances are when the personality variable is constant and when it is a monotonic function of composite status. If constant, we conclude that the personality variable is not explicable in terms of the status structure. If linearly increasing or decreasing, we conclude that the personality variable is a monotonic function of the status continuum only. These are two instances when there simply is no modulation in the personality variable.

A complex non-isomorphic situation is when there is a modulation in the personality variable without a corresponding modulation in the status structure. Here we may conclude that the personality variable is a non-monotonic function of status only.

The most complex non-isomorphic instance is when personality nodes fall between status structure nodes. This cannot be interpreted as simply a function of boundary versus status structure group membership nor can it be interpreted as either monotonic or non-monotonic functions of composite status.

It may be that such phase lags are interpretable as personality concomitants of <u>transitions</u> from boundaries to status structure groups

and vice versa. If this is so, then nodular phase differences of about 90 degrees may indicate the peaking (or dipping) of personality variables for those who occupy stratification positions mid-way between a boundary and a status structure group.

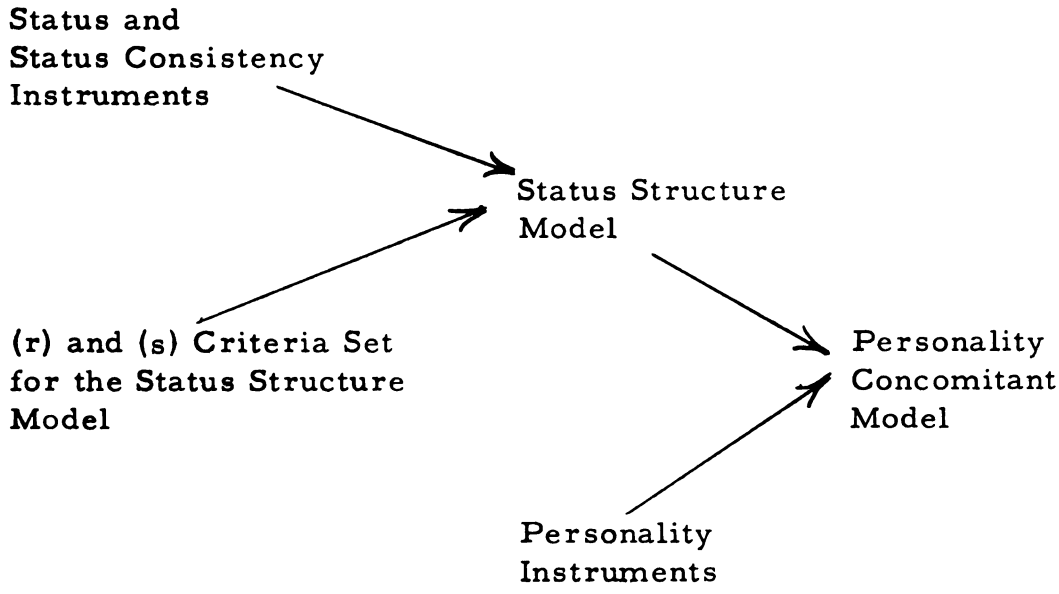
In short, such relationships may indicate the personality concomitants of upward or downward social mobility. As such, they may reflect personality consequences of incipient movement into or from status structure groups.

Finally, perhaps the most complex situation is when the relationships are mixed--including isomorphic and non-isomorphic, and monotonic and non-monotonic, relationships. An example of this is when there are modulations but the general trend of these modulations is monotonic with respect to composite status. Here we conclude that the personality variable has a monotonic relationship with composite status, but this relationship has non-monotonic (perhaps both isomorphic and non-isomorphic) relationships within it.

2. Reliability and Sensitivity. The reliability and sensitivity of the personality concomitant model will depend on two things. For one, it will depend on the reliability and sensitivity of the instruments used to measure the personality variables. Secondly, it will also be a function of the reliability and sensitivity of the status structure model.

The reliability and sensitivity of the status structure model will in turn depend on the characteristics of the instruments used to measure status and status consistency as well as the criteria of reliability and sensitivity established for the model.

Thus, the interrelationship of these factors as they bear on the reliability and sensitivity of the personality concomitant model may be graphically indicated:



3. Evaluating the models. A statistical approach to evaluating the results from the Nodular models seems to us to be unnecessary and perhaps undesirable for several reasons.

First, if the status structure and its personality concomitant are obtained in a predicted pattern, tests of significance may be misleading. This will be illustrated in Chapter IX where the Nodular models are examined.

Second, the approach of this study is mainly exploratory. Future work may focus on the development of appropriate statistical techniques for analyzing and evaluating the Nodular models.

Finally, systematic and meaningful correspondences between the nodular patterns of several personality concomitants lend substantial support to interpretations based on these patterns.

In short, we are advocating the same flexible approach in evaluating the Nodular models as we advocated in setting reliability and sensitivity criteria for the status structure model. At this stage, we believe that the advantages of this approach are greater than the disadvantages.

The Problem

The problem of this dissertation is to develop models which permit the articulation of stratification as a system with personality as a system such that both monotonic and non-monotonic relationships may be observed, and to assess the advantages and disadvantages of such models in comparison with the traditional linear, bivariate models of previous research.

The Nodular models are designed to fill the requirements for systems models capable of indicating both monotonic and non-monotonic relationships. The Amplifier model is designed as a type of linear model which incorporates both facets of stratification systems--composite status and status consistency--as a composite antecedent.

This section elaborates the problems associated with evaluating and comparing linear models and Nodular models. In addition to the Amplifier model, correlation and factor analytic models are included among the linear models because they best represent the approach of previous research.

Linear Models

This section presents three linear models. The first two are based on correlation analysis, one being a multivariate approach to the problem of coherent domains and the other being an approach to the problem of controlled and uncontrolled bivariate relationships. The third model is the Amplifier model.

No attempt is made to present an exhaustive taxonomy of all possible linear models. However, the first two models in this section are held to represent the types of linear models characteristic of status-personality research. The Amplifier model is included because it is a linear model which includes variables common to the Nodular model.

In short, the models included here will provide a basis for evaluating the Nodular model.

1. Functionally coherent domains. This problem is basically one of data reduction. Rather than apply each of the articulation models to each of many personality variables, we ask whether it is not possible to reduce personality measures to a few domains which are characterized by functional coherence.

A domain is a subset of variables which exhibits covariation between its constituent measures, but the measures of one subset do not covary with the measures of another subset. The measures delineated by such subsets are said to constitute functionally coherent domains if some common name can be assigned to the subset which "explains" the covariance among its measures.

Once having determined such functionally coherent personality domains, we then ask which of these domains are most status-relevant. If status variables tend to covary with the constituent personality measures of one domain and not with others, then that personality domain may be said to be status-relevant.

Of course, it may happen that some status variables are associated with one domain and other status variables with other domains. In this instance we have several domains which are status-relevant but the specification of the status variables is most important.

In either case, empirical answers to the questions posed by the problem of functionally coherent domains should help to clarify the task of articulating stratification and personality systems. Indeed, the functionally coherent domains found in our study will form the basic consequent variables for applying, comparing, and evaluating linear and Nodular models.

Finally, it should be noted that such functionally coherent domains are postulated on the basis of linear covariations. Thus, domains which

are not linearly status-relevant may be status-relevant when used as consequent criteria in non-linear approaches such as the Nodular model. However, the basic issue is to identify functionally coherent domains in the consequent system. The application of different models of articulation then will qualify what is meant by status-relevant i.e., monotonic versus non-monotonic relevancy.

2. Bivariate correlation analysis. A common approach to articulating the antecedent and consequent systems is to correlate stratification indicants with personality measures. However, as we noted in Chapter II, only a few investigations have attempted to assess the role of other variables in accounting for observed relationships between status and personality. That is, most research has been lacking in the systematic but not indiscriminate use of controls.

A second deficiency in past research is that while there is some systematic evidence for the adjustment and achievement correlates of status, comparable data is lacking for status consistency.

Thus, the problem of correlation analysis is two-fold. On the one hand, we wish to compare the zero-order personality concomitants of composite status and status consistency for each domain of personality. On the other hand, we wish to evaluate these comparisons on the basis of controls in the form of first-order partials.[5]

Previous discussions have indicated the possible importance of intelligence in mediating both adjustment and achievement concomitants. Therefore, intelligence will be our control variable.

Finally, it should be clear that both zero-order and first-order partial correlations are basically bivariate articulation models.

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[5]Of course, higher-order partials are logical but not justified by our previous theoretical analyses. Moreover, we argued for the systematic but not indiscriminate use of controls, and intelligence seems to be the most theoretically-relevant and parsimonious control at this stage.

In both instances one stratification variable is being related to one personality variable.

3. The Amplifier model. There are three problems associated with testing the Amplifier model hypothesis that status consistency amplifies the effects of composite status such that the combined effect on a personality variable is monotonic.

First, there is the question of whether a monotonic order is obtained equally well on every personality domain. This question involves the degree to which quantitative differences in the intervals between the ordered effects are similar for different personality criteria.

Second, there is the question of whether a portion of the monotonic order is due to a correlation between composite status and status consistency. If such a correlation is positive, then low versus high status consistency is to some degree functionally equivalent to low versus high composite status. The converse also may be true.

Finally, the efficiency of the Amplifier model needs to be compared domain by domain with the efficiency of the correlation model. That is, what information does the Amplifier model yield that the correlation model does not yield? Conversely, what information does the correlation model yield that the Amplifier model does not yield? In short, to what extent may the correlation and Amplifier models be viewed as complimentary approaches to the problem of linear articulation and to what extent may they be viewed as distinct approaches?[6]

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[6]It is true of course that the Amplifier model will indicate non-monotonic orders. This is not the issue, however. The fundamental concern is to determine whether the Amplifier model will yield an order which is congruent with the theory, hypotheses, and assumptions on which the model is based. This order is monotonic.

Nodular Models

The Nodular models need to be evaluated from two perspectives--the status structure itself and its articulation with personality concomitants.

1. Status structure model. There are three criteria which the status structure model should satisfy.

First, it should generate a nodular structure which results in a heterogeneous status structure. If the status structure is homogenous, there is but one status structure group and no boundaries. Thus, there are no discontinuities in the distribution of composite status and the Nodular model reduces to a status continuum model.

Second, the status structure model should produce a reasonable number of status structure groups. Thus, two or three status structure groups are sociologically meaningful. More than five or six status structure groups are not sociologically meaningful in terms of existing stratification theory and research.

Finally, another aspect of sociologically meaningfulness is that the resulting status structure groups should be substantively coherent. We should be able to name the groups such that they "make sense" in terms of current sociological views of stratification in the United States.

2. Personality concomitant model. The problem of evaluating the articulation of the status structure model with the consequent system involves two concerns.

First, there is the question of whether isomorphic or non-isomorphic relationships are typical of the articulations between the status structure and the domains of personality. Isomorphic relationships are the easiest to interpret, while only some non-isomorphic relationships are readily interpretable.

Second, the concomitant model needs to be compared with the empirical yields and efficiency of both the correlation and the Amplifier models. In short, does the concomitant model generate information equivalent to the information yielded by the other models, does it provide unique information, or does it do all that the other models do and more?

Criteria for Comparing and Evaluating

There are four general criteria by which we shall compare and evaluate linear and Nodular models: (1) data requirements, (2) generality or flexibility, (3) information yield, and (4) interpretability. These criteria were selected because they seem to reflect, in our judgment, the basic concerns found in research situations.

1. Data requirements. By data requirements we mean such things as the number of variables (few or many), the measurement characteristics of these variables (e.g., ordinal or nominal scales), and the sample size required to apply a model. Since these requirements are typically the major demands or constraints under which a researcher works, they are important characteristics for comparing and evaluating alternative models. In short, data requirements are demands made on research resources.

2. Generality or flexibility. This criterion has two aspects. One concerns the capability of a model to integrate multiple concepts or hypotheses. The other concerns the restrictions or lack of restrictions placed on the type of articulations (monotonic or non-monotonic) which may be indicated by a model.

Articulation modes may be determined by a model in two ways. One is formal in that the inherent technical features of a model permit either monotonic or non-monotonic relationships, or both, to be observed. The other is substantive in that the model is based on

assumptions and hypotheses which specify a particular type of relationship between the antecedent system and the consequent system.

In general, this criterion refers to the conceptual and methodological scope and flexibility of a model.

3. Information yield. A model may yield simple and limited information or complex and detailed information on the relationships between stratification and personality systems. This criterion emphasizes the extent to which models are capable of testing existing hypotheses and generating new hypotheses and critical questions for future research. In short, which model provides the "biggest bang per buck" in terms of data and research resources?

4. Interpretability. The interpretability of a model is partially dependent on its generality or flexibility and information yield. However, this criterion focuses on the ease with which the information generated by a model is given meaningful interpretation, apart from the quantity of information.

Thus, a model may require simple or complex interpretations based upon relatively objective or subjective standards. Further, these interpretations may require a broad or narrow theoretical framework, and varying degrees of integrative and interpretive insight. Finally, a model may permit the testing of only a null hypothesis or the testing of alternative hypotheses.

In short, interpretability refers to the ease with which the information generated by a model leads to meaningful interpretations which bear on the testing and generating of hypotheses which are of concern to the investigator.

Hypotheses

This section presents the hypotheses for each of the linear and Nodular models. The rationale for each hypothesis, developed in previous chapters, is briefly restated. The format for the hypotheses follows from the specific problems formulated for each model in the preceding section.

Linear Models

1. Functionally coherent domains. In Chapter II we noted the emphasis of research on the adjustment and achievement concomitants of social status. Moreover, we also noted that where measures of degree of association are presented, the relationship between status and achievement concomitants is stronger than the association of status and adjustment concomitants. Finally, the theoretical speculations of Havighurst (1952) and Sewell (1961) suggest that social status influences appear to be most pronounced in the area of values, attitudes, and aspirations.

Thus, the discussions of Chapter IV (Personality) and Chapter V (Articulating the Two Systems) were frequently centered on the assumption that adjustment and achievement variables constitute two distinct functionally coherent domains of personality. Therefore, given a set of adjustment, achievement, and status variables, two hypotheses are proposed:

1.1 Adjustment and achievement variables constitute two distinct functionally coherent domains of personality.

1.2 The achievement domain is more status-relevant than the adjustment domain.

2. Bivariate correlation analysis. Hypotheses for the correlation models proceed on the assumption that adjustment and achievement are two coherent domains of personality. However, these

hypotheses attempt to add two refinements to the analysis of functionally coherent domains.

In the first place, we are interested in assessing the differences between the correlations of the two facets of stratification, composite status and status consistency, with each of the two personality domains.

In Chapter V we found theoretical bases for relating composite status with both the adjustment and the achievement domains. However, we were able to relate status consistency directly to the adjustment domain only. Further, Chapter II indicated that composite status has more empirically demonstrated correlates than status consistency. Finally, the status primacy assumption, developed in Chapter V and in an earlier section of this chapter in connection with the Amplifier model, suggests that composite status has stronger direct effects than status consistency. Thus, the following three hypotheses are presented for zero-order correlation analysis:

2.1 The zero-order correlations of composite status with personality variables in both domains are on the average larger than the zero-order correlations of status consistency with variables in both domains.

2.2 Composite status is primarily correlated with achievement rather than adjustment variables. (This hypothesis is congruent with the rationale of hypothesis 1.2 for functionally coherent domains).

2.3 Status consistency is primarily correlated with adjustment variables, particularly with indicants of nervous symptoms and lowered evaluation of the self. (The specification of particular adjustment indicants is based on the rationales examined in Chapter V for the direct effects of status consistency).

A second refinement for correlation analysis is the use of a control variable. In Chapter V we noted that a linguistic theory suggests the theoretical relevancy of intelligence as a control variable in stratification and personality research. If we grant that intelligence

is equally applicable to both the adjustment and the achievement domains, and noting hypotheses 2.2 and 2.3 above, then two primary hypotheses and one secondary hypothesis for first-order partial correlation analysis are proposed:

2.4 If composite status is correlated with intelligence, then the control of intelligence will cause the covariation between composite status and adjustment variables to vanish, while the covariation between composite status and achievement variables will show a significant residual.

2.5 If status consistency is correlated with intelligence, then the control of intelligence will cause the covariation between status consistency and achievement variables to vanish, while the covariation between status consistency and adjustment variables will show a significant residual.

2.6 Thus, first-order partial correlation analysis will enhance the findings of zero-order correlation analysis. That is, the use of a control variable will support hypotheses 2.2 and 2.3 above.

3. The Amplifier model. The rationale for the Amplifier model was developed in Chapter V and elaborated in an earlier section of this chapter.

Briefly, the rationale is that composite status is the primary antecedent and status consistency amplifies the effects of composite status such that high status consistency focuses segmental statuses while low status consistency disperses segmental statuses. The result is assumed to be a monotonic ordering of a personality domain variable as follows:

Composite Status	Status Consistency	Personality Domain
High	High	A
High	Low	B
Low	Low	C
Low	High	D

Four hypotheses are associated with an evaluation of the Amplifier model:

3.1 The correlation between composite status and status consistency is either zero or low. (This is necessary in order to permit amplification effects at both the low and high levels of composite status).

3.2 Status consistency amplifies the effects of composite status such that both adjustment and achievement domain variables are ordered monotonically thus: A > B > C > D.

3.3 Amplification is due to a significant interaction between composite status and status consistency which is independent of any additive effect. (This is congruent with the assumption of amplification).

3.4 The obtained monotonic order is more pronounced for the achievement domain than for the adjustment domain. (This is congruent with the rationales for hypotheses 1.2 and 2.2 above).

Nodular Models

The general idea of the Nodular models is that a mapping of either status consistency or personality domain variables over a range of composite status will generate a nodular structure instead of, or in addition to, a linear or monotonic structure. Such a nodular structure is characterized by its non-monotonic relationships with composite status.

1. The status structure model. In Chapter III we reasoned that stratification systems presumably contain discontinuities in the degree to which segmental statuses are consistent at varying points in a hierarchical order of status. Such discontinuities are taken to be the necessary but not sufficient conditions for delineating boundaries and status structure groups.

In the Problem section of this chapter we reasoned that if the status structure model is valid, it should generate a nodular structure characterizing a heterogeneous stratification system. If it does not,

then the status structure model reduces to a status continuum model and it has no usefulness in delineating boundaries.

Further, we reasoned that a valid status structure model should generate a reasonable number of status structure groups. Current sociological views of stratification in the United States suggest that a reasonable number of status structure groups would range from two to six.

Finally, if the status structure model is valid, it should produce status structure groups which are substantively coherent and sociologically meaningful.

Therefore, three hypotheses bear on the evaluation of the status structure model:

1.1 The application of the status structure model will result in a heterogeneous status structure. That is, the status structure model will not reduce to a status continuum model.

1.2 The number of status structure groups exhibited by the heterogeneous status structure will range from two to six.

1.3 Each status structure group will be substantively coherent such that it may be named in sociologically meaningful terms. Specifically, we hypothesize that the educational and occupational composition of each group will be such as to indicate internal congruence and external differentiation along lines which are systematically meaningful.

2. The personality concomitant model. We are assuming that Nodular models will be superior to linear models in three additional respects.

For one, Nodular models will indicate the personality concomitants of boundaries as well as status structure groups. This means that the personality concomitant model will generate a nodular structure which shows mainly isomorphic relationships with the status structure.

Secondly, we assume that the personality concomitant model will indicate both monotonic and non-monotonic relationships between personality and the continuum of composite status.

Finally, we assume that the personality concomitant model will not be restricted to monotonic status-relevancy. Thus, variables which are monotonically status-irrelevant are assumed to be non-monotonically status-relevant in the Nodular models. In short, we assume that both domains of personality will be status-relevant when used in the Nodular models.

Consequently, four hypotheses are associated with an evaluation of the personality concomitant model:

2.1 The personality concomitant model will generate a nodular structure, i.e., non-monotonic relationhips between the status structure and selected personality indicants.

2.2 These non-monotonic relationships will be mainly isomorphic.

2.3 The personality concomitant model will also show monotonic relationships between composite status and selected personality indicants which are congruent with the findings of linear models.

2.4 The personality concomitant model will be relevant for both the adjustment and the achievement domains of personality.

Summary

The problem of this dissertation is to develop models which permit the articulation of stratification as a system with personality as a system such that both monotonic and non-monotonic relationships are generated, and to assess the advantages and disadvantages of such models in comparison to the traditional linear, bivariate models.

Two new models were developed which include both composite status and status consistency as antecedent system variables. One, the Amplifier model, is a monotonic model. The other, the Nodular model, is both a monotonic and non-monotonic articulation model which provides for the delineation of stratification boundaries (the status structure model) and the examination of their personality concomitants (the personality concomitant model).

Specific problems associated with evaluating each of the linear and Nodular models were discussed. In addition, four criteria for comparing and evaluating the models were presented. These are (1) data requirements, (2) generality or flexibility, (3) information yield, and (4) interpretability. Finally, hypotheses derived from the theoretical and methodological considerations of previous chapters were applied to each model.

The following chapter describes the procedure by which the hypotheses are tested and the models compared and evaluated.

CHAPTER VII

PROCEDURE

This chapter describes the sample and the data sources, the treatment of the data, instrumentation design and evaluation, and the techniques of analysis for each of the articulation models.

Sample and Data

The data used in this dissertation were collected from male students in the Lenawee County, Michigan, school system during the spring of 1957. Lenawee county is located near the extreme southeastern corner of the state. Its geographical center, Adrian, is about 55 miles southwest of downtown Detroit, 30 miles northwest of downtown Toledo, Ohio, 30 miles southwest of Ann Arbor, and 30 miles southeast of Jackson.

Adrian has two high schools. One is a large public school and the other is a small Catholic school. These and other schools in the county draw some students from the surrounding open country areas.

The names of the towns with high schools, and their populations as estimated from the preliminary reports of the 1960 United States Census, are: Addison (568), Adrian (20,347), Blissfield (2,660), Britton (617), Clinton (1,467), Deerfield (860), Hudson (2,531), Morenci (2,241), Onsted (540), and Tecumseh (7,008). An additional high school is located at Sand Creek, an unincorporated hamlet. There is no high school in Clayton (470). Cement City is partly in Lenawee County and has a high school, but it was not included in the sample

because most of its population, including those of high school age, reside in another county.[1]

The subjects consisted of the 442 seventeen-year-old high school boys in the county. Most of those no longer attending school, about 12 percent of the total age group, had taken full-time jobs. All boys who were not in school were excluded from the sample.

Data were obtained from the following sources on each of the 442 subjects:

1. The 16 Personality Factor Test, Form B (Institute for Personality and Ability Testing, 1950).

2. Test of G - Culture Free Scale 3A (Cattell and Cattell, 1950).

3. The California Test of Personality-Secondary Form AA (Tiegs, Clark, and Thorpe, 1953).

4. The Occupational Aspiration Scale (Haller, 1957, and Haller and Miller, 1963).

5. A questionnaire, entitled Occupational Plans of Michigan Youth (Haller and Miller, 1963, p. 122), containing educational and occupational plans, sociometric questions, and family and related personal data.

6. High school records for the year 1956-1957 as a basis for estimating grade-point averages.

All of the data were punched on IBM cards for high-speed computer analysis. Most of the data were converted to T-Score form (Edwards, 1954, p. 111) prior to analysis. Data that were not originally transformed to T-Scores were used in the construction of some of the instruments designed specifically for this dissertation. However, the scores for most indicats were transformed to T-Scores prior to

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[1]The Lenawee County site is described in more detail in Haller and Miller (1963), pp. 68-69.

the use of the indicants in the articulation models. The two exceptions to this are the total scores for indicants of composite status and status consistency. These indicants, however, are computed from data which is in T-Score form.

In conclusion, three assumptions regarding the sample should be noted.

First, the sample is not random with respect to the population of Lenawee County. Nevertheless, we are assuming that families having 17 year-old-boys in school are representative of the stratification structure of Lenawee County.

Second, the sample will be used primarily to compare articulation models and not to generalize to a broader population. Thus, we are assuming that the sample is adequate for purposes of comparing the models.

Finally, where substantive hypotheses are involved (e.g., the differential status-relevancy of adjustment and achievement variables), we are assuming that the Lenawee sample is representative of similar samples of 17 year-old-school-boys which may be drawn in the United States.

Instrument Design

This section describes the design and construction of instruments for assessing indicants in the antecedent and consequent systems which are not readily available from the raw data. In addition, raw data indicants are described.

The Antecedent System

There are two indicants required for the antecedent system, stratification. One is a measure of composite status. The other is a measure of status consistency.

1. Composite status. Four components of social status are available in the data. These are: (1) the prestige of the father's occupation, (2) the educational achievement level of the parents, (3) the physical characteristics of the home, and (4) the social status of the family's religious affiliation. These are among the more important general attributes of social status used in America.[2]

Prestige ratings of the father's occupation based on the National Opinion Research Center's (1947) ratings of ninety occupations and interpolations therefrom were available in the data (Haller and Miller, 1963, p. 56 ff.). However, a more recent study by Duncan (1961) assigns equivalent prestige scores to several hundred occupations.

The Duncan scores were obtained from the regression of income and education data on the NORC occupations. This regression equation was applied to other occupations not rated by the NORC study by using data on income and education available from the 1950 census.

All occupations in the Lenawee sample were re-coded in terms of the equivalent NORC prestige scores developed by Duncan. This was done because it was thought that errors due to interpolations would be reduced and consequently the prestige ranks of the occupations would more nearly approximate a true standing on social status. The degree to which the interpolated ranks are equivalent to the re-coded Duncan ranks will be examined in a subsequent section on instrument evaluation.

The educational attainment level of each parent was coded from 0 (less than eight grades) to 12 (college degree). The scores for both

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[2]In Chapter III we noted the emphasis of various authors on occupational and educational criteria. Regarding other general criteria used by persons in the United States to place individuals in a stratification order, Lipset and Bendix (1960, p. 275) cite income, consumption style, ethnic origin, and religion.

parents were combined to yield an indicant of parental educational attainment which ranged from 00 to 24.

A Home Quality indicant was constructed from selected items from a socio-economic status scale developed by Sewell (1943). The items were selected on the basis of their marginals. Items which had extremely low variance were rejected. The items, which were included in the Occupational Plans of Michigan Youth (OPMY) questionnaire (Haller and Miller, 1963, p. 132), are:

1. House ownership.
2. House construction.
3. Room-person ratio.
4. Running water facilities.
5. Power washing facility.
6. Telephone.

The sum of the raw scores for these items could range from 19 to 38. This score was taken as an indicant of economic consumption level as reflected by physical characteristics of the subject's home.

The distribution of the sample by the family's religious affiliation is shown in Table 1. Several things should be noted in Table 1.

First, the religious groups categorized under Sect I and Sect II were too few in number to be treated as separate groups for the purpose of status ratings. However, a knowledgeable colleague suggested that the breakdown into the two sects is reasonable based on differences in general social status of the various groups.[3]

Second, responses such as "Christian" and "Protestant" were excluded because they are too general. Christian Science was excluded from further analysis since there is only one respondent in this category. Consequently, the usable sample was reduced from 441 to 364.

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[3]I am indebted to Mr. Leo Driedger for his suggestions on grouping the religions into two sects. As subsequent analysis shows, his judgment that sect II is higher in status than sect I is confirmed.

Table 1. Distribution of Sample by Religious Affiliation

Group	N
Baptist	45
Roman Catholic	76
Congregational	29
Episcopalean	8
Lutheran	44
Methodist	72
Presbyterian	42
Christian Science	1
Sect I:	18
Assembly of God	
Church of Christ	
Church of God	
Nazarene	
Pentecostal	
Trinity Holiness	
Sect II:	30
Community Church	
Disciples of Christ	
Evangelical-Reformed	
Quakers (Friends)	
Salvation Army	
United Brethren	
"Christian"	1
"Protestant"	20
No answer or uncodable	55
Total	441

Having identified the major religious groups in the sample, the next problem is to rank them according to their general social status.

Unfortunately, there is no published study which ranks every religious group in our sample. The most recent study (Lazarwitz, 1961) ranks many of the religions by means of percentage groupings of education, occupation, and income data obtained from national survey samples of respondents 21 years old or older. Lazarwitz ranks the following religions in descending order of social status.

Episcopalean
Jews
Presbyterian
Methodist
Lutheran
Roman Catholic
Baptist

Our approach to the problem of ranking the religions in our sample by social status runs as follows. We shall take the Lazarwitz ranks as the basic structure for ranking the religions by a societal criterion. In order to interpolate religions not ranked by Lazarwitz, we shall rank all the groups in terms of the mean Duncan occupational prestige ratings of the fathers in each religious group. We shall refer to this ranking as being based on a local criterion. That is, the local ranks will reflect the general order of social status for each religion were the subjects of Lenawee County to rank their religious groups according to the general occupational prestige of the encumbents of each religion.

Thus, we shall rank the religious groups according to local and societal criteria. Ranks based on a local criterion are a function of the average occupational prestige of each group's members. Ranks based on a societal criterion will be a function of the Lazarwitz ranks and interpolations based on the local criterion. Table 2 shows the differences in ranks based on the two criteria.

Table 2. Religions Ranked by Social Status: Local versus Societal Criteria

	Criterion		
NORC Means	Local	Societal	T-Score Rank
69	Episcopalean	Episcopalean	77
67	Presbyterian	Presbyterian	68
62	Methodist	Methodist	59
62	Congregational	Congregational	59
61	Roman Catholic	Lutheran	50
61	Sect II	Lutheran	50
59	Baptist	Roman Catholic	41
59	Baptist	Sect II	41
58	Lutheran	Baptist	32
55	Sect I	Sect I	23

Religions having the same occupational prestige scores (rounded off to two places) were assigned to tied ranks. Each of the seven resulting ranks was given a T-Score by dividing the possible range of T-Scores (20 to 80) into six equal intervals.[4] This was done to insure

[4]When raw scores are in the form of a continuous measure rather than ranks, the usual procedure is to assign T-Scores based on the cumulative percentage of subjects in each raw score category (Edwards, 1954, pp. 111 and 511). This procedure was followed with the other three status components. When persons or objects are ranked, T-Scores corresponding to the ranks are a function of the number of objects and the position of an object (Edwards, 1954, p. 512). However, for 7 objects (religious groups in this case), the resulting distribution would range from 35 to 65. Since the other three components yield T-Scores ranging from 20 to 80 at the most and from 23 to 63 at the least, the technique presented by Edwards was rejected. Edwards' technique would insure that the distribution will have a mean of 50 and a standard deviation of 10. Our method insures a broader range, thus making the religion T-Scores more comparable in range with the other T-Scores. The method used results in means of about 50 but slightly inflates the standard deviations to around 13. We feel that this slight departure in technique is in the interest of the requirements of a status consistency measure, where comparable distribution ranges and shapes are important.

comparability of the religion ranks with the ranks of the other three status components.

As Table 2 indicates, the shifts in status ranks due to the different criteria occur at the low range of status. However, the two criteria do not, strictly speaking, result in two experimentally independent ranks. Nevertheless, a substantial number of subjects have their religious status scores shifted when the local rather than the societal criterion is applied. Which of the two ranks are most appropriate for our purposes is a question which will be examined in the section on instrument evaluation.

Finally, the other three status components were standardized in terms of T-Scores. This was done by computing the cumulative percentage of subjects for each raw score category and finding the corresponding T-Score by reference to a table of T-Scores (Edwards, 1954, p. 511).

The resulting T-Score distribution for each of the three status components has a mean of 50, a standard deviation of 10, and a possible range of 20 to 80. These standardized scores allow us to compare positions on various distributions of comparable form since we have reduced the measurements of each distribution to a common scale. Thus, we have a basis for computing not only composite status but also status consistency.

The mean of the four component status T-Scores was used as a measure of composite status. Since we have no clear theoretical basis for weighting the different components, the mean appears to be the most appropriate.

The actual computation of the composite status score was done simultaneously with the computation of the status consistency score. This will be illustrated in the following section concerned with status consistency.

2. Status consistency. Having standardized the distribution of scores for each of the five status components, we now examine the shapes of the distributions.

In Chapter III we discussed the reasons why the shapes of the distributions of status components included in a status consistency measure should be equivalent. Ideally, of course, the shapes should be identical. This allows the possibility of perfect consistency or perfect inconsistency for the entire sample.

In practice, however, this goal is only approximated. Figure 7 shows the histograms associated with the five status components: Local religion (RL), societal religion (RS), father's occupational prestige (FO), parental educational attainment (PE), and home quality (HQ).

The numbers along the abscissa of the histograms refer to the range of T-Scores for each bar. Thus, 2 indicates the range 20-29, 3 the range 30-39, and so on to 80. The ordinate of each histogram is scaled in terms of frequency. The actual T-Score range for each of the components is:

Religion (local and societal):	23-77
Father's Occupational Prestige:	20-80
Parental Education:	27-71
Home Quality:	23-63

While all of the components tend to be truncated at the high end of the status scores, the home quality indicant is the most truncated of all. In general, however, all distributions with the exception of local religion tend to be equivalent in shape.

The local religion distribution tends to depart the most from the general pattern of the other distributions. That is, there are disproportionately more subjects in the 50-59 range than in the other distributions. On this basis alone, we might reject local religion from being included in a status consistency measure. However, there are

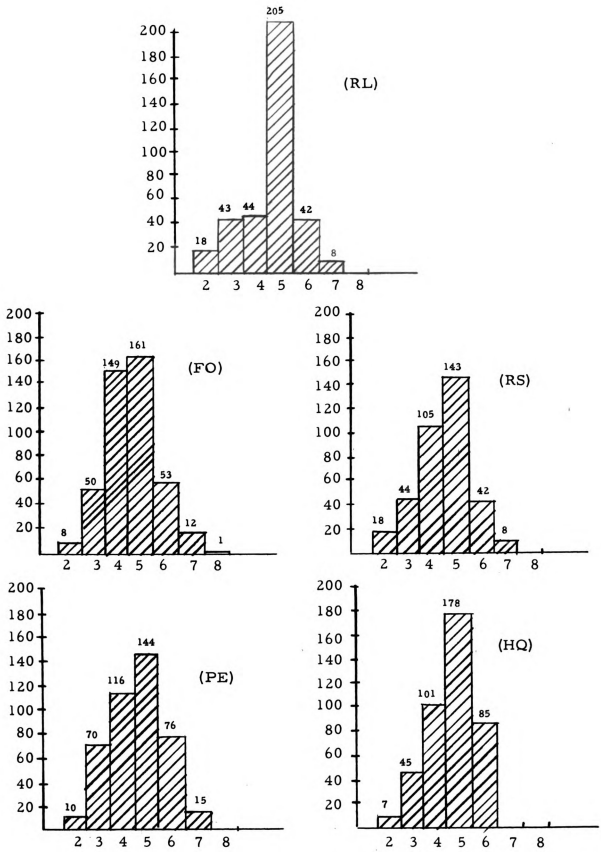

Figure 7. Histograms of five status components.

other considerations in addition to the formal one of distribution shape. These are examined in the section on instrument evaluation.

There may be some distortion in the computation of status consistency because of differences in the shapes of the status component distributions. However, we may partly compensate for this in our method of computing status consistency by giving more weight to large differences in status ranks and less weight to small differences in status ranks. In order to do this, we have adapted Lenski's (1954) technique for computing a status consistency score:

$$SC = 80 - \left[\sum_{i=1}^{n} (X_i - \bar{X}_n)^2 \right]^{\frac{1}{2}}$$

where: X_i = standardized T-Score on status component i.

$\bar{X}_n$ = the mean of the n standardized status component T-Scores.

80 = a constant such that maximum variance among the component scores will give SC = 20, while zero variance will give SC = 80.

SC = a status consistency score for the individual.

By taking squared deviations from the mean rather than simple deviations, we emphasize the effects of large differences in component scores and minimize the effects of small differences. The square root of the sum of square deviations reduces the variance value to a two-digit figure when rounded. This variance figure is subtracted from a constant in order to insure semantic congruence with the term "consistency." Thus, the possible range of SC scores is from 20 (a maximum variance of 60) to 80 (a minimum variance of zero).

It will be noted that $\bar{X}_n$ is equal to our measure of composite status. Thus, the computation of SC also involves the computation of composite status.[5]

In summary, we have described the development of indicants of composite status and status consistency. We consider the composite status measure as an indicant of socioeconomic status (SES) because of the inclusion of both prestige and economic components. Specifically, the measure of composite status which includes the local religion ranks will be called SES $\bar{X}_1$, and the measure which contains the societal religion ranks will be called SES $\bar{X}_2$. Similarly, status consistency computed from local religion ranks will be called SC_1, and from societal religion ranks SC_2.

In the section on instrument evaluation we shall attempt to choose one of the SES measures and one of the SC measures as the basis for evaluating the articulation models.

The Consequent System

There are six major indicants for the consequent system, personality. Four of these are in the adjustment domain, while two are in the achievement domain. This section examines these six indicants.

1. Adjustment indicants. In Chapter V value-expectation conflict was viewed as mediating both composite status and status consistency in relation to various symptoms of psychological stress. Specifically, value-expectation conflict was viewed as leading to uncertainty,

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[5]The computation of SC and $\bar{X}_n$ is tedious when the size of the sample becomes large. In the present study these computations were performed on the CDC 3600 computer of the Computer Center, Michigan State University. The author acknowledges the valuable assistance of Mary J. Beech of the Computer Institute for Social Science Research, MSU, who wrote a FORTRAN program to compute SC and $\bar{X}_n$ at the request of the author. A copy of this program is presented in Appendix B.

frustration, and lowered evaluation of the self. Similarly, composite status was linked to psychological stress via frustration-anxiety mechanisms.

Thus, there are four plausible consequences of psychological stress arising from low composite status or low status consistency. These are (1) anxiety in general, (2) anxiety over social status, (3) nervous symptoms, and (4) lowered evaluation of the self by others.

These four consequences are viewed as components of personality adjustment since they may influence the degree to which the individual is able to cope effectively with his social-psychological environment. This section examines indicants designed to assess these four consequences.

One of the pressing problems in social psychological research is data reduction in the interest of scientific parsimony. In the area of personality assessment, the work of factor theorists such as Cattell (1957) has provided personality measures of a small number of relatively independent dimensions of personality. This is achieved by factor analyzing a large number of questionnaire items and matching the resulting factors with personality assessments based on life history and behavioral observation information. The 16 Personality Factor Test (Cattell, Saunders, and Stice, 1950) is an example of this approach.

Cattell (1957) and his colleagues have in turn factor analyzed the factors of the 16 Personality Factor Test (16 PF). The resulting factors are called second-order factors. Cattell (1957, p. 316) views these second-order factors as particularly relevant for sociology:

> . . . in the personality secondaries we favor the view that they may sometimes be factors that could be first-orders in neighboring physiological and sociological fields of interest. That is to say, they could be sociological influences organizing sets of personality traits within society.

Our interest is in a second-order factor which Cattell (1957, p. 318 ff.) calls "anxiety versus integration or adjustment." This second-order factor is assessed by seven factors from the 16 PF. These factors and their associated loadings on the anxiety-integration factor as determined by Cattell are shown in Table 3.

Table 3. Loadings for the Anxiety versus Integration Second-Order Factor of the 16 PF Test Based on Q Data (from Cattell, 1957, p. 319)

Factor	Second-Order Loading
Q_4 : Nervous Tension	(+) 62
O : Anxious Insecurity	(+) 62
F : Surgency	(+) 17
L : Paranoid Schizothymia	(+) 54
H : Adventurous Autonomic Resilience	(-) 46
C : Emotional Stability	(-) 53
Q_3 : Will Control	(-) 66

Our task is to construct an indicant of the anxiety-integration factor having a single score. However, first we need to determine whether this factor is functionally coherent for the Lenawee County data. Therefore, we shall factor analyze the 16 PF scores for the Lenawee subjects and choose those factors among the seven presented in Table 3 which constitute a single second-order factor for the Lenawee data. This is necessary since second-order factors as well as first-order factors are a function of both the test and the sample.

The 16 PF factor scores were intercorrelated by the product-moment method.[6] The resulting correlation matrix was factor analyzed

[6]The correlation matrices for this and all following factor analyses are presented in Appendix A.

by the principal axes technique using the highest correlation for each variable as an estimate of communalities (Harman, 1960). The Kiel-Wrigley criterion was used to select the number of factors to be rotated orthogonally by means of the Quartimax method (Neuhaus and Wrigley, 1954).[7]

Two factors, accounting for 20 per cent of the total matrix variance, met the Kiel-Wrigley criterion. The rotated loadings, principal axes loadings, and computed communalities are presented in Table 4.

For purposes of interpretation, each primary factor is assigned to the second-order factor on which the primary factor has the highest loading. The order of the primary factors in Table 4 has been arranged in order to facilitate this interpretation.

The first seven factors in Table 4 are the factors constituting the second-order factor anxiety versus integration identified by Cattell. Our analysis shows that for the Lenawee data, only five of these seven factors clearly belong to rotated factor I. Moreover, there appear to be two additional factors not identified by Cattell but which have their highest loading on rotated factor I. These are I, Emotional

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[7]These analyses and all following analyses were performed on a CDC 3600 computer using a program developed by J. DeJonge of the Computer Institute for Social Science Research, MSU. The Kiel-Wrigley procedure begins with the two principal axes factors having the largest eigen values and adds an additional factor for each rotational solution until the solution yields a factor with fewer variables with highest loadings on it than the number specified by the investigator. In this and all following factor analyses the criterion was set at 3. Three was chosen to avoid factors based on "doublets," i.e., a pair of variables having a high correlation. Such "doublets" are likely to occur by chance and their factorial stability is dubious (personal communication with C. F. Wrigley). See Use of Factor Analysis Programs for the CDC 3600, CISSR Program Description 1, October 7, 1963, Michigan State University Computer Laboratory.

Table 4. Second-Order Factor Matrices for the 16 PF Test (N = 432)[a]

Factors	Quartimax I	Quartimax II	Principal Axes I	Principal Axes II	h^2
Q_4 : Nervous Tension	-68	23	-68	26	52
O : Anxious Insecurity	-60	05	-60	08	36
F : Surgency	-16	41	-14	41	19
L : Paranoid Schizothymia	-21	32	-20	32	14
H : Advent. Auton. Resil.	50	25	51	23	32
C : Emotional Stability	51	-20	51	-22	30
Q_3 : Will Control	65	01	65	-01	42
I : Emotional Sensitivity	-28	-07	-28	-06	08
M : Bohemianism	-25	-15	-26	-14	09
G : Super-Ego Strength	33	42	34	41	28
N : Sophistication	19	36	20	35	16
B : General Intelligence	20	35	21	34	16
A : Cyclothymia	-02	20	-01	21	04
E : Dominance	03	17	03	16	03
Q_2 : Self-sufficiency	02	13	02	13	02
Q_1 : Radicalism	-05	12	-05	12	02
Percent total variance:	14	06			

[a]All loadings are positive unless indicated. Decimals omitted.

Sensitivity, and M, Bohemianism. However, these loadings are small.

For the Lenawee data rotated factor I appears to be essentially the same factor called anxiety versus integration by Cattell. However, the loading signs are reversed. Nevertheless, the signs change at the appropriate points in the order of the primary factors. Consequently, we conclude that for the Lenawee data rotated factor I may be interpreted as an integration versus anxiety second-order factor.

Therefore, the five primary factors and their respective loadings chosen to constitute an indicant of integration versus anxiety are:

Q_4 : Nervous Tension (-68)
O : Anxious Insecurity (-60)
H : Adventurous Autonomic Resilience (+50)
C : Emotional Stability (+51)
Q_3 : Will control (+65)

Our next problem is to construct a composite measure of integration or anxiety based on these five factor scores. A mean score of the five factor scores is the most direct approach.[8] However, this cannot be done with the factor scores as they now stand. This is

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[8]A psychometrically more elegant approach would be to construct a factor-weighted index for integration based on the different factor loadings. Thus, high scores on Q_4 and O would substract from high scores on H, C, and Q_3 to produce a single score integration (I) in the following way:

$$I = (.65)\, X_{Q_3} + (.51)\, X_C + (.50)\, X_H - (.60)\, X_0 - (.68)\, X_{Q_4} + K$$

where the X_j are standardized scores on each of the five factors, and K is a constant.

However, the weights (factor loadings) are so similar that the additional precision of this method over a method where all weights equal 1.0 (arithmetic mean) is negligible.

because a high score on factors Q_4 and O indicates anxiety or lack of integration, whereas a high score on factors H, C, and Q_3 indicates integration or lack of anxiety. Thus, if these scores for an individual were averaged, a high mean could indicate either high anxiety (when the scores on Q_4 and O are high) or high integration (when the scores on H, C, and Q_3 are high).

What we desire is to have all of the factor loadings either positive or negative. Then scores on each of the five factors will have consistent meaning with respect to either anxiety or integration.

The solution is simple. We reflect the scores on Q_4 and O such that the reflected scores Q_4^* and O^* are directly proportional to integration (lack of anxiety). A reflected score X_j^* in terms of the original score X_j is given by:[9]

$$X_j^* = 100 - X_j$$

The constant 100 was chosen because the original scores are in T-Score form. Thus, the mean (= 50), the standard deviation (= 10), and the range (20 to 80) of the original scores are preserved.

Consequently, a high anxiety (low integration) score of 80 on Q_4 or O will give a low integration score of 20 on Q_4^* or O^*. Conversely, a low anxiety (high integration) score of 20 on Q_4 or O will give a high integration score of 80 on Q_4^* or O^*.

Therefore, the mean of factor scores Q_4^*, O^*, H, C, and Q_3 will be directly proportional to integration or adjustment and inversely

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[9]Since the reflection transformation is linear, the correlation between X_j^* and X_j will be r = -1.0. Thus, the signs (but not the values) of the loadings of Q_4 and O on rotated factor I in Table 4 will be changed from negative to positive. These positive loadings are the loadings of Q_4^* and O^*.

proportional to anxiety (lack of integration or adjustment). We shall refer to this measure as integration versus anxiety, or simply IA $\overline{X}$.

Two other indicants of personality adjustment are based on items from the California Test of Personality (Tiegs, Clark, and Thorpe, 1953).

A measure of lack of nervous symptoms (NS) is based on the total score of the 15 items of Subscale 1 F of the California Test of Personality (CTP). The manual for the CTP describes this subscale as follows (Thorpe, Clark, and Tiegs, 1953, p. 3):

> The individual who is classified as having nervous symptoms is the one who suffers from one or more of a variety of physical symptoms such as loss of appetite, frequent eye strain, inability to sleep, or a tendency to be chronically tired. People of this kind may be exhibiting physical expressions of emotional conflicts.

Another scale was constructed from 15 additional items scattered throughout the CTP. These items ask the respondent to indicate whether various individuals (family, parents, classmates, teachers, and "people") evaluate him in a positive or negative way. The items are scored and summed such that a high score indicates positive evaluations by others and a low score indicates negative evaluations by others. This scale is called the Perceived Evaluation-by-Others scale, or simply PEO.

The PEO scale is assumed to ascertain a segment of the self-concept as it is influenced by evaluations by others. The Nervous Symptoms (NS) scale is assumed to assess aspects of psychological stress such as nervous behavior, restlessness, and psychosomatic complaints. The specific items for both these scales will be presented when they are factor analyzed in the section on instrument evaluation.

Finally, an indicant of concern over social status, or status anxiety, was constructed from three items from the California Test of Personality (Tiegs, et al., 1953) and four items from the OPMY

questionnaire (Haller and Miller, 1963, p. 122). These items were scored and summed such that a high total score was taken to indicate high status anxiety (SA). The items are presented with the factor analysis of the SA scale in the section on instrument evaluation.

In summary, four indicants of personality adjustment have been presented. These are (1) Integration versus Anxiety (IA $\bar{X}$), (2) Lack of Nervous Symptoms (NS), (3) Perceived Evaluation-by-Others (PEO), and (4) Status Anxiety (SA). These indicants of personality adjustment were selected because they represent many of the adjustment variables used in previous research (Chapter II) and because they flow from the theories of mediation processes examined in Chapter V.

2. Achievement indicants. Two achievement indicants which have considerable validity as status-relevant personality variables are levels of occupational and educational aspiration.[10]

Levels of occupational aspiration were based on the total score of the Occupational Aspiration Scale (Haller, 1957; Haller and Miller, 1963; Miller and Haller, 1964). The Occupational Aspiration Scale (OAS) is an eight item instrument which assesses occupational aspirations at the realistic and idealistic levels, each at two career points, after schooling and at age 30.

Educational aspirations (EA) were based on data from the Occupational Plans of Michigan Youth questionnaire (Haller and Miller, 1963, p. 126). Educational aspirations were coded in terms of the number of years of further education the respondent planned to get.

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[10]Literature reviewed in Chapter II indicated that these two indicants are frequently correlated with social status. In addition, we noted in Chapter III that educational and occupational criteria are considered by most theorists to be among the most important components of social status. Thus, occupational and educational aspirations have considerable conceptual and empirical validity as status-relevant personality variables.

Both OAS total scores and levels of educational aspiration (EA) were transformed to T-Score form.

Control and Other Variables

This section presents the indicant used for control analysis and other variables which are included in some of the analyses but which are not readily grouped as either adjustment or achievement personality variables.

1. Control indicant. Intelligence, the control variable chosen for the correlation articulation models, is based on the Test of G - Culture Free Scale 3 A (Cattell and Cattell, 1950). We shall refer to this measure as CFIQ. The CFIQ test is a non-verbal perceptual instrument which attempts to assess a general ability factor in terms of "relation education" within a culture-common framework (Institute for Personality and Ability Testing, 1959, pp. 8-9). CFIQ scores are in T-Score form.

2. Other variables. There are three classes of other variables which are included in subsequent analyses.

First, there are 11 factor scores from the 16 P. F. Test (Cattell, et al., 1950) which are not included in the IA $\overline{X}$ indicant. These 11 variables (in T-Score form) are used in the analysis of functionally coherent domains and in the zero-order correlation analysis as marker variables for past research (Haller and Thomas, 1962; Lenski, 1954) and for possible future research. These 11 factors are:

A : Cyclothymia
B : General Intelligence
E : Dominance
F : Surgency
G : Super-Ego Strength
I : Emotional Sensitivity
L : Paranoid Schizothymia
M : Bohemianism
N : Sophistication

Q_1 : Radicalism versus Conservatism
Q_2 : Self-Sufficiency

Second, there are three measures which are achievement-related but which do not, strictly speaking, constitute achievement orientations of the subjects.

Two of these have to do with the respondent's perception of the educational and occupational aspirations the parents have for him. One is parental desire for educational achievement (PDE), and the other is parental desire for occupational achievement (PDO). The third measure is the Grade Point Average (GPA) of the respondent for the year 1956-1957.

These three indicants are in T-Score form and are derived from the OPMY questionnaire and school records. They are included in the analysis of functionally coherent domains and in the zero-order correlation analysis as marker variables for identifying an achievement domain and for past research (Haller and Miller, 1963).

Finally, there are two variables which are used for instrument evaluation. One, the total adjustment score of the California Test of Personality (Tiegs, et al., 1953), is used to evaluate the IA $\bar{X}$ indicant. The other is a single item from the CTP, number 46, which reads:

Do you feel that you fit well into the community?

This item is used as one of the criteria for selecting SES $\bar{X}_1$ or SES $\bar{X}_2$, and SC_1 or SC_2. The CTP total adjustment score, but not item 46, is in T-Score form.

Summary and Conclusions

This section has examined the development of the major indicants for the application and comparison of linear and Nodular articulation models.

For the antecedent system, these are composite status and status consistency. Each of these two indicants has two types: one based on a local religion criterion (SES $\bar{X}_1$ and SC_1) and one based on a societal

religion criterion (SES $\bar{X}_2$ and SC_2). One of these types for each indicant will be selected in the next section.

There are six major indicants for the consequent system. These are integration versus anxiety (IA $\bar{X}$), lack of nervous symptoms (NS), perceived-evaluation-by-others (PEO), and status anxiety (SA) for the adjustment domain. The other two, occupational aspirations (OAS) and educational aspirations (EA), constitute the major indicants in the achievement domain. The indicants for the consequent system will also be evaluated in the following section.

Finally, a measure of intelligence (CFIQ) and several measures for special purposes were described.

Instrument Evaluation

This section evaluates the major indicants described in the previous section in terms of factor analysis, criterion analysis, and estimated test-retest reliability.

Criterion and Factor Analyses

Criterion analysis is applied to the two types of composite status and status consistency indicants and to the Integration versus Anxiety indicant.

Factor analysis attempts to determine the degree to which various instruments ascertain one or more underlying dimensions. The interpretation and naming of these underlying dimensions is an aid in evaluating the instruments. Factor analysis is applied to the Home Quality Index, six status variables, and the Status Anxiety, Nervous Symptoms, and Perceived-Evaluation-by-Others indicants.

1. Home Quality Index. The six items of the Home Quality Index were intercorrelated by the product-moment method. The resulting

correlation matrix was factor analyzed by the principal axes technique using the highest correlation for each variable as a communality estimate (Harman, 1960). The Kiel-Wrigley criterion was set at three and the factors were rotated orthogonally by means of the Quartimax method (Neuhaus and Wrigley, 1954).[11]

The factor matrices and communalities are presented in Table 5. Two factors, accounting for 17 per cent of the total matrix variance, were rotated. However, factor II does not meet the Kiel-Wrigley criterion and it accounts for only 4 per cent of the total variance.

Table 5. Factor Matrices for the Home Quality Items[a] (N = 416)

	Quartimax		Principal Axes		
Items	I	II[b]	I	II	h^2
House ownership	45	06	45	05	21
Room-person ratio	34	09	34	08	12
Running water	46	-11	45	-13	22
Telephone	49	-01	49	-02	24
House construction	08	32	09	32	11
Power washing	-04	33	-03	33	11
Percent total var.:	13	04			

[a] All loadings are positive unless indicated. Decimals omitted.
[b] Does not meet the Kiel-Wrigley criterion.

Factor I is clearly a home quality factor. However, factor II is difficult to interpret. Its items (house construction and power washing facilities) do not exhibit any distinct content differences in contrast to the items of factor I.

[11] The same procedure was followed for all of the factor analyses in this section. See footnotes 6 and 7 in a previous section of this chapter.

We conclude that the Home Quality Index is measuring one major component of the physical characteristics of the house. However, there is considerable specific item variance in the total score for the Index. Thus, it appears to be only a very crude indicator of a single underlying dimension of home quality.

2. Six status variables. Table 6 presents the principal axes factors, the rotated factors, and the communalities for six status variables. These are occupational prestige (both original NORC and Duncan), parental education, home quality scores, and local versus societal rankings of the social status of religious affiliations.

Rotated factor I is clearly a general factor since all the variables have moderate to high loadings on it. This factor may be interpreted as a general social status factor and it accounts for 30 per cent of the total matrix variance. However, local and societal religion variables have their highest loading on rotated factor II which accounts for substantial variance, 26 per cent of the total. But factor II does not meet the Kiel-Wrigley criterion. Thus, we tend to interpret it as due to the fact that local and societal religion ranks are not strictly speaking experimentally independent.

The loadings of local and societal religion ranks are essentially equal on rotated factor I. Thus, both appear to be equivalent measures of composite status and Table 6 does not offer any basis for choosing between the two.

Similarly, both the Duncan and the NORC occupational prestige ratings have virtually identical loadings on rotated factor I. However, they are far from equivalent measures since their product-moment correlatation is only + 0.63. Therefore, because the Duncan ratings are more objective and include far fewer interpolations, we shall use the Duncan ratings in our indicants of composite status and status consistency.[12]

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[12]The frequency of interpolations when the Duncan scale was used ran less than 10 per cent of the total occupations assigned prestige scores.

Table 6. Factor Matrices for Six Status Variables (N = 339)[a]

Variables	Quartimax I	Quartimax II[b]	Principal Axes I	Principal Axes II	h^2
Occupational Prestige (Duncan)	77	04	63	44	60
Occupational Prestige (NORC)	80	-04	60	53	64
Parental Education	57	14	54	24	35
Home Quality Score	34	18	37	07	14
Religion: Local	25	86	73	-51	80
Religion: Societal	23	86	72	-53	80
Per cent total variance	30	26			

[a] All loadings are positive unless indicated. Decimals omitted.
[b] Does not meet the Kiel-Wrigley criterion.

We conclude that occupational prestige (Duncan), parental education, home quality, and religion (local and societal) tend to measure the same common factor, which we call social status. Therefore, we are justified in taking the mean of these measures as an indicant of composite status. Nevertheless, these status components are sufficiently independent to justify using them in an indicant of status consistency.

3. Local versus societal criteria. Having decided to use the Duncan occupational prestige ratings, it remains to choose between composite status and status consistency indicants based on local versus societal religion ranks.

Two criteria for this choice are considered. One associates the status indicants with a criterion of "fit with the community." The other criterion is that, ceteris paribus, the indicant that yields the highest variance is to be preferred.

The criterion of "community fit" was chosen for two reasons. First, it is not used as a consequent indicant for subsequent analyses. Second, it has a certain degree of face validity in that individuals with high composite status and high status consistency might be expected to "fit" into the community better than those having low composite status and low status consistency.

Thus, the status indicants were dichotomized above and below the mean and applied to two-by-two contingency tables where the answer to item 46 of the California Test of Personality was used as the criterion variable. The distributions were evaluated for statistical significance by means of the Chi-square corrected for continuity (Edwards, 1954, p. 383). Table 7 shows how well each of the composite status and status consistency indicants discriminate on the criterion of "community fit." Among the composite status indicants, SES $\bar{X}_1$ (local) produces a larger Chi-square than does SES $\bar{X}_2$ (societal). Similarly, for the status consistency indicants, SC_1 (local) yields a significant Chi-square while SC_2 (societal) is not significant at the .05 level.

The degree of association (the higher composite status and status consistency, the more frequent the "yes" response to the criterion question) is given in terms of the phi coefficient, r_ϕ (Edwards, 1954, p. 382).

We conclude that SES $\bar{X}_1$ and SC_1, derived from local religion ranks, are probably the best indicants for our purposes based on their ability to discriminate a meaningful criterion independent of the consequent indicants to which they will be applied.

The variance criterion is examined in Table 8 along with the intercorrelations among the status indicants. As Table 8 indicates, the variances of the composite status indicants and the variances of the status consistency indicants are virtually identical. Thus, variance does not provide a basis for eliminating one pair of indicants.

Table 7. Comparison of Chi-Squares for SES_1, SES_2, SC_1, and SC_2 Against the Criterion: "Do you feel that you fit well into the community?"[a]

	Criterion			
SES $\bar{X}_1$	Yes	No	N	
30-50	142	27	169	$\chi^2_c = 7.20$
51-69	163	11	174	$p < .01$
N	305	38	343	$r_\phi = .14$

	Criterion			
SES $\bar{X}_2$	Yes	No	N	
30-50	153	27	180	$\chi^2_c = 5.17$
51-69	152	11	163	$p < .05$
N	305	38	343	$r_\phi = .12$

	Criterion			
SC_1	Yes	No	N	
46-65	140	24	164	$\chi^2_c = 3.93$
66-78	165	14	179	$p < .05$
N	305	38	343	$r_\phi = .11$

	Criterion			
SC_2	Yes	No	N	
46-65	139	22	161	$\chi^2_c = 1.63$
66-77	166	16	182	$p > .05$
N	305	38	343	$r_\phi = .07$

[a]From item number 46 of the California Test of Personality (Tiegs, Clark, and Thorpe, 1953).

Table 8. Intercorrelations, Means, Standard Deviations, and Ranges for Four Status Variables (N = 340)

	Variables							
	1	2	3	4	Mean	SD	Range	
1. SES $\bar{X}_1$	--	96	29	15	50.69	6.95	30-69	(39)
2. SES $\bar{X}_2$		--	20	21	50.29	7.04	30-69	(39)
3. SC_1			--	78	65.63	6.20	45-78	(33)
4. SC_2				--	65.15	6.08	46-77	(31)

[a]Decimal points omitted. All correlations significant at the .05 level.

Moreover, the two composite status indicants correlate + 0.96 which means that they are equivalent. The correlation between the two status consistency indicants is lower, with r = + 0.78. While not equivalent, the two status consistency indicants are substantially correlated. Finally, we examine the question of the independence of various pairs of composite status and status consistency indicants. As might be expected, the lowest intercorrelations (+ 0.15 and + 0.20) are between mixed types. We exclude these as undesirable, since a pair of composite status and status consistency indicants should be based on one or the other religion ranks. This leaves the two matched pairs, and these have correlations of + 0.21 for societal indicants and + 0.29 for local indicants. These correlations are not sufficiently different to warrant the choice of the societal pair over the local pair.

In conclusion, the evidence tends to favor the choice of composite status and status consistency indicants based on local religion ranks. While local and societal composite status are equivalent in terms of their intercorrelation and variances, they differ in their discrimination of a criterion. Local and societal status consistency indicants are

less equivalent in terms of their intercorrelation but equivalent in variance, and they also differ in their discrimination of a criterion. Thus, SES $\bar{X}_1$ and SC_1 will be the indicants used for the antecedent system in the linear and Nodular models.

4. Integration versus anxiety indicant. The factor analysis of the IA $\bar{X}$ indicant was presented earlier. For reasons discussed there, it is not necessary to re-factor the five primary factor scores when the reflected scores Q_4^* and O^* are used.

However, it is desirable to attempt to clarify what is meant by integration or adjustment. One possible meaning for the IA $\bar{X}$ indicant is that it assesses what is commonly referred to as "personality adjustment."

The California Test of Personality (Tiegs, et al., 1953) is a widely used test for assessing personality adjustment. The CTP has a total adjustment score based on the sum of its subscale scores. The CTP total adjustment score has a product-moment correlation of + 0.68 with the IA $\bar{X}$ indicant score on a sample of 340. Thus, we have tentative but substantial evidence that the IA $\bar{X}$ indicant is assessing to a significant degree personality adjustment.

However, approximately 50 per cent of the variance in the IA $\bar{X}$ indicant is not accounted for in terms of CTP total adjustment variance. This may mean that integration versus adjustment is only one component of personality adjustment, or it may indicate that the IA $\bar{X}$ indicant is measuring more than what is meant by personality adjustment in the CTP.

5. Status anxiety indicant. The factor matrices and communalities for the SA indicant are presented in Table 9. Two factors, accounting for 22 per cent of the total variance, were rotated. However, rotated factor II fails to meet the Kiel-Wrigley criterion.

Table 9. Factor Matrices for the Status Anxiety Items (N = 409)[a]

Items	Quartimax I	Quartimax II[b]	Principal Axes I	Principal Axes II	h^2
1. Do you feel uncomfortable when you are alone with important people? (yes)[c]	13	00	11	-07	02
2. The girls I would like to date prefer to go out with boys whose families are more important than mine. (yes)	49	-03	40	-28	24
3. I often wish my father was a more important man in the community than he is. (yes)	51	26	57	-05	33
4. Do you feel that people recognize your social standing as they should? (no)[c]	32	09	32	-09	11
5. Do you avoid inviting others to your home because it is not as nice as theirs? (yes)[c]	42	-06	33	-26	18
6. I believe my father's education is poor or not very good. (yes)	12	54	38	40	30
7. I often wish my father had a better job. (yes)	45	48	64	18	43
Per cent total variance:	14	08			

[a] All loadings are positive unless indicated. Decimals omitted.

[b] Kiel-Wrigley criterion not met.

[c] Items 1, 4, and 5 are from the California Test of Personality (Tiegs, Clark, and Thorpe, 1953), items number 11, 28, and 47 respectively. All the other items are from the OPMY questionnaire (Haller and Miller, 1963, p. 122).

With the exception of item 6, all the items load on rotated factor I which accounts for 14 per cent of the total variance. Item 6 clearly loads on factor II, while item 7 tends to split its loadings between factor I and II. Factor II accounts for 8 per cent of the total variance.

Factor I seems to be general concern over social status. Factor II appears to be interpretable as a specific kind of status concern, i.e., concern over the educational and occupational achievements of the father.

In conclusion, the SA indicant appears to be a measure of a general and a specific concern over social status. However, the two factors account for only 22 per cent of the total variance. Thus, the indicant is crude and the total score contains considerable specific item variance.

6. Nervous symptoms indicant. The Quartimax loadings, principal axes loadings, and communalities for the NS indicant are presented in Table 10. Two factors, accounting for 23 per cent of the total matrix variance, were rotated.

Factor I, the largest factor, has low to moderate loadings on all of the items. However, it has its highest loadings on items which are interpretable as psychosomatic complaints. Factor II, which accounts for only 6 per cent of the total variance but which meets the Kiel-Wrigley criterion, has its highest loadings on items which are interpretable as restlessness. There are variations in these patterns, however.

Thus, item 6, which tends to split its loadings between factors I and II, directly concerns restlessness. Items 12 and 13 clearly belong to factor II, and they specifically deal with restlessness. Items 14 and 15 tend to split their loadings between the two factors. Item 14 concerns hearing difficulties, while item 15 deals with

Table 10. Factor Matrices for the Lack of Nervous Symptoms Sub-Scale of the California Test of Personality (N = 430)[a]

Items[b]	Quartimax		Principal Axes		h^2
	I	II	I	II	
1.	44	00	41	-17	20
2.	42	-11	35	-25	18
3.	49	-05	44	-22	24
4.	34	-02	31	-14	12
5.	49	-03	45	-21	24
6.	42	39	53	21	33
7.	57	10	56	-12	33
8.	40	24	46	08	22
9.	54	17	56	-04	32
10.	39	02	37	-12	15
11.	36	07	36	-06	14
12.	26	52	43	39	34
13.	32	40	44	26	26
14.	28	31	38	18	18
15.	24	26	32	15	13
Per cent total variance:	17	06			

[a] Decimals omitted. All loadings positive unless indicated.

[b] The items and their CTP item numbers in parentheses are as follows (Tiegs, Clark, and Thorpe, 1953):

1. Are you likely to stutter when you get worried or excited? (76)
2. Are you bothered by periodic dizzy spells? (77)
3. Do you have frequent headaches for which there seems to be no cause? (79)
4. Do you sometimes walk or talk in your sleep? (80)
5. Do you suffer often from annoying eye strain? (81)
6. Are you more restless than most people? (83)
7. Do you lose a great deal of sleep because of worry? (86)
8. Do you find that you are tired a great deal of the time? (87)
9. Do you often have considerable difficulty in going to sleep? (88)
10. Do you sometimes have nightmares? (89)
11. Do your muscles twitch some of the time? (90)
12. Is it hard for you to sit still? (82)
13. Are you inclined to drum restlessly with your fingers on tables, desks, and chairs? (84)
14. Do people frequently speak so indistinctly that you have to ask them to repeat what they said? (85)
15. Do you have the habit of biting your finger nails? (78)

behavior which might be symptomatic of restlessness. Thus, the loading pattern for factor II is less sharp than the pattern for factor I.

We conclude that factor I is a general factor measuring psychosomatic complaints. Since it is the largest factor, the NS indicant appears to be primarily assessing psychosomatic symptoms. Factor II is smaller and is tentatively interpreted as restlessness. However, the total variance accounted for by factors I and II is only 23 per cent. Thus, the total score for the NS indicant contains a large amount of specific item variance.

In short, the NS indicant total score is directly proportional to lack of psychosomatic symptoms and, to a lesser degree, to lack of restlessness.

7. Perceived Evaluation-by-Others indicant. The factor matrices and communalities for the PEO indicant are presented in Table 11. Two factors, accounting for 25 per cent of the total matrix variance, were rotated.

Factor I, with the exception of item 15, has small to moderate loadings on all of the items. Thus, it appears to be a general factor. Factor II accounts for 9 per cent of the total variance and meets the Kiel-Wrigley criterion. Items 10 through 15 have their highest loadings on this factor.

Factor I may be interpreted as a positive evaluation factor by noting the items which have their highest loadings on it. However, items 3 and 7 tend to split their loadings between factors I and II. These items refer to "failure" and "doubt." All of the items loading on factor II refer to negative feelings, e.g., "discouraged," "not appreciate," "offended," and "criticize."

We conclude that factor I, the largest factor, is a general factor measuring positive evaluation by others. However, factor II is interpreted with caution since it is not clear why lack of rejection

Table 11. Factor Matrices for the Perceived Evaluation-by-Others Scale Items (N = 433)[a]

Items[b]	Quartimax		Principal Axes		h^2
	I	II	I	II	
1.	32	-04	25	-20	10
2.	47	04	43	-21	22
3.	42	22	48	-03	23
4.	63	05	56	-29	40
5.	38	26	46	03	21
6.	55	05	50	-24	30
7.	48	25	54	-04	29
8.	52	03	46	-25	27
9.	32	10	32	-08	11
10.	20	39	37	23	19
11.	38	43	55	17	33
12.	22	47	43	28	27
13.	34	45	52	21	32
14.	28	41	45	21	25
15.	09	39	28	29	16
Per cent total variance:	16	04			

[a] Decimals omitted. All loadings positive unless indicated.

[b] The items, scattered throughout the California Test of Personality (Tiegs, Clark, and Thorpe, 1953), follow with their CTP item numbers in parentheses:

1. Do your friends seem to think you have likable traits? (16)
2. Do your folks seem to think you are going to amount to something? (22)
3. Are you considered a failure in many of the things you do? (25)
4. Do you feel that your classmates are glad to have you as a member of their school? (49)
5. Are you well enough liked at home that you feel happy there? (55)
6. Do you feel that people usually think well of you? (60)
7. Do your folks appear to doubt whether you will be successful? (144)
8. Are your classmates usually friendly to you? (152)
9. Do your classmates seem to approve of the way you treat them? (164)
10. Are you often discouraged because people fail to recognize your worth? (26)
11. Do you often feel that people do not appreciate you or treat you as they should? (74)
12. Do you find that many people are easily offended by you? (107)
13. Do members of your family seem to criticize you a lot? (145)
14. Do some of those at home seem to think they are better than you? (148)
15. Do you feel that some teachers prefer other students to you? (165)

should tend to form a separate orthogonal dimension. Therefore, factor II is tentatively identified as a lack of rejection factor.

However, since the two factors account for only 25 per cent of the total variance, the total score also contains a considerable amount of specific item variance. This variance is probably associated with differences in the source making the evaluation. Thus, the total score of the PEO indicant may be taken as a crude measure of positive evaluation or lack of rejection by others in general.

8. Summary and conclusions. The Duncan occupational prestige ratings were selected for two reasons. First, they loaded well on a general factor identified as social status. Second, they involved fewer interpolations than the original NORC scores and had a correlation with the NORC scores of $r = + 0.63$, thus indicating a lack of equivalence between the two different ratings.

Factor analysis showed that the components of occupational prestige, parental education, home quality, and religion loaded on a general factor. Thus, the mean of these components is appropriate as an indicant of composite status. However, the loadings were far from unity, indicating that these components are also appropriate for a status consistency indicant.

Composite status (SES $\bar{X}_1$) and status consistency (SC_1) based on local religion ranks were chosen because they discriminated best on a criterion of "community fit."

The Integration-Anxiety indicant (IA $\bar{X}$) has a product-moment correlation of + 0.68 with the California Test of Personality, Total Adjustment Score. From this we concluded that the IA $\bar{X}$ indicant is assessing personality adjustment to a substantial degree.

Finally, factor analysis indicated that all indicants (with the exception of Home Quality) had a general factor. However, each general factor accounted for only a small proportion of the total variance.

Moreover, in two instances (NS and PEO), there was a second factor which met the Kiel-Wrigley criterion.

Thus, we conclude that the IA $\bar{X}$ indicant is probably the best in terms of factorial purity. The other indicants may be taken as crude but possibly adequate measures of a single general dimension. The notable exceptions to this are the NS indicant, which measures lack of psychosomatic complaints and lack of restlessness, and the PEO indicant, which assesses the two related dimensions of positive evaluations and lack of negative evaluations. With the possible exception of IA $\bar{X}$, the composite status indicant is based on the largest general factor, accounting for 30 per cent of the total variance. Because of uniform and moderately high loadings, the IA $\bar{X}$ indicant is comprised of factors which, if they were to be factor analyzed separately, would no doubt account for a moderately high proportion of the total variance.[13]

Indicant Reliability

Reliability refers to the stability of scores when an indicant is repeatedly applied to the same sample. This section considers the problem of estimating the test-retest reliability of our indicants.

1. Techniques. There are three types of reliability coefficients (Technical Recommendations . . . . , 1954). A coefficient of internal consistency is based on an analysis of internal data from a single administration of the test. A coefficient of equivalence is based on the correlation between two forms of a test given at essentially the same time. Finally, a coefficient of stability is based upon a correlation between test and retest with an intervening period of time.

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[13]Factor data is available on one other indicant, the Occupational Aspiration Scale (Miller and Haller, 1964). The OAS has a general factor, accounting for 75 per cent of the total variance among its eight items.

Data are available only for computing coefficients of internal consistency. Therefore, the Kuder-Richardson formula 20 (Gulliksen, 1950, pp. 223-224) was chosen for estimating the reliability of our indicants. This formula assumes that the average covariance among non-parallel items equals the average covariance among parallel items. We shall examine the implications of this assumption below. Moreover, for reasons which will be discussed later, the only mathematically defensible technique for estimating test-retest reliability is to administer the test a second time.

2. Assumptions. Wherry and Gaylord (1943) have examined the concept of test and item reliability in relation to factor pattern. The most relevant of their observations are presented here.

First, Wherry and Gaylord point out that approaches other than the internal consistency method are either less satisfactory or lead to the same general result. Moreover, the Kuder-Richardson formula 20 gives valid estimates only when the number of factors equals one. The formula tends to underestimate the true reliability as the number of factors becomes greater than one.

However, if every item in a test is perfectly reliable, the test is perfectly reliable even though all intercorrelations equal zero. The consistency hypothesis on which the Kuder-Richardson formula is based ignores this possibility. Wherry and Gaylord recommend the application of the Kuder-Richardson formula to sub-tests based on a complete factor analysis.

Consequently, the application of the Kuder-Richardson formula to our indicants will tend to underestimate their true reliability. This is because the indicants only approximate factorial purity, and there is considerable specific item variance. Since we have no data on the reliability of each item, our estimates will be only approximate.

Guttman (1945) has emphasized that at least two trials are necessary to estimate the reliability coefficient, that items cannot replace trials. However, Guttman maintains that a lower bound for the reliability coefficient can be computed from the data of a single trial. Guttman develops several formulas for estimating this bound, but points out that they all assume indefinitely large populations, items which are experimentally independent, and a universe of hypothetical trials which is indefinitely large.

Interestingly, one of the formulas which Guttman develops is algebraically identical to the Kuder-Richardson formula 20. Thus, the application of this formula to our indicants falls short of even estimating the lower bound of the reliability coefficient, since our sample does not meet the assumptions presented by Guttman.

Finally, one may question whether the estimation of even a lower bound for the reliability coefficient by the use of the Kuder-Richardson formula, or for that matter any formula based on a single trial, is mathematically defensible.

Mr. Martin Fox of the Department of Statistics, MSU, takes the position that test-retest reliability can be estimated only from two trials.[14] He feels that computations based on data from a single trial are mathematically indefensible.

Since actual data typically depart from the assumptions for the Kuder-Richardson formula, estimates based on this formula are of dubious value. Nevertheless, in deference to psychometric tradition, we have computed reliability estimates.

3. Procedure. The Kuder-Richardson formula 20, as given by Gulliksen (1950, pp. 223-224), is:

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[14]Personal communication, November 12, 1963.

$$r_{xx} = \left[\frac{k}{k-1} \right] \left[1 - \frac{\sum_{g=1}^{k} S_g^2}{S_x^2} \right]$$

where: r_{xx} = estimated test-retest reliability.

k = number of items.

S_g^2 = variance of item g.

S_x^2 = variance of total score x.

The Kuder-Richardson formula requires the variance of the total score based on the sum of item scores. However, the SES $\bar{X}_1$ and IA $\bar{X}$ indicants provide us with variances of the mean of the item scores. We can compute the total score variances of these indicants from their mean score variances by noting that:[15]

$$S_x^2 = k^2(S_{\bar{x}}^2)$$

where: S_x^2 = the variance of the total score.

k = the number of items.

$S_{\bar{x}}^2$ = the variance of the mean of k item scores.

4. Results. Table 12 presents the reliability coefficients based on our computations and on published information. The only coefficient which is not based on internal consistency methods is the test-retest reliability of the OAS.

5. Discussion. A logical-empirical argument will illustrate the dubious value of the internal consistency coefficients. Consider the reliability estimated for the composite status indicant, SES $\bar{X}_1$. This reliability is given as 0.57, which is a poor reliability.

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[15]This identity is demonstrated in Appendix B.

Table 12. Reliability Estimates for Selected Instruments

Instrument	N	r_{xx}
Computed:[a]		
Home Quality	391	0.35
SES $\bar{X}_1$	340	0.57
SA	391	0.33
IA $\bar{X}$ (16 PF)	340	0.73
PEO (CTP)	391	0.77
Published:		
NS (CTP)[b]	2262	0.82
OAS[c]	85	0.77
CFIQ[d]	--	0.70 - 0.94

[a] From the Kuder-Richardson formula 20 (Gulliksen, 1950, pp. 223-224).

[b] Spearman-Brown formula, from Thorpe, Clark, and Tiegs (1953, p. 5).

[c] Test-retest on equivalent forms with a ten week interval, from Miller and Haller (1964).

[d] Consistency coefficients (N's not reported) based on corrected split-half correlations (Institute for Personality and Ability Testing, 1959, p. 17).

However, consider a hypothetical test-retest of the SES $\bar{X}_1$ indicant in terms of the probable stability of its components. The components are father's occupation, parental educational attainment, physical characteristics of the house, and religion. With the possible exception of house characteristics, a family would not be expected to change its position on the other three components in, for example, a six month period.

Thus, if the SES $\bar{X}_1$ indicant were re-administered to a sample of families at a six month interval, most of the families should obtain

the same scores on the retest as they did on the first test. In this instance, the test-retest reliability coefficient could well approach unity.

Summary and Conclusions

Factor analyses have shown that each instrument tends to be uni-factorial. This is one condition for estimating reliability based on internal consistency analyses. However, these general factors account for only a small portion of the total variance. Thus, each instrument has a considerable amount of specific item variance. Whether these item variances are reliable can only be determined from two administrations of the indicants.

We conclude that our indicants are crude but probably adequate for the aims of this dissertation. Future research should attempt to develop factorially pure indicants with high loadings, and then to estimate reliability on the basis of test-retest procedures. For the present, we have some idea of the weaknesses and the content assessed by our indicants, and therefore a basis for meaningful interpretations of the results.

Analyses for the Articulation Models

This section discusses the techniques used for assessing the problems and hypotheses associated with each of the linear and Nodular models.

Linear Models

1. Functionally coherent domains. The appropriate technique for dealing with the question of functionally coherent domains is factor analysis. Royce (1963, p. 522), in his discussion of "factors as theoretical constructs," writes:

> An important difference between the single variable design and analysis of variance, on the one hand, and factor analysis, on the other, is that factor analysis is concerned with the simultaneous identification of several unknowns. Furthermore, factor analysis per se is not concerned with dependent or independent variables.

Thus, we shall intercorrelate the antecedent and consequent indicants (and other variables) presented earlier by the product-moment method. The resulting correlation matrix will be factor analyzed by the principal axes technique using the highest correlation for each variable as estimates of the communalities (Harman, 1960). The two principal axes factors having the largest eigen values will be rotated orthogonally by means of the Quartimax method (Neuhaus and Wrigley, 1954).

We choose the two largest factors in order to force the partitioning of the matrix variance into two parts. This is done (1) to determine if these two factors are adjustment and achievement in terms of the loadings of consequent system variables, and (2) to determine which of these two factors is more status-relevant by examining the loading pattern of status variables.

Those variables which are most representative of each factor (i.e., those having the highest loadings) will be selected for use in the Amplifier and Nodular models.

2. Bivariate correlation analysis. Zero-order correlations will be computed by the product-moment method, using the .05 level as the cut-off for two-tailed analysis of variance tests of significance (Blalock, 1960, p. 287). The F-test for zero-order correlations (Blalock, 1960, p. 304) is:

$$F_{1, N-2} = \frac{r^2}{1-r^2} (N-2)$$

Zero-order correlations significant at the .01 level will be selected for first-order partial correlation analysis. The general

formula for the first-order partial correlation (Blalock, 1960, p. 334) is:

$$r_{13.2} = \frac{r_{13} - (r_{12})(r_{23})}{\sqrt{1 - r_{12}^2}\sqrt{1 - r_{23}^2}}$$

First-order partials will be evaluated in terms of analysis of variance tests (two-tailed) at the .01 level of significance. The F-test for the first-order partial (Blalock, 1960, p. 356) is:

$$F_{1, N-3} = \frac{r_{13.2}^2}{1 - r_{13.2}^2} (N-3)$$

3. The Amplifier model. The Amplifier model hypothesis will be tested as follows. First, the combinations of composite status and status consistency will be arranged as in Chapter VI:

Composite Status	Status Consistency	Criterion	
		Low (%)	High (%)
High	High	4	1
High	Low	3	2
Low	Low	2	3
Low	High	1	4

The criterion will be dichotomized at the mean into low and high groups, and the numbers and percentages of subjects in each criterion group for each combination of composite status and status consistency will be presented.

If the hypothesized monotonic order is not obtained, the Amplifier model hypothesis will be rejected. If the hypothesized order is obtained, then its statistical significance will be tested by means of the Chi-square test for k independent samples (Siegel, 1956, pp. 174-179).

If the Chi-square test is not significant, then the Amplifier model hypothesis will be rejected. However, if the Chi-square test is

significant, then a test will be made of the non-additive, or interaction, assumption of the amplification process.

We shall test the assumption that the obtained monotonic order is not due to the addition of composite status and status consistency effects by means of a two-way analysis of variance with unequal subclasses (Walker and Lev, 1953, p. 381).

Thus, the test of the Amplifier hypothesis involves three steps. First, the determination of whether the hypothesized monotonic order is obtained. Second, if it is, then a test of the statistical significance of the obtained monotonic order. Third, if the monotonic order is significant, then an analysis of variance test for the assumption of significant interaction. If interaction is significant, then we may conclude that the hypothesis of amplification has been verified.

Therefore, the Amplifier model hypothesis will be accepted if and only if all three of these tests are satisfied.

Nodular Models

1. Status structure model. The first problem in the application of the status structure model is to determine the number of composite status groups, k, on which to compute status consistency medians.

One parameter, N, is given. Because of data attrition, the total sample has been reduced from 441 to approximately 340. We have three other parameters, two of which have to be set before the third is determined. These parameters are reliability (r), sensitivity (s), and the number of status structure groups hypothesized (g).

The formulas relating these parameters to each other and to k were developed in Chapter VI. To recapitulate, these are:

$$N = rs(2g - 1), \text{ and}$$

$$k = s(2g - 1), \text{ therefore}$$

$$N = rk$$

We could arbitrarily set r at some level and immediately determine k. However, this does not allow us to relate k to the other parameters, s and g.

Our approach is to first set g, the number of status structure groups hypothesized. In Chapter VI we hypothesized that the number of groups would range from two to six. Three groups appears to be a convenient compromise, because sociologists have typically viewed stratification systems in terms of three broad classes and because three lies between the extremes of two and six. Therefore, we shall set g = 3.

Next, we may set a reasonable value for sensitivity (s) by noting that our sample is fairly small and that sensitivity and reliability are bought at the cost of each other when N remains constant. Thus, we set s = 2 which means that we shall have, on the average, 2 medians for each status structure group and each boundary if our hypothesis is confirmed. If the observed g turns out to be less than 3, then our average sensitivity will increase. On the other hand, if the observed g is greater than 3, then our average sensitivity will decrease.

We can now determine k and thereby determine r, reliability. If reliability turns out to be unacceptably low, we can attempt to adjust the other parameters. Thus:

$$k = s(2g - 1)$$
$$= 2(5)$$
$$= 10$$

Therefore, we have k = 10. Reliability (r) is now determined by noting:

$$N = rk$$
$$r = N/k$$
$$= 340/10$$
$$= 34$$

Thus, r = 34 which means that we shall have each status consistency median based on approximately 34 subjects.[16] In our judgment this is an adequate value of r, although it approaches the minimum which would be acceptable. But since increasing r, all other parameters held constant, would decrease s, we shall keep the parameters as they are.

The second problem, having plotted the medians for the status structure model, is to evaluate the meaningfulness of the differentiated status structure groups.

Educational and occupational criteria are often used for describing stratification groups. Therefore, we shall use father's occupation, father's education, and mother's education as three criteria for assessing the substantive coherence of the obtained status structure groups.

The composite status groups (k) most representative of each status structure group will be selected for this analysis. The distribution of each of the three criteria across the status structure groups will be evaluated for statistical significance by means of the Chi-square test for k independent samples (Siegel, 1956, pp. 174-179). The substantive coherence between the three criteria distributions will be judged by inspection of the contingency tables.

2. Personality concomitant model. The medians for the consequent system are computed in the same way as the status consistency medians. The indicants selected for the concomitant model are determined on the basis of the results of the functionally coherent domains analysis.

Thus, the application of the concomitant model consists essentially in mapping the consequent medians onto the status structure model

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[16]The medians for the Nodular models are computed by the method given by Blalock (1960, p. 56).

such that the medians are coordinated vertically with the medians of the antecedent system. Since both Nodular models are based on the same composite status groups, this presents no difficulty.

Finally, it should be noted that the reliability of the personality concomitant model will also be r = 34. However, the sensitivity (s) of the consequent nodular structure will depend upon the number of modulations or nodes in the consequent medians. To the extent that the consequent mappings are isomorphic with the status structure, the sensitivity of the personality concomitant model will equal the sensitivity of the status structure model.

Summary and Conclusions

This chapter has described the sample and the basic data, the construction and evaluation of selected indicants, and the specific procedures for applying linear and Nodular models to the sample and data.

Three assumptions concerning the sample were made. First, the sample is assumed to be representative of the stratification system in Lenawee County. Second, the sample is assumed to be adequate for comparing linear and Nodular models. Finally, where substantive hypotheses are involved, the sample is assumed to be representative of similar samples which might be drawn in the United States.

The construction of two indicants for the antecedent system was described. These are measures of composite status and status consistency. The four components of these measures are father's occupational prestige, parental educational attainment, physical characteristics of the home, and religion.

Six indicants in the consequent system were presented. These are integration versus anxiety (IA $\overline{X}$), status anxiety (SA), lack of

nervous symptoms (NS), perceived-evaluation-by-others (PEO), occupational aspirations (OAS), and educational aspirations (EA).

In addition, indicants for control (CFIQ) and for marker variables were discussed. These are intended for analyses associated with functionally coherent domains and bivariate correlation analyses.

The instruments were evaluated in terms of factor, criterion, and reliability analyses. The instruments appeared to be crude but generally adequate measures of meaningful concepts. Indicants of composite status (SES $\overline{X}_1$) and status consistency (SC_1) based on local religion ranks were chosen for their ability to discriminate on a criterion of "community fit." The dubious value of reliability estimates based on analysis of internal consistency data was discussed.

Finally, the analyses for the linear and Nodular articulation models were specified. The outcome of the analysis of functionally coherent domains is the basis for selecting consequent variables for the Amplifier and Nodular models.

The following two chapters present the results of analyzing the linear and Nodular models. Chapter VIII presents the results for the linear models, while Chapter IX presents the results for the Nodular models. Chapter X summarizes the dissertation, evaluates the linear and Nodular models, discusses the limitations of the study, and indicates tasks for future research.

CHAPTER VIII

RESULTS I: LINEAR MODELS

This chapter examines the results of applying the linear models--functionally coherent domains, bivariate correlation analyses, and the Amplifier model. Hypotheses associated with each model, which were presented in Chapter VI, are restated and tested, the results are examined, and the models are compared and evaluated.

Functionally Coherent Domains

Given a sample of adjustment, achievement, and status variables, two hypotheses are presented.

1. Adjustment and achievement variables constitute two distinct functionally coherent domains of personality.

2. The achievement domain is more status-relevant than the adjustment domain.

Results

Table 13 presents the rotated factor loadings, principal axes loadings, and communalities (h^2) for 33 experimentally independent variables. Two factors, accounting for 21 per cent of the total matrix variance, were rotated orthogonally by means of the Quartimax method (Neuhaus and Wrigley, 1954).

Variables 1 through 15 (which have their highest loadings on rotated factor I) have been ordered in decreasing magnitude by their loadings on factor I. Variables 16 through 33 have their highest loadings on rotated factor II. These are ordered in increasing magnitude

Table 13. Factor Matrices and Communalities for 33 Experimentally Independent Variables (N = 339)[a]

Variables		Quartimax I	Quartimax II	Principal Axes I	Principal Axes II	h^2
1	Q_4^*: Lack of Nervous Tension	70	00	-53	46	50
2	PEO	68	25	-35	64	52
3	NS (lack of)	63	00	-48	41	40
4	Q_3: Will Control	62	00	-47	41	38
5	O*: Lack of Anxious Insecurity	58	03	-42	41	34
6	C : Emotional Stability	55	03	-40	39	31
7	H : Adventurous Autonomic Resilience	46	26	-18	50	29
8	SA	-32	-14	15	-32	12
9	Paranoid Schizothymia	-30	-02	21	-21	09
10	"Fit with Community"	28	13	-13	28	10
11	I : Emotional Sensitivity	-25	-05	16	-21	07
12	G : Super-Ego Strength	25	23	-04	34	12
13	F : Surgency	-21	16	26	-02	07
14	M: Bohemianism	-20	-02	14	-14	04
15	Q_1: Radicalism	-17	16	24	01	06
16	IA Crystallization[b]	00	-06	-04	-04	00
17	Q_2: Self-Sufficiency	-08	13	14	04	02
18	A : Cyclothymia	-08	16	17	06	03
19	E : Dominance	-04	17	14	10	03
20	SC_1	11	19	04	21	05
21	N : Sophistication	06	27	13	25	08
22	PDO	-03	27	20	19	08
23	Home Quality	12	34	13	33	13
24	B : General Intelligence	14	39	15	39	17
25	Religion (Societal)	04	47	28	38	22
26	Occupation (Duncan)	-08	49	38	32	25
27	Parental Education	09	52	27	46	28
28	Religion (Local)	02	53	33	41	29
29	GPA	29	54	13	60	37
30	CFIQ	12	54	26	49	30
31	PDE	14	59	28	54	36
32	OAS	17	67	31	62	47
33	EA	15	71	35	64	53
Per cent Total Variance:		10	11			

[a] Decimals omitted. All loadings positive unless indicated.
[b] This indicant was not used in subsequent analyses (see footnote number 1).

by their loadings on factor II. These orderings were done to facilitate interpretation.

The first eight variables having high to moderate loadings on factor I are the variables comprising the four adjustment indicants. Thus, Integration versus Anxiety (IA $\overline{X}$) is represented by its five components, primary factors Q_4^*, O*, C, H, and Q_3. Variable Q_4^* has its highest loading on factor I, followed by Perceived Evaluation-by-Others (PEO), Lack of Nervous Symptoms (NS), the other four components of IA $\overline{X}$ (Q_3, O*, C, and H), and finally Status Anxiety (SA) which has a negative loading. Factor I accounts for 10 per cent of the total matrix variance.

Other variables which have loadings greater than .20 on factor I are Paranoid Schizothymia (-30), "fit with the community" (+28), Emotional Sensitivity (-25), Super-Ego Strength (+25), Surgency (-21), and Grade Point Average (+29). All of these, with the exception of GPA, are interpretable as facets of personality adjustment. GPA is more clearly related to achievement. However, the potential contribution of personality adjustment to grade point average is reasonable.

Thus, the pattern of loadings on factor I clearly indicate that factor I may be interpreted as a personality adjustment factor. Consequently, we have demonstrated the existence of a functionally coherent domain for adjustment.

Factor II accounts for 11 per cent of the total matrix variance. The five variables having the largest loadings on factor II are Educational Aspirations (EA), occupational aspirations (OAS), parental desire for the subject's educational achievement (PDE), intelligence (CFIQ), and Grade Point Average (GPA). EA and OAS, the two variables with the largest loadings on factor II, are the two indicants for achievement presented in Chapter VII.

Other consequent system variables which have loadings greater than .20 on factor II are: Perceived Evaluation-by-Others (PEO, +25), Adventurous Autonomic Resilience (+26), Super-Ego Strength (+23), Sophistication (+27), parental desire for the subject's occupational achievement (PDO, +27), and General Intelligence (+39). All of these variables bear either an explicit or implicit functional relationship to achievement.

We conclude that the pattern of loadings of consequent system variables clearly warrants labeling factor II an achievement factor. Thus, we have demonstrated the existence of a functionally coherent domain for achievement. This, together with the demonstration of an adjustment domain, tends to confirm hypothesis 1.

Hypothesis 2 states that the achievement domain will be more status-relevant than the adjustment domain. We can test this hypothesis by examining the loading patterns for the status variables.

All of the five status variables have their highest loadings on factor II, achievement. These variables and their loadings on factor II are number 23, Home Quality (+34), and numbers 25 through 28, Societal Religion (+47), Father's Occupation (+49), Parental Education (+52), and Local Religion (+53). These are all moderately substantial loadings. Moreover, four of these (excepting societal religion) were used as the components for our composite status measure (SES $\overline{X}_1$).

On the other hand, the loadings of these status variables on factor I are negligible, ranging from -08 for Occupation to +12 for Home Quality. Thus, achievement (factor II), but not adjustment (factor I), is status-relevant. Therefore, we conclude that hypothesis 2 is confirmed.

Discussion and Conclusions

The pattern of communalities (h^2) in Table 13 should be noted. Moderately high communalities occur for the variables at the extremes of the variable order. These extremes correspond to those variables representing adjustment and achievement dimensions. Low communalities occur in the mid-region of the variable order. Corresponding variables are assessing substantial unique variance which is not shared with any other variable.[1]

Only 21 per cent of the total matrix variance has been accounted for in terms of adjustment and status-achievement factors. Thus, there is substantial personality variance which is independent of either adjustment or status-achievement. However, these two factors are orthogonal and this implies that achievement attributes and adjustment attributes are relatively independent.

Factor analysis provides us with a broad picture of functionally coherent domains. However, correlation analysis provides a more detailed estimate of specific covariations between status and personality variables. Moreover, factor analysis is sensitive to differences in the sampling of subjects and variables. Thus, the demonstration of a status-relevant achievement domain should not be construed as exhausting other possible status-relevant domains.

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[1]Variable number 16 has a communality of zero. This variable is a measure of the crystallization of the five components of the IA $\overline{X}$ indicant (Q_4*, O*, C, H, and Q_3), and it was computed in the same way as status crystallization (see Chapter VII). It was developed out of curiousity, and does not represent any systematic theory insofar as we know. Its empirical usefulness is highly dubious as determined by factor and correlation analyses. For example, it has only two significant zero-order correlations and these are extremely small. These correlations are +0.14 (.01 level) with Dominance and -0.13 (.05 level) with GPA. Thus, it is not presented with any of the subsequent analyses.

In conclusion, the results of this factor analysis allow us to reduce the number of consequent indicants for consideration in the Amplifier and Nodular models. Specifically, we shall consider only those having the highest loadings on factors I and II. For adjustment, these are IA $\bar{X}$ (based on the loadings of its five components), PEO, NS, and SA. For achievement, we select the OAS. Its loading on factor II is essentially the same as EA, and we know more about the reliability and variance characteristics of the OAS than we do of EA (Haller and Miller, 1963). EA has less variance and is a cruder indicant than the OAS, and its reliability is unknown.

In general, the IA $\bar{X}$ indicant appears to be the best single measure of factor I, while the OAS is the best single measure of factor II. We shall use the IA $\bar{X}$ and OAS indicants for the Amplifier model. However, we shall use the OAS and all four of the adjustment indicants (IA $\bar{X}$, PEO, NS, and SA) for the personality concomitant model. This decision is based on the fact that while the four adjustment indicants tend to be monotonically equivalent, their mappings on the status structure model may be non-monotonically different.

Bivariate Correlation Models

This section examines the two bivariate correlation models, zero-order correlations and first-order partial correlations.

Zero-Order Correlations

Three hypotheses were made for zero-order correlation analysis:

1. The zero-order correlations of composite status with variables in both domains are on the average larger than the zero-order correlations of status consistency with variables in both domains.

2. Composite status is primarily correlated with achievement variables.

3. Status consistency is primarily correlated with adjustment variables, particularly with indicants of nervous symptoms and lowered evaluation of the self.

1. Results. Table 14 presents the zero-order correlates of composite status (SES $\bar{X}_1$) and status consistency (SC_1) at the .05 and .01 levels of significance.

Composite status has three significant correlations with indicants in the adjustment domain. These are IA $\bar{X}$ (+ 0.13 at the .05 level), PEO (+0.18 at the .01 level), and SA (-0.27 at the .01 level). Status consistency has two significant adjustment correlates, PEO (+0.12 at the .05 level) and SA (-0.14 at the .01 level).

Composite status has six correlates in the achievement domain, all of which are significant at the .01 level. These are General Intelligence (+0.16), GPA (+0.24), CFIQ (+0.30), PDE (+0.40), OAS (+0.34), and EA (+0.39). On the other hand, status consistency has no significant correlates with achievement indicants.

Other variables correlated with composite status are Radicalism (+0.14 at the .01 level), Cyclothymia (+0.11 at the .05 level), Dominance (+0.11 at the .05 level), and Sophistication (+0.27 at the .01 level). There are two other variables correlated with status consistency. These are Emotional Sensitivity (-0.12 at the .05 level) and Sophistication (+0.19 at the .01 level).

In the adjustment domain, the correlations of composite status are larger than the correlations of status consistency. The same holds for the achievement domain. Thus, hypothesis 1 is confirmed.

The correlations of composite status with achievement variables are larger than its correlations with adjustment variables (excepting General Intelligence and GPA). Thus, hypothesis 2 tends to be confirmed.

Table 14. Zero-Order Correlations (r_0) of Composite Status (SES $\bar{X}_1$) and Status Consistency (SC_1) with 21 Experimentally Independent Variables (N = 340)[a]

Variables		r_0 and Significance[b]			
		SES $\bar{X}_1$	p	SC_1	p
1	IA $\bar{X}$	13	.05	09	---
2	PEO	18	.01	12	.05
3	NS (lack of)	04	---	09	---
4	SA	-27	.01	-14	.01
5	L: Paranoid Schizothymia	-09	---	-07	---
6	I : Emotional Sensitivity	-10	---	-12	.05
7	G: Super-Ego Strength	05	---	-04	---
8	F: Surgency	00	---	06	---
9	M: Bohemianism	06	---	-03	---
10	Q_1: Radicalism	14	.01	04	---
11	Q_2: Self-Sufficiency	03	---	02	---
12	A: Cyclothymia	11	.05	-03	---
13	E: Dominance	11	.05	-02	---
14	N: Sophistication	27	.01	19	.01
15	PDO	04	---	-03	---
16	B: General Intelligence	16	.01	00	---
17	GPA	24	.01	04	---
18	CFIQ	30	.01	07	---
19	PDE	40	.01	07	---
20	OAS	34	.01	10	---
21	EA	39	.01	09	---

[a] Decimals omitted. All correlations are positive unless indicated.
[b] For $p \leq .05$, $F \geq 3.84$, $|r_0| \geq 0.11$. For $p \leq .01$, $F \geq 6.64$, $|r_0| \geq 0.14$. See Blalock (1960, pp. 304, 453 ff.).

Status consistency has no significant correlations with achievement variables but it has two significant correlations with adjustment variables. Thus, the first part of hypothesis 3 is confirmed.

The two significant correlations with adjustment variables are +0.12 with Perceived Evaluation-by-Others (.05 level) and -0.14 with Status Anxiety (.01 level). Status consistency fails to correlate significantly with lack of Nervous Symptoms. Thus, the second part of hypothesis 3 receives mixed support.

2. Discussion and conclusions. In all, composite status has 13 significant correlations while status consistency has only 4 significant correlations. Therefore, hypothesis 1 might be reformulated to include general personality variables and to state that composite status has more "relational fertility" than status consistency.[2]

The poor showing of status consistency contrasts with the empirical and theoretical claims made by Lenski (1954, 1956b) regarding political liberalism, social withdrawal, and disturbing experiences, and by Jackson (1962) regarding frustration, uncertainty, and psychophysiological symptoms of stress. The highest correlation for status consistency in Table 14 is with Sophistication (+0.19).

We conclude that status consistency has dubious value as an antecedent variable in zero-order correlation studies of personality. It correlates with only two of four adjustment variables, and these correlations are very small (+0.12 for PEO and -0.14 for SA). Moreover, as predicted, it fails to correlate with achievement variables. Thus, the utility of status consistency in linear correlation models seems quite limited.

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[2]The term "relational fertility" has been used by McClelland (1958, pp. 20-22) to refer to the degree to which an indicant is empirically related to other theoretically-relevant variables. The idea is that the greater the "relational fertility," the easier the task of assigning systematic meaning to a construct. Linguistic aspects of this kind of "validation" have been discussed by Brown (1958, p. 353).

Finally, status consistency has a zero-order correlation of +0.29 with composite status. Thus, some of the covariation between status consistency and personality variables is due to the common association of both to composite status. Table 14 does not indicate any personality variable for which status consistency makes a distinctive contribution. Therefore, linear correlation models do not reveal the functional importance of status consistency for personality, if such functional importance exists.

In short, linear correlation models of the zero-order variety tend to make adjustment variables slightly status-relevant, achievement variables moderately status-relevant, and status consistency irrelevant. The next problem is to determine whether the control of intelligence sharpens this view.

First-Order Partial Correlations

There are three hypotheses associated with first-order partial correlation analysis:

1. If composite status is correlated with intelligence, then the control of intelligence will cause the covariation between composite status and adjustment to vanish while the covariation between composite status and achievement will show a significant residual.
2. If status consistency is correlated with intelligence, then the control of intelligence will cause the covariation between status consistency and achievement to vanish while the covariation between status consistency and adjustment will show a significant residual.
3. Thus, first-order partial correlation analysis will enhance the findings of zero-order correlation analysis. That is, it will support the hypothesis that composite status is primarily associated with achievement while status consistency is primarily associated with adjustment.

1. Preliminary analysis. All three variables in a first-order partial should have significant intercorrelations to avoid capitalizing

on chance covariance. We shall set the .01 level as the criterion for selecting variables for partial correlation analysis.

Composite status (SES $\overline{X}_1$) has a correlation of +0.296 (.01 level) with intelligence (CFIQ). However, status consistency does not meet the .01 level criterion, for it has a correlation of only +0.066 with intelligence. Therefore, status consistency will not be used.[3]

There are two adjustment indicants which have correlations with SES $\overline{X}_1$ significant at the .01 level. These are Perceived Evaluations-by-Others (PEO) and Status Anxiety (SA). But SA does not have a significant correlation with intelligence at the .01 level. Thus, SA is eliminated.

Q_1, Radicalism, and N, Sophistication, both have correlations with SES $\overline{X}_1$ significant at the .01 level. However, neither of these has a correlation with intelligence that meets the .01 criterion.

Table 15. Zero-Order Correlations (r_0), Means, and Standard Deviations (SD) for Consequent Variables having a Significant Correlation with Composite Status (SES $\overline{X}_1$) and Intelligence (CFIQ), N = 340

Variables	Correlations[a]		Mean[b]	SD
	SES $\overline{X}_1$	CFIQ		
CFIQ	296	---	50.72	9.96
PEO	182	214	50.66	9.39
OAS	336	438	51.10	9.67
EA	389	409	51.46	8.22

[a]Decimals omitted. All correlations positive and significant at the .01 level.

[b]The T-Scores for the OAS and EA indicants were computed from a sample of 438. Thus, data attrition was slightly biased toward those having low OAS and EA T-Scores.

[3]Consequently, hypothesis 2 and part of hypothesis 3 become irrelevant.

Finally, both of the achievement indicants--occupational aspirations (OAS) and educational aspirations (EA)--have correlations with SES $\bar{X}_1$ which meet the criterion. Also, both the OAS and EA indicants have correlations with intelligence which meet the criterion. Thus, both EA and OAS are included in partial correlation analysis.

In sum, only three indicants have correlations sufficiently large to include them in a partial correlation analysis. These are PEO, OAS, and EA. These variables and their correlations with SES $\bar{X}_1$ and CFIQ are presented in Table 15. Table 15 contains the basic data for computing the first-order partial correlations with intelligence as a control.

2. Results. Table 16 presents the partial correlations for Perceived Evaluation-by-Others (PEO), occupational aspirations (OAS), and educational aspirations (EA), with significance levels for the partials.

Table 16. The Effects of Controlling Intelligence: Zero-Order Correlations (r_0), First-Order Partial Correlations (r_1), and Significance Levels for the Partials (F and p), N = 340[a]

	Correlation with SES $\bar{X}_1$		Significance for r_1[b]	
Variables	r_0	r_1	F	p
PEO	182	128	5.63	$p > .01$
OAS	336	240	20.59	$p < .01$
EA	389	308	35.32	$p < .01$

[a]Decimals omitted. All correlations are positive.

[b]$F \geq 6.64$ for $p \leq .01$, Blalock (1960, pp. 356 and 453).

For PEO, the zero-order correlation of +0.182 with SES $\bar{X}_1$ is reduced to a partial correlation of +0.128 which fails to meet the .01 level criterion. Thus, the control of intelligence causes the covariation between adjustment (PEO) and composite status (SES $\bar{X}_1$) to vanish.

However, the control of intelligence for both of the achievement indicants (OAS and EA) results in a significant residual correlation between them and composite status (+0.240 and +0.308 respectively).

Thus, for the indicants tested, hypothesis 1 is confirmed. The portion of hypothesis 3 which is relevant is also confirmed, in that composite status is primarily associated with achievement rather than adjustment.

3. Discussion and conclusions. Composite status, but not status consistency, is relavant for the control of intelligence. Therefore, the significant zero-order correlations between status consistency and personality may be interpreted as free of the influence of intellective factors.

Perceived Evaluation-by-Others (PEO) is the only adjustment indicant having a significant correlation with intelligence. Thus, the significant correlations between composite status and the other adjustment indicants (Integration versus Anxiety and Status Anxiety) cannot be accounted for in terms of the influence of intellective factors. However, partial correlation analysis indicated that the zero-order correlation between composite status and PEO is spurious, due to intelligence.

Finally, both occupational aspirations (OAS) and educational aspirations (EA) have significant correlations with intelligence. However, the control of intelligence leaves a significant covariation residual between both the OAS and EA indicants and composite status.

Thus, composite status makes an intellectively independent and significant contribution to achievement orientations and to two adjustment indicants, Status Anxiety (.01 level) and Integration (.05 level).

Summary and Conclusions

Zero-order correlation analysis indicates that status consistency has low "relational fertility." Moreover, it has only two correlations significant at the .01 level. These are -0.14 with Status Anxiety and +0.19 with Sophistication, both of which are free of intellective factors. The correlation with Status Anxiety, but not with Sophistication, is congruent with past theory and research.

In general, status consistency fails to correlate with variables suggested by the literature. Thus, linear bivariate correlation models fail to demonstrate the functional importance of status consistency for personality, if such functional importance exists.

The results of both zero-order and first-order partial correlation analyses may be summarized for composite status. Because of the number of correlation studies, this summary takes the .01 level as the criterion.

Composite status has only one significant correlation with adjustment indicants which is interpretable as independent of intelligence. This is a correlation of -0.27 with Status Anxiety. Composite status is correlated independently of intelligence with both achievement indicants. These are +0.24 for occupational aspirations (OAS) and +0.31 for educational aspirations (EA).

In conclusion, linear bivariate correlation models tend to show status consistency as irrelevant for both domains of personality. On the other hand, these models tend to indicate that composite status is

relevant mainly for the achievement domain. Even this, however, should be tempered by the observation that significant intelligence-free covariance between composite status and personality is extremely small.

The Amplifier Model

The Amplifier model is applied to Integration versus Anxiety (IA $\bar{X}$) for the adjustment domain, and to occupational aspiration (OAS) for the achievement domain. There are four hypotheses for the Amplifier model:

1. The correlation between composite status and status consistency is either zero or low.
2. Status consistency amplifies the effects of composite status such that the combined effect on both domains of personality is a monotonic order as follows: A > B > C > D

SES $\bar{X}_1$	SC_1	Domain
High	High	A
High	Low	B
Low	Low	C
Low	High	D

3. Amplification is due to a significant interaction between SES $\bar{X}_1$ and SC_1 which is independent of any possible additive effect.
4. The monotonic order is more pronounced for the achievement domain than for the adjustment domain.

The zero-order product-moment correlation between composite status (SES $\bar{X}_1$) and status consistency (SC_1) is +0.29, which is significant at the .01 level. This means that approximately 9 per cent of the variance in status consistency is accounted for by the variance in composite status. Moreover, this correlation is in a direction which tends to bias the Amplifier model toward the upper portion of the hypothesized monotonic order, and against the lowest portion of the monotonic order.

Thus, composite status and status consistency are substantially but not perfectly independent and hypothesis 1 is accepted.

Integration versus Anxiety

1. Results. Table 17 shows the number and percentage of subjects having low and high Integration scores for each of the four combinations of composite status and status consistency.

The hypothesized monotonic order is not obtained for Integration versus Anxiety. The bottom (fourth) category of composite status and status consistency was hypothesized to produce the lowest degree of Integration. However, as Table 17 indicates, the third category has the greatest proportion of low Integration, or high Anxiety, scores.

Thus, hypothesis 2 is rejected and hypotheses 3 and 4 become irrelevant according to our procedure.

Table 17. The Amplifier Model: Integration versus Anxiety as the Criterion (N = 340)[a]

SES $\bar{X}_1$	SC_1	Integration-Anxiety		N
		Low (28-50)	High (51-68)	
High	High	53 (47%)	60 (53%)	113 (100%)
High	Low	30 (50%)	30 (50%)	60 (100%)
Low	Low	57 (56%)	45 (44%)	102 (100%)
Low	High	35 (54%)	30 (46%)	65 (100%)
Totals:		175 (52%)	165 (48%)	340 (100%)

[a]The categories for Integration versus Anxiety fall below and above the mean. SES $\bar{X}_1$ and SC_1 were categorized in the same way:

SES $\bar{X}_1$: Low = 30-50, High = 51-69

SC_1: Low = 45-65, High = 66-78

2. Discussion and conclusions. The results seem to indicate that the correlation between composite status and status consistency, and not the hypothesized amplification effect, accounts for the findings. Thus, the low composite status category with high status consistency is essentially higher in status than is the low composite status category with low status consistency. Therefore, the obtained order is due to the effects of composite status and status consistency is redundent.

We conclude that the Amplifier model hypothesis fails to hold for the adjustment domain. This conclusion is congruent with the conclusion of bivariate correlation analysis--status consistency is irrelevant for the adjustment domain when linear models are used.

Occupational Aspiration

1. Results. Table 18 presents the results of applying the Amplifier model to occupational aspiration.

The hypothesized monotonic order is not obtained for occupational aspiration. The obtained order is identical to the order obtained for Integration versus Anxiety. That is, it was hypothesized that the bottom (fourth) combination of composite status and status consistency would generate the highest proportion of low occupational aspiration scores. As Table 18 shows, however, the third combination of Low: Low has the greatest proportion of low OAS scores.

Therefore, hypothesis 2 is rejected and hypotheses 3 and 4 become irrelevant according to our procedure.

2. Discussion and conclusions. The interpretation offered for the results obtained with Integration versus Anxiety appears equally appropriate here. The obtained order for occupational aspiration may be accounted for in terms of the correlation between composite status and status consistency. Thus, status consistency is also redundent for the achievement domain.

Table 18. The Amplifier Model: Level of Occupational Aspiration (OAS) as the Criterion (N = 340)[a]

SES $\bar{X}_1$	SC_1	Occupational Aspiration		N
		Low (20-51)	High (52-80)	
High	High	46 (41%)	67 (59%)	113 (100%)
High	Low	25 (42%)	35 (58%)	60 (100%)
Low	Low	62 (61%)	40 (39%)	102 (100%)
Low	High	35 (54%)	30 (46%)	65 (100%)
Totals:		168 (49%)	172 (51%)	340 (100%)

[a]The categories for occupational aspiration fall below and above the mean. See footnote a in Table 17 for the score ranges for the SES $\bar{X}_1$ and SC_1 categories.

In conclusion, the Amplifier model hypothesis is rejected for the achievement domain. Apparently, status consistency does not amplify the effects of composite status for either adjustment or achievement indicants.

Summary and Conclusions

The Amplifier model hypothesis was rejected for both the adjustment (IA $\bar{X}$) and the achievement (OAS) domains. In both instances the obtained order is probably due to the positive correlation (+0.29) between composite status and status consistency. Thus, the obtained order is interpretable as due to the effect of composite status, and status consistency becomes redundent.

In conclusion, the results for the Amplifier model provide no support for the idea that status consistency has functional importance for the adjustment and achievement domains that cannot be accounted for in terms of composite status.

Summary and Conclusions

The analysis of functionally coherent domains produced two orthogonal factors accounting for 21 per cent of the total variance from the intercorrelation of 33 experimentally independent variables. These two factors were clearly interpretable as achievement and adjustment domains. An examination of the loadings of five status variables indicated that the achievement domain is more status-relevant than the adjustment domain. The Integration versus Anxiety indicant was judged to be the best single measure of the adjustment domain. The Occupational Aspiration Scale was selected as the most effective indicant for the achievement domain.

Bivariate correlation analyses showed that status consistency has low "relational fertility." Only two zero-order correlations were significant at the .01 level. These were between status consistency and Status Anxiety (-0.14) and Sophistication (+0.19). Both of these correlations are intelligence-free since status consistency fails to correlate significantly with intelligence. In general, status consistency fails to correlate with the personality variables taken to be important by past theory and research.

Composite status has one intelligence-free zero-order correlation with an adjustment indicant which is significant at the .01 level. This is a correlation of -0.27 with Status Anxiety. Composite status has two intelligence-free first-order partial correlations with achievement indicants which are significant at the .01 level. These are +0.24 for occupational aspirations and +0.31 for educational aspirations.

Thus, bivariate correlation analysis shows that composite status is relevant mainly for the achievement domain, and that status consistency tends to be irrelevant for both domains.

The Amplifier model hypothesis failed to hold for both the adjustment domain and the achievement domain. These findings suggest that status consistency makes no functional contribution to either domain which cannot be accounted for in terms of the effects of composite status.

The analysis of functionally coherent domains provided a basis for data reduction and construct clarification. The bivariate correlation models provided more detailed information on specific status-personality articulations and indicated which covariations were free of intellective mediations. The Amplifier model failed to generate any new information not given by either the analysis of functionally coherent domains or bivariate correlation analyses.

None of the linear models indicated the functional importance of status consistency for the two domains, with the possible exception of bivariate correlation analysis. In short, composite status appears to have more "relational fertility" and to meet theoretical expectations more completely than status consistency when linear models are used.

The next chapter examines the Nodular models and compares the conclusions generated by them with the conclusions reached in this chapter for the linear models.

CHAPTER IX

RESULTS II: NODULAR MODELS

This chapter examines the results obtained from the application of two Nodular models--the status structure model and the personality concomitant model. The hypotheses for each model, presented in Chapter VI, are restated and tested, the results are interpreted, and the Nodular models are evaluated and compared with the linear models of the previous chapter.

The Status Structure Model

There are three hypotheses to be tested for an evaluation of the status structure model:

1. The application of the status structure model will result in a heterogeneous status structure. That is, the status structure model will not reduce to a status continuum model.

2. The number of status groups contained in the heterogeneous status structure will range from two to six groups. (A more specific hypothesis, developed in estimating the parameters for this model in Chapter VII, is that the number of status structure groups (g) will equal three).

3. Each status structure group will be substantively coherent in that it may be named such that all the groups are sociologically meaningful. Specifically, the educational and occupational composition of each group will be such as to indicate internal congruence and external differentiation along lines which are systematically meaningful.

Results

Table 19 presents the status consistency median for each of the ten composite status groups, and the range of composite status (SES $\bar{X}_1$) scores for each group. These medians are plotted and the resulting curve is presented in Figure 8.[1]

Table 19. Status Consistency (SC_1) Medians for Ten Composite Status Groups (SES $\bar{X}_1$)

Group and SES $\bar{X}_1$ Range		Status Consistency (SC_1) Median	$N_{(r)}$[a]
(01)	30 - 41	63.0	38
(02)	42 - 45	64.0	34
(03)	46 - 47	63.8	41
(04)	48 - 49	63.5	30
(05)	50 - 51	66.8	42
(06)	52 - 53	68.6	35
(07)	54 - 55	66.2	41
(08)	56 - 57	66.8	27
(09)	58 - 59	69.2	33
(10)	61 - 69	69.0	24
Range and Total:		63.0 - 69.2	345

[a]The range for each composite status group was set so as to approximate as closely as possible the reliability (r) parameter determined in Chapter VII. The totals for the groups are unequal. However, the average reliability for the medians is r = 34.5.

As Figure 8 indicates, the resulting curve has several modulations. Thus, the obtained status structure is heterogeneous, and hypothesis 1 is confirmed.

[1]The semi-interquartile range for each median is presented in Appendix A for all of the Nodular models.

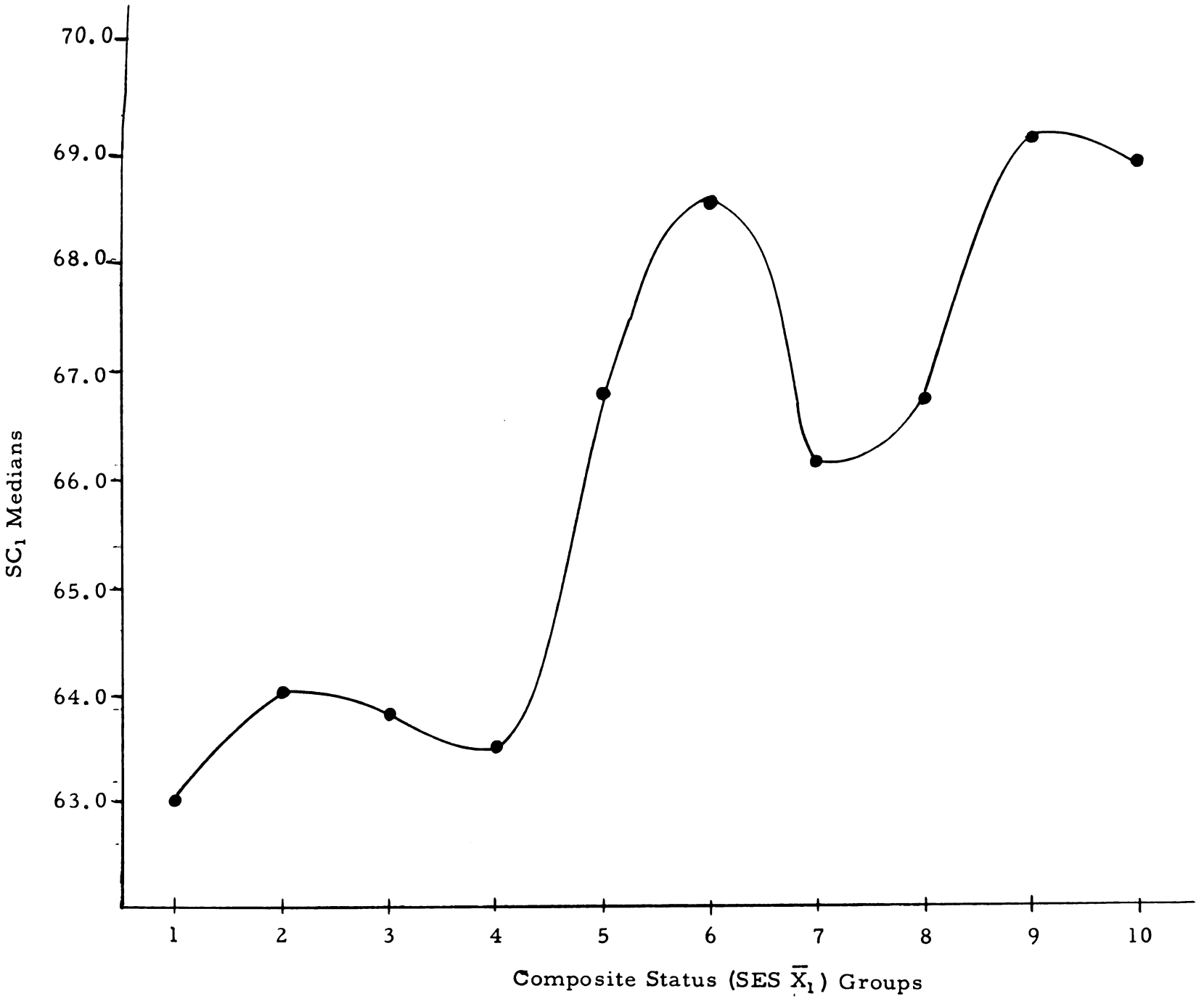

Figure 8. The Nodular Structure for the Status Structure Model.

The status consistency medians have three nodes at which they are relatively maximum. These occur for composite status groups 2 and 3, 6, and 9 and 10. There are three nodes at which status consistency is relatively minimum. These correspond to composite status groups 1, 4, and 7 and 8. However, only two of these are interpretable as boundaries between status structure groups.

Thus, there are three status structure groups corresponding to the maximum nodes of status consistency, and two boundaries corresponding to the two intervening minimum nodes of status consistency. Therefore, hypothesis 2 is verified and g = 3.[2]

Evaluation

We have obtained a heterogeneous status structure, and three maximum status consistency nodes are assumed to represent status structure groups. However, additional analysis is needed to determine whether these nodes are capable of ordering ideas about stratification. Indeed, the obtained nodular structure may be capricious and have no systematic significance for stratification.

In order to determine what, if any, systematic internal congruence and external differentiation characterizes these groups, we shall examine the modal composition of each of the three groups in terms of educational and occupational criteria.

Two of the components of the composite status indicant (SES $\bar{X}_1$) were chosen for analysis because of their utility in stratification analysis. These are the father's occupation and the parent's educational attainment. Parent's educational attainment was further

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[2]Since g = 3, sensitivity (s) equals 2 medians for each boundary and each status structure group. Thus, all of the provisional parameters (set in Chapter VII) hold for the obtained status structure.

broken down into father's educational attainment and mother's educational attainment.

We know, of course, from the construction of the SES $\overline{X}_1$ indicant that these three status structure groups will differ on the three criteria. Moreover, since the composite status groups selected to represent each status structure group consist of individuals who are relatively high in status consistency, we may expect that each of the three criteria will show agreement in the degree to which they differentiate each status structure group. The problem is the content of the internal congruences, whether they "go together," and the meaning of the pattern of external differentiation.

For the purpose of identification in the following analyses, and in order to avoid the social "class" issue at this point, the three status structure groups will be called groups I, II, and III. Group I consists of composite status groups 2 and 3 and is the lowest in composite status. Group II consists of composite status group 6 and is intermediate in composite status. Finally, group III consists of composite status groups 9 and 10 and is highest in composite status.

1. Father's education. Table 20 shows the distribution of the father's educational attainment for each of the three groups. The pattern is sufficiently sharp to choose one cell for each of the three groups in describing their characteristics. Thus, in group I, 53 per cent of the fathers have an eighth grade education or less. In group II, 49 per cent of the fathers have completed high school. In group III, 63 per cent of the fathers have some college or a college degree.

In summary, Table 20 shows that group I tends to be a grade school group, group II tends to be a high school group, and group III is predominately a college group in terms of the educational attainment of the subject's father.

Table 20. Composition of the Three Status Structure Groups by Father's Educational Attainment

Father's Education	Status Structure Groups[a] I (2 & 3)	II (6)	III (9 & 10)	N
8th Grade or less	40 (53%)	6 (17%)	4 (07%)	50
9-11 Grades	15 (20%)	7 (20%)	4 (07%)	26
12 Grades	15 (20%)	17 (49%)	13 (23%)	45
College or Degree	5 (07%)	5 (14%)	36 (63%)	46
Totals:	75 (100%)	35 (100%)	57 (100%)	167

$\chi^2 = 77.80$, df = 6, $p < .001$ (Siegel, 1956, pp. 174-179).

[a]The numbers in parentheses refer to the composite status groups selected as representative of each status structure group.

2. Mother's education. The distribution of the mother's educational attainment is shown in Table 21. In general, mother's educational attainment tends to be slightly higher than the father's educational attainment for all three groups. However, the pattern tends to be quite similar to the father's educational attainment.

Thus, 60 per cent of the mothers in group I have completed eleven grades or less. In group II, 43 per cent have completed high school. Finally, in group III, 60 per cent of the mothers have some college or a college degree.

We conclude that group I is a grade school and high school group, group II is a high school graduate group, and group III is clearly a college group in terms of the educational attainment of the subject's mother.

Table 21. Composition of the Three Status Structure Groups by Mother's Educational Attainment

Mother's Education	Status Structure Groups[a] I (2 & 3)	II (6)	III (9 & 10)	N
8th Grade or less	24 (32%)	2 (06%)	1 (02%)	27
9-11 Grades	21 (28%)	9 (26%)	1 (02%)	31
12 Grades	24 (32%)	15 (43%)	21 (37%)	60
College or Degree	6 (08%)	9 (26%)	34 (60%)	24
Totals:	75 (100%)	35 (100%)	57 (100%)	167

$\chi^2 = 121.97$, df = 6, $p < .001$ (Siegel, 1956, pp. 174-179).

[a]The numbers in parentheses refer to the composite status groups selected as representative of each status structure group. The percentages for groups II and III do not sum to exactly 100% due to rounding.

3. Father's occupation. Finally, Table 22 shows the distribution of the three groups by occupational categories for the fathers. All occupational groups with the exception of farm owners and renters tend to discriminate between the three status structure groups. Both groups I and II have a substantial proportion in this category.

Nevertheless, the pattern for groups II and III is clear. For group III, 72 per cent of the fathers are professional, and technical workers or managers, officials, and proprietors. For group II, 40 per cent are clerical, sales, craftsmen, foreman, or kindred workers, while 26 per cent are farm owners or renters.

Group I tends to be spread over the bottom four occupational groups. However, since we have already assigned the category for clerical and kindred workees, we shall describe group I as 70 per cent operatives, farm owners or renters, service workers, laborers, and kindred workers.

Table 22. Composition of the Three Status Structure Groups by Father's Occupation

Father's Occupational Group [a]	Status Structure Groups [b] I (2 & 3)	II (6)	III (9 & 10)	N
Professional, Technical, and kindred workers	0 (00%)	4 (11%)	19 (33%)	23
Managers, Officials, and Proprietors (excl. farm)	2 (02%)	4 (11%)	22 (39%)	28
Clerical, Sales, Craftsman, Foreman, and kindred workers	21 (28%)	14 (40%)	13 (23%)	48
Operatives and kindred workers	11 (15%)	3 (08%)	1 (02%)	15
Farm Owners and Renters	22 (29%)	9 (26%)	1 (02%)	32
Service Workers and Laborers	19 (26%)	1 (03%)	1 (02%)	21
Totals:	75 (100%)	35 (100%)	57 (100%)	167
NORC (Duncan) Prestige Means:	56.96	62.46	74.86	64.22

$\chi^2 = 91.74$, df = 10, $p < .001$ (Siegel, 1956, pp. 174-179).

[a] Some of these categories include two or more of the classifications used by Duncan (1961). Several of the original classifications were collapsed so that fewer than 20 per cent of the cells would have an expected frequency of less than 5, and no cell would have an expected frequency of less than 1 (Siegel, 1956, p. 178).

[b] The numbers in parentheses refer to the composite status groups selected as representative of each status structure group. The percentages for groups II and III do not sum to exactly 100% due to rounding.

Table 22 also indicates the average occupational prestige for the occupations of the fathers in each of the status structure groups. The differences between these means is congruent with the percentage distributions--differences in father's occupation are more pronounced between groups II and III than between groups I and II. Thus, the occupational prestige distance is greater between groups II and III than between groups I and II.

In summary, Table 22 seems to justify the following description of the three groups. Group I tends to be the least homogeneous of the three groups, and in certain categories is quite similar to group II. Thus, we shall call both groups I and II "working-class" groups, noting that we are embracing skilled, semi-skilled, and unskilled work. Group III is clearly a professional, technical, and managerial group. Therefore, we shall refer to group III as a professional and semi-professional group.

4. Synthesis. The results of analyzing the three criteria may now be synthesized. Group I appears to be a grade school working class group. Group II appears to be a high school working class group. Finally, group III is clearly interpretable as a college professional and semi-professional group.

We conclude that these interpretations are systematic, sociologically meaningful, and congruent with stratification theory and research. In general, these three groups appear to correspond to what is often called the "blue collar class" or "lower-middle class," the "white collar class" or "middle-class," and the "upper-middle class" or "professional class." This is the kind of stratification system that one might expect to find in Lenawee County.

Thus, hypothesis 3 is substantiated and the status structure model appears to deal adequately with the problem of boundary analysis.

Discussion and Conclusions

Figure 8 shows that status consistency tends to increase as we move from groups low in composite status to groups high in composite status. This is consistent with the observation in the last chapter that SES $\bar{X}_1$ and SC_1 have a product-moment correlation of +0.29.

Moreover, the status structure curve is truncated at the low composite status end of the order of composite status groups. From this we may infer that we do not have a substantial proportion of subjects in the sample with extremely low social status. If we did, their status consistency scores would be higher, and the low status end of the curve would rise to approximately the level of the high status end of the curve.

On the other hand, the median status consistency score of the highest composite status groups has a value of approximately 69.0 out of a possible value of 80.0. From this we infer that the sample does include a substantial proportion of subjects who are at the high extreme of composite status.

Thus, the dip in status consistency for composite status group 1 relative to group I (composite status groups 2 and 3) is difficult to interpret. Composite status group 1 seems to represent subjects who are members of a boundary separating group I and a status structure group which is lower in composite status. But this lower group does not have a sufficient number of members in the Lenawee sample to be represented by the status structure model. Thus, composite status group 1 is tentatively interpreted as an incipient boundary or as a group which is marginal to group I.

Finally, it may be noted that groups II and III are more pronounced in their nodular structure than is group I. Thus, group I may in fact be a quasi status structure group, one which has not reached a level of

status consistency which is comparable to the levels reached by groups II and III. This may be due to the intrinsic character of a low status group. However, this may also reflect the fact that group I contains a higher proportion of individuals who are mobile than do groups II and III.

We conclude that group I may be tentatively interpreted as a quasi status structure group relative to groups II and III, or as a subgroup of group II based on educational but not occupational differences.

The reification of the three obtained status structure groups should be avoided. We do not have sufficient data to determine whether these groups function as social "classes" or as other structural groups in Lenawee County. Information on differential social interaction, community consensus, and self-attribution is lacking. Moreover, since the model was applied to county-wide data, the obtained status structure may or may not be representative of the stratification structure of any or all communities in the county.

With these cautions and limitations in view, we conclude that the status structure model is probably valid in that (1) it generates a heterogeneous status structure which exhibits substantive rather than nominal boundaries and (2) the obtained status structure groups are internally congruent and externally differentiated on criteria such that the resulting pattern is sociologically meaningful. In short, all three hypotheses for the status structure model are verified.

The Personality Concomitant Model

There are four hypotheses associated with an evaluation of the personality concomitant model:

1. The personality concomitant model will generate a nodular structure, i.e., non-monotonic relationships between the status structure and selected personality indicants.

2. These non-monotonic relationships will be mainly isomorphic.

3. The personality concomitant model will also show monotonic relationships between composite status and selected personality indicants which are congruent with the findings of linear models.

4. The personality concomitant model will be relevant for both the adjustment and the achievement domains of personality.

Adjustment Concomitants: Results

Table 23 presents the medians of four adjustment indicants for the ten composite status groups. These adjustment indicants are Integration versus Anxiety (IA $\overline{X}$), Status Anxiety (SA), lack of Nervous Symptoms (NS), and Perceived Evaluation-by-Others (PEO). The medians were mapped onto the status structure curve presented in the previous section, and a smooth curve was drawn between the medians for each adjustment indicant.

1. Integration versus Anxiety. Figure 9 shows the nodular curve for Integration (lack of anxiety). A nodular structure is obtained for all of the ten status structure groups. Thus, hypothesis 1 is confirmed for Integration.

In general, non-monotonic relationships tend to be mainly isomorphic but 180 degrees out of phase with the status structure. Thus, hypothesis 2 is confirmed.

Integration is relatively high for composite status group 1, Integration decreases (anxiety increases) as we move into status structure group I. Then Integration increases at the boundary between group I and group II. However, midway between the boundary and Group II Integration takes a dip at composite status group 5. This dip is a non-isomorphic relationship with the status structure, since status

Table 23. Medians of Four Adjustment Indicants for the Ten Composite Status Groups (SES $\bar{X}_1$)

	Medians[b]							
Group[a]	IA $\bar{X}$	N	SA	N	NS	N	PEO	N
(01)	50.8	37	57.2	38	51.8	37	47.8	38
(02)	48.5	34	58.0	34	49.5	34	47.2	34
(03)	48.0	40	54.8	41	49.2	40	52.7	41
(04)	50.5	30	51.3	30	51.9	30	54.2	30
(05)	48.3	42	53.1	42	47.9	42	53.1	42
(06)	50.5	34	51.1	34	54.3	33	57.3	34
(07)	51.1	41	51.9	41	53.2	40	52.6	41
(08)	51.0	27	51.6	27	50.4	27	54.8	27
(09)	50.0	32	51.9	33	52.2	32	53.4	33
(10)	54.5	24	44.5	24	50.5	24	58.9	24
Range:	48.0-54.5		44.5-58.0		47.9-54.3		47.2-58.9	
Totals:		341		344		339		344

[a]The SES $\bar{X}_1$ score range for each of the composite status groups is presented in Table 19.

[b]The N's for the adjustment indicants vary slightly on several groups because of data attrition.

consistency shows a smooth increase over composite status groups 4 through 6. Thus, there is an increase in anxiety (decrease in Integration) as we move from the boundary into group II. However, this dip is followed by an increase in Integration which parallels the increase in status consistency as we move into group II.

From composite status group 6 (at the center of status structure group II) Integration tends to increase for the second boundary, decreases for group 9 (the first half of status structure group III), and then sharply increases for group 10. The change in Integration from group 9 to group 10 is non-isomorphic with the status structure.

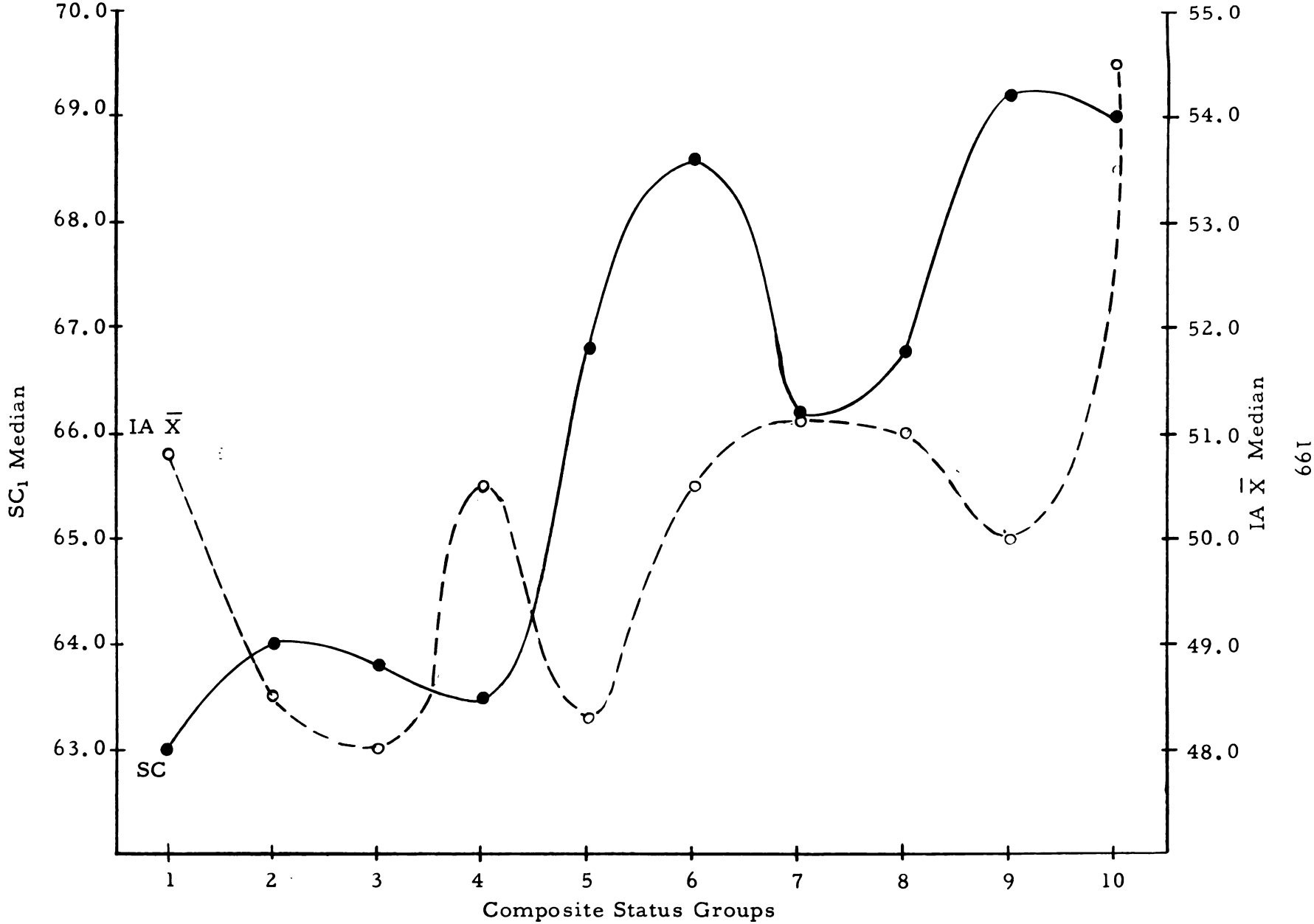

Figure 9. The Nodular Structure for Integration Versus Anxiety (IA $\bar{X}$).

However, the dip at group 9 is isomorphic with the status structure, but 180 degrees out of phase.

Moreover, excepting the dip at group 9, Integration tends to follow a monotonic trend as composite status increases from group 5 through group 10. However, from composite status group 1 through group 6 there is no monotonic increase of Integration as composite status increases. This lack of monotonic association over the full range of composite status may account for the small positive zero-order correlation between SES $\overline{X}_1$ and IA $\overline{X}$ observed in Chapter VIII ($r = +0.13$).

In summary, non-monotonic relationships for Integration versus Anxiety hold over the full range of the status structure. Thus, hypothesis 1 is confirmed. These non-monotonic relationships are mainly isomorphic although 180 degrees out of phase with the status structure. Thus, the expectation of hypothesis 2 is met.

However, there are two non-isomorphic exceptions. These occur at composite status group 5 (midway between the first boundary and status structure group II) and at group 10 (the upper half of status structure group III). Finally, a general monotonic trend holds for only the upper range of composite status. However, this trend is in the direction indicated by linear correlation analysis, and therefore hypothesis 3 is substantiated.

2. Status Anxiety. The nodular curve for the Status Anxiety indicant is presented in Figure 10. In general, Status Anxiety shows non-monotonic relationships only from composite status groups 1 through 6. The curve is essentially flat from group 6 through group 9. From group 9 to group 10, the curve is monotonic with respect to composite status. Thus, hypothesis 1 is partially confirmed for Status Anxiety.

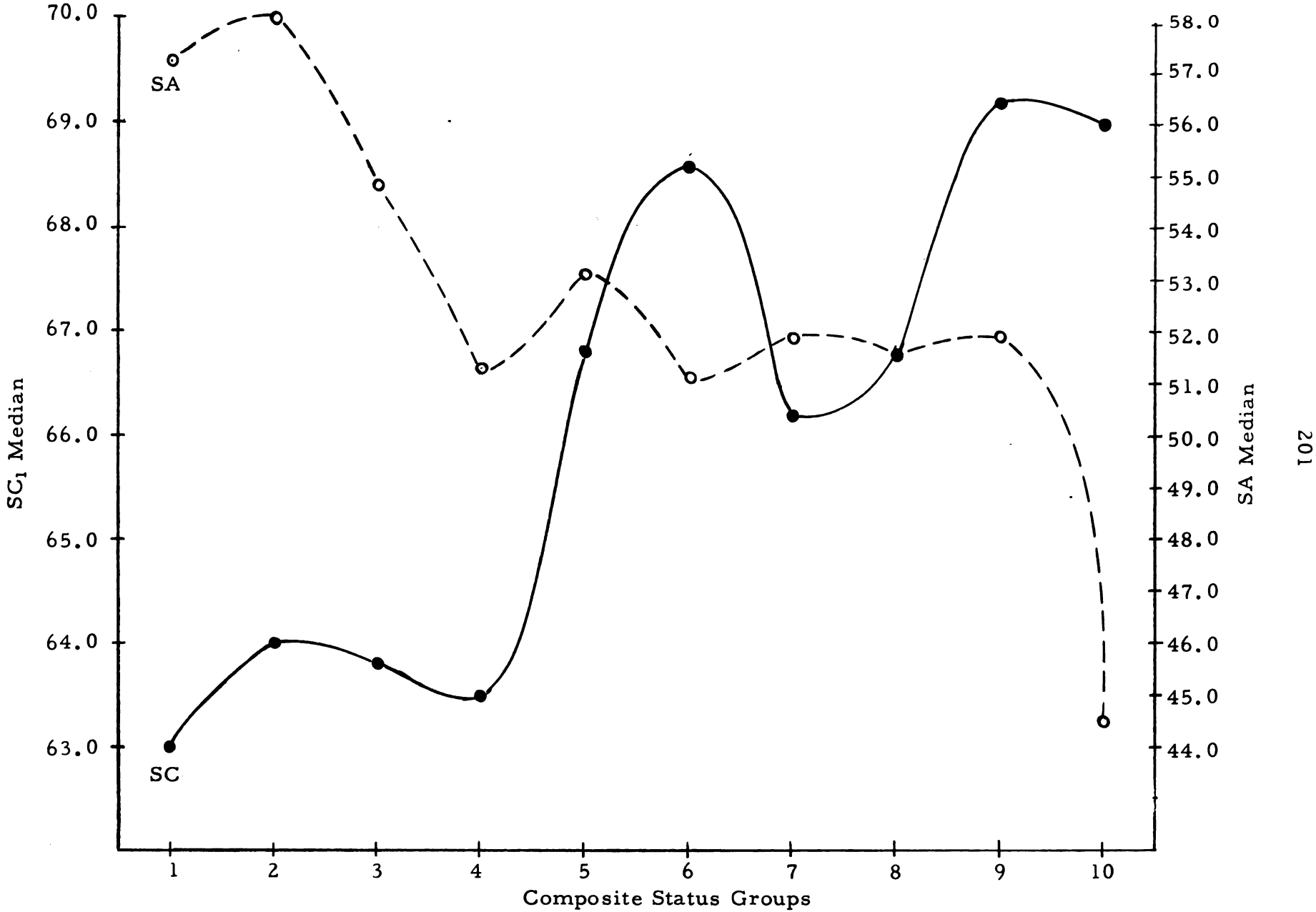

Figure 10. The Nodular Structure for Status Anxiety (SA).

Status Anxiety shows a maximum peak for group I, dips at the boundary between group I and group II, has a slight peaking for composite status group 5 (midway between the boundary and group II), remains flat from group II to group 9 (the first half of group III), and then shows a sharp decrease from group 9 to group 10. Except for the peaking at group 5, the non-monotonic relationships tend to be isomorphic with the status structure. The peaking at group 5 is a non-isomorphic relationship.[3] Thus, hypothesis 2 is accepted.

The general monotonic trend of the Status Anxiety curve is a negative association with composite status. This is clear, however, only for the portion of the status structure from composite status groups 1 through 4, and 9 through 10. Thus, the curve is congruent with the results of the linear bivariate correlation model where the zero-order correlation between SES $\bar{X}_1$ and SA was -0.27. Therefore, hypothesis 3 is verified for Status Anxiety.

3. Nervous Symptoms. The lack of Nervous Symptoms indicant generates the nodular curve presented in Figure 11. This curve exhibits non-monotonic relationships over the entire range of composite status groups. Thus, hypothesis 1 is completely verified for the Nervous Symptoms indicant.

Most of the curve is isomorphic to the status structure. However, there are four points at which the Nervous Symptom nodular structure is non-isomorphic. One is at composite status group 5 where lack of Nervous Symptoms dips between a boundary and group II.[4] A second is at group 7 where there is a status consistency node without a corresponding Nervous Symptom node. A third is at group 8 where there is

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[3]A non-isomorphic, non-monotonic relationship for Integration versus Anxiety also occurred at group 5.

[4]Non-isomorphic relationships also occurred at group 5 for Integration versus Anxiety and Status Anxiety.

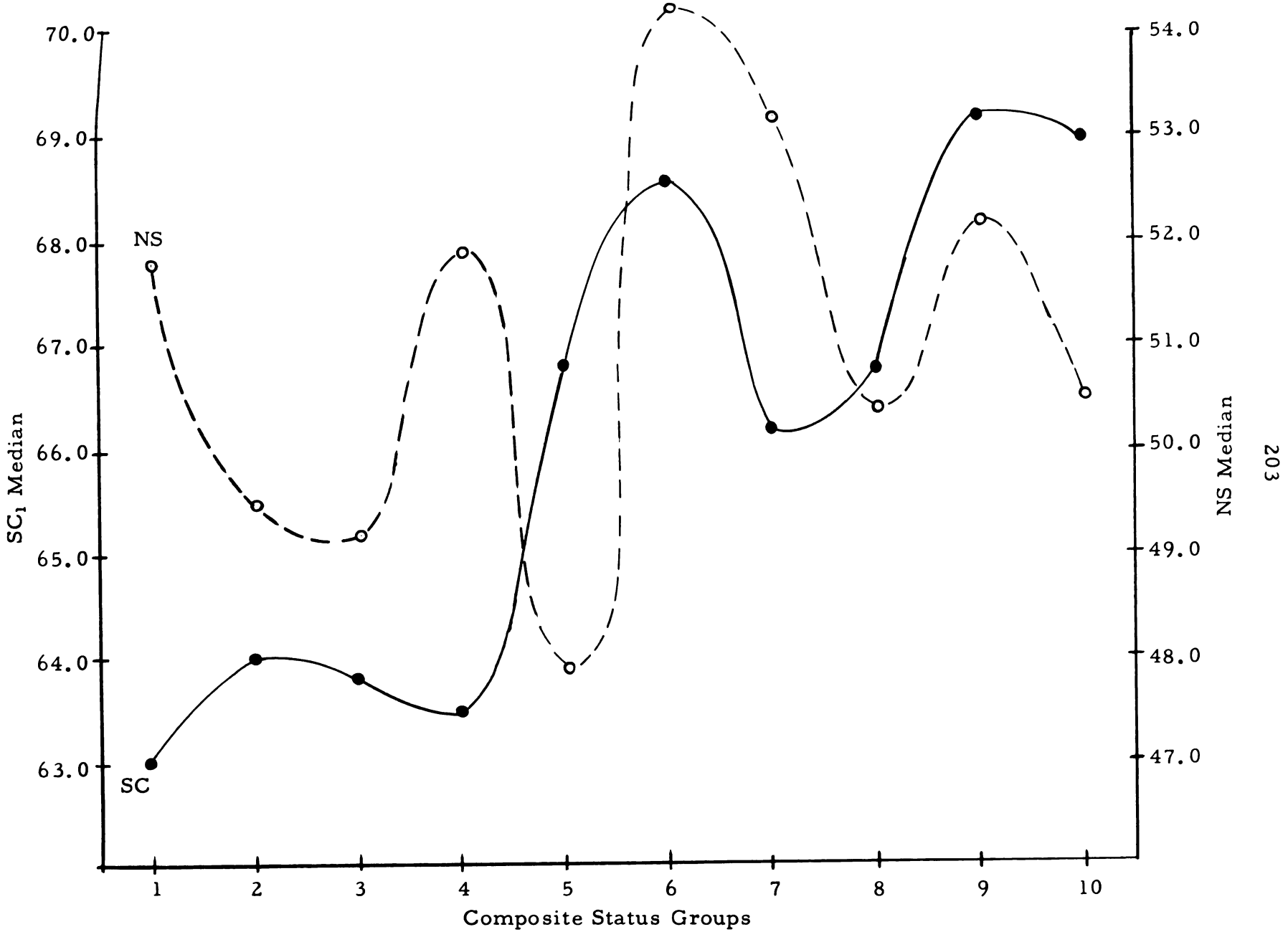

Figure 11. The Nodular Structure for Lack of Nervous Symptoms (NS)

a Nervous Symptom node without a corresponding node in status consistency. Finally, the fourth is at group 10 where there is a modulation in Nervous Symptoms without a corresponding modulation in status consistency.

On the other hand, isomorphic relationships occur for groups 1, 2, 3, 4, 6, and 9. Thus, the evidence tends to favor accepting hypothesis 2. However, after the first four composite status groups, a series of interesting phase differences occur. These, and other observations, will be treated in the section on discussion and conclusions.

There is a complete lack of a monotonic trend in Figure 11 for lack of Nervous Symptoms. This is clearly congruent with the results of linear models, which showed that there is a non-significant zero-order correlation between composite status and Nervous Symptoms of +0.04. Thus, hypothesis 3 is confirmed.

4. Perceived Evaluation-by-Others. The nodular structure for positive versus negative Perceived Evaluations-by-Others (PEO) is presented in Figure 12. Non-monotonic relationships obtain for the entire range of composite status groups. Thus, hypothesis 1 is confirmed for the PEO indicant.

In general, the PEO curve is isomorphis but 180 degrees out of phase with the status structure. However, there are two points in the curve where a phase shift occurs, and consequently these two points are non-isomorphis. Therefore, hypothesis 2 tends to be supported.

Isomorphis nodes occur for groups 1 to 5. At group 5 the curve changes phase and produces a non-isomorphic dip.[5] From group 5 through group 8 the curve is isomorphic but in phase with the status structure. At group 9 there is another phase shift and the curve is out

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[5]Group 5 has been the source of non-isomorphic nodes for all four of the adjustment indicants. See Figures 9, 10, and 11.

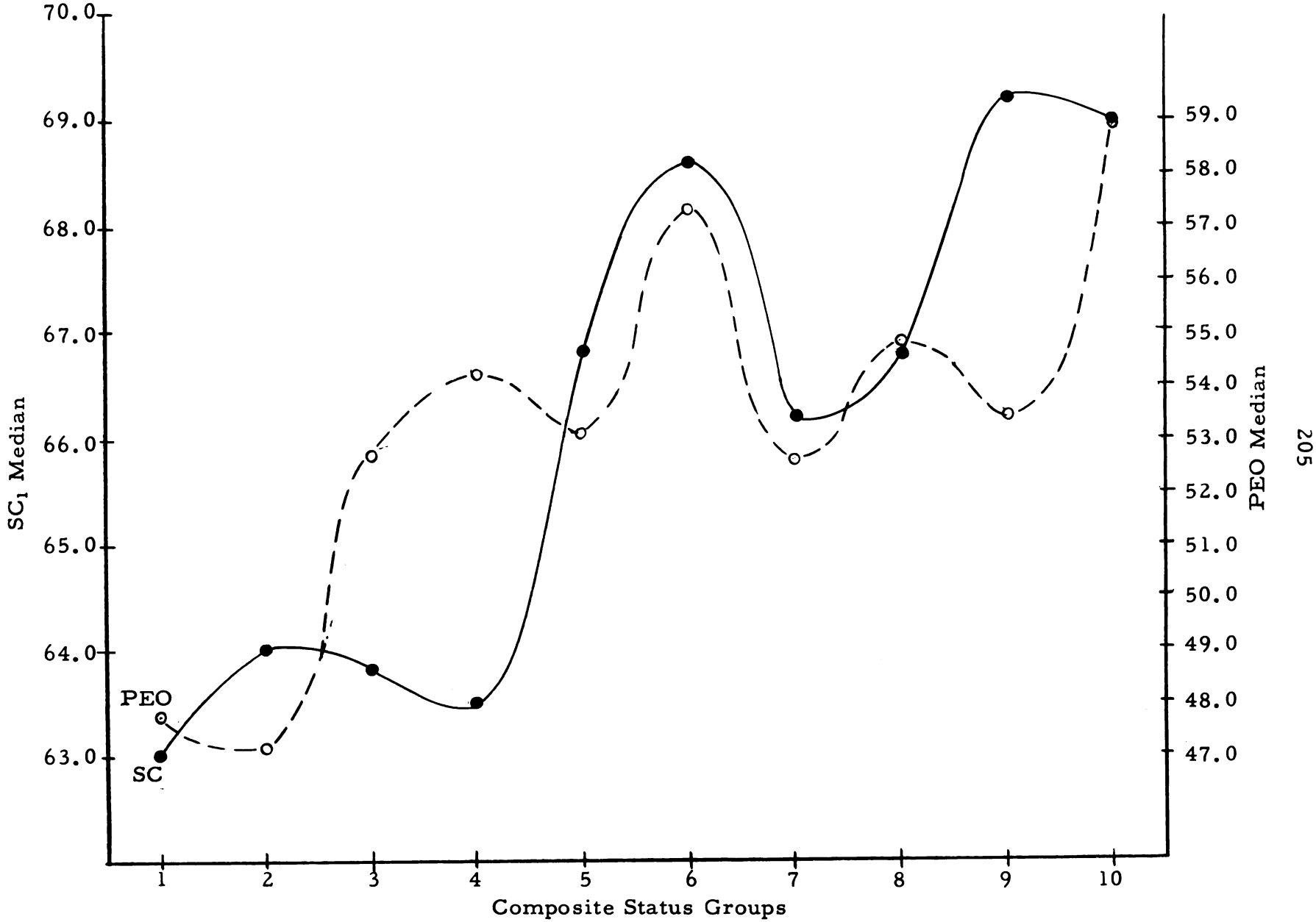

Figure 12. The Nodular Structure for Perceived Evaluation-by-Others (PEO).

of phase with the status structure but isomorphic. From group 9 through group 10 the curve is monotonic with composite status and therefore non-isomorphic.

The general monotonic trend of the PEO nodular structure is a positive association with composite status. This is most marked for groups 1 through 6. This trend agrees with the findings of linear models, where the zero-order correlation between SES $\overline{X}_1$ and PEO was +0.18. Thus, hypothesis 3 is accepted for the PEO indicant.

Discussion and Conclusions

In this section we shall interpret each of the four adjustment nodular structures, attempt to synthesize these interpretations for adjustment concomitants in general, and compare the findings with the results of linear models.

1. Interpretation. Integration has minimum nodes at group I and midway between the first boundary and group II. Thus, Integration is minimum (anxiety is maximum) for subjects in the grade school working class (group I) and for those who appear to be incipient members of group II (high school working class).

Composite status group 1, the boundary between group I and group II (with the exception of group 5), and members of group II, the boundary between II and III, and the lowest half of group III all show moderate Integration. However, the highest half of group III (group 10) shows a marked increase in Integration.

Apparently, differences in composite status within boundaries and status structure groups, as well as between status structure groups, generate modulations in Integration or adjustment. Moreover, differences in Integration show mild modulations until we move within the highest status structure group, group III. Here, an increase in composite status within the group results in a strong monotonic increase in Integration, or decrease in anxiety.

The minimum non-isomorphic node in Integration at group 5 suggests that persons who are either incipient members of the boundary between group I and group II, or incipient members of group II, possess a marginality which may provide stress. Thus, members of group I and group 5 show the most anxiety of all subjects, even though they differ considerably in composite status. On the other hand, members of group 1 (which is lowest in composite status) show no more anxiety than members of group II.

Therefore, Integration is by no means a simple function of composite status or even of status structure group membership. This is a fact which the linear models tend to ignore.

We conclude that the nodular curve for Integration tends to indicate that highest general anxiety is associated with membership in group I (grade school working class) and incipient membership in either the boundary or group II (high school working class). Moderate anxiety is associated with lowest composite status (group 1), membership in the boundary between group I and group II, in group II, in the boundary between group II and group III, and in the first portion of group III. Low anxiety (high Integration and adjustment) is associated with a small segment of the stratification system, namely, those who have the highest composite status and are members of group III (college professional and semi-professional class).

Of special interest is the modulation which occurs at group 5. While this tends to be a small node, it is a shift in the isomorphic pattern and it occurs for each of the four adjustment indicants. Thus, it will be of special importance in synthesizing the findings of the adjustment indicants.

The interpretation of the nodular curve for Status Anxiety is much simpler. There is only one point at which the curve is non-monotonic and isomorphic. This is at the maximum node of Status Anxiety for group I.

At group 5 there is a small non-isomorphic node where Status Anxiety increases midway between the first boundary and group II. In general, however, Status Anxiety tends to be flat and moderate between the first boundary and group 9, the first half of group III. From group 9 to group 10 Status Anxiety shows a sharp monotonic decrease with an increase in composite status.

We conclude that relatively high Status Anxiety is a concomitant of group I, the grade school working class. A tendency for moderately high Status Anxiety holds for those who are either incipient members of the first boundary or of group II, the high school working class. Status Anxiety is moderate and constant for the remaining portion of the status structure, but shows a sharp decrease for those having the highest composite status in group III (the college professional and semi-professional class).

This pattern is substantially congruent with the pattern obtained for general anxiety (or lack of Integration), although it does not have as many nodes as the Integration curve.

The clearest non-monotonic structure is produced by lack of Nervous Symptoms (specifically, lack of psychosomatic complaints and symptoms of restlessness). This curve has two points at which phase shifts occur. These, in turn, produce several points where the relationship between the status structure and Nervous Symptoms are non-isomorphic.

From group 1 through group 4 the curve is isomorphic. Nervous Symptoms tend to be moderately high for group I and moderately low for the boundary between group I and group II. However, at group 5 there is a non-isomorphic relationship and Nervous Symptoms reach their maximum (a minimum node for lack of Nervous Symptoms) between the first boundary and group II.

From group 5 to group 6 Nervous Symptoms take their sharpest swing, moving from a maximum to a minimum for group II. The relationship at group 6 is again isomorphic.

At group 7 a phase shift begins which makes the remaining Nervous Symptom nodes out of phase with the status structure and hence non-isomorphic. Thus, Nervous Symptoms tend to be low for most of the boundary between group II and group III. Nervous Symptoms increase slightly for the point (group 8) midway between the boundary and group III. They decrease slightly for group 9, the first half of group III, and then increase slightly for the group with the highest composite status, group 10.

In general, Nervous Symptoms tend to be moderately high for group I, the point midway between the second boundary and group III, and the last half of group III. Nervous Symptoms are moderately low for group 1, the boundary between group I and group II, and the first half of group III. Nervous Symptoms are highest for group 5 (midway between the first boundary and group II) and lowest for group II. Thus, the largest modulation in Nervous Symptoms occurs from the point midway between the first boundary and group II, and group II.

In conclusion, only the first five groups of the Nervous Symptom curve tend to be congruent with the Integration and Status Anxiety curves. That is, Nervous Symptoms are associated with group I (grade school working class) and with the point midway between the first boundary and group II (high school working class). However, lack of Nervous Symptoms is most strongly associated with group II rather than with group 10 of group III (unlike the parallel association of high Integration and lack of Status Anxiety with group 10). Thus, the nodular pattern of Nervous Symptoms departs from the patterns of Integration and Status Anxiety after group 5.

Finally, nervous symptoms tend to show a curvilinear rather than linear general relationship with composite status. Thus, nervous symptoms are lowest in the mid-range of composite status (group II) and highest for group I and the high extreme of composite status (group 10). However, there are modulations in this general relationship, the most marked of which occurs between groups 5 and 6.

The curve for positive Perceived Evaluation-by-Others has a nodular structure over the entire range of composite status. A general monotonic increase with composite status is most pronounced for the first six composite status groups.

Thus, positive evaluations are low for group I, increase for the first boundary, take a non-isomorphic dip at group 5 (midway between the first boundary and group II), increase for group II, and decrease for the second boundary. Positive evaluations then increase slightly for group 8, take a slight dip at group 9 (the first half of group III), and then increase sharply for group 10.

In general, positive evaluations are quite low for group I (grade school working class), and relatively low for incipient members of group II (at group 5), the second boundary, and group 9 of group III. Positive evaluations are relatively high for the first boundary, group II (high school working class), and group 10 of group III (college professional and semi-professional class).

The first boundary tends to generate a relative increase in positive evaluations while the second boundary produces a relative decrease in positive evaluations. However, both boundaries have about the same absolute level of evaluations.

It appears that movement from group I to group II increases positive evaluations notwithstanding a relative decrease in status consistency. This is not explicable in terms of the theory for status consistency

discussed in Chapter V. It is interpretable, however, in terms of an increase in composite status.

On the other hand, movement from group II to group III decreases positive evaluations even though there is an increase in composite status. Here a decrease in status consistency seems to be the probable explanation.

These observations suggest the differential effects of composite status and status consistency on adjustment depending upon the portion of the status structure in which the individual is implicated. If valid, this interpretation provides an illustration of the advantages of the Nodular models vis a vis the linear models.

In conclusion, the nodular pattern of PEO for the first five composite status groups is congruent with the corresponding pattern for Integration. The PEO node for group II tends to match the findings for Nervous Symptoms. The PEO nodes for the two boundaries show directional differences more sharply than any of the other three adjustment indicants. This suggests that adjustment may not be a simple function of either composite status or status consistency.

2. Synthesis. Taking the four adjustment indicants as measures of different but related aspects of personality adjustment, there are several convergences which hold at varying levels of generality.

All four indicants agree in showing that adjustment is lowest for group I, and moderate for both of the boundaries. Further, all four indicants show a clear tendency for adjustment to dip at group 5, midway between the first boundary and group II. This tendency is strong for Nervous Symptoms, moderate for Integration, and slight for Status Anxiety and Perceived Evaluation-by-Others.

Evidence for highest adjustment is mixed. Three indicants (IA $\overline{X}$, SA, and PEO) show that adjustment is highest for group 10 of group III (the highest composite status group). On the other hand,

two indicants (PEO and NS) show that adjustment is high for group II. In fact, the NS indicant shows that adjustment is highest for group II. Thus, Nervous Symptoms tend to yield atypical results for highest adjustment.

In general, evidence suggests that adjustment is lowest for the grade school working class (group I), moderate for both boundaries, and highest for the upper half of group III (college professional and semi-professional class). Evidence for group II is mixed. Two indicants show it to have moderate adjustment (Integration and Status Anxiety), one indicant shows it to have high adjustment equivalent to group III (Perceived Evaluations), and one indicant shows it to have the highest adjustment (lack of Nervous Symptoms). Thus, group II tends to have moderate to high adjustment.

Finally, a consistent non-isomorphic node at group 5 suggests that incipient membership in group II is associated with a relative decrease in adjustment. This is most marked for Nervous Symptoms.

The relative effect of boundaries on adjustment is most clearly indicated by the PEO and NS indicants. Both of these show that there is a relative increase in adjustment for the first boundary (between group I and group II) and a relative decrease in adjustment for the second boundary (between group II and group III). It appears that movement from the grade school working class to the high school working class involves composite status influences on adjustment, while movement from the high school working class to the college professional class brings out the functional importance of status consistency for adjustment.

This observation, and the finding of a consistent dip in adjustment midway between the first boundary and group II, seem to us to be the most provocative in terms of generating hypotheses for future research. Both of these demonstrate the proposition that personality

adjustment is not a simple function of either composite status or status consistency. Rather, the implication seems to be that the individual's position in the stratification system differentially influences the functional importance of variables in the antecedent system for his personality adjustment.

Finally, the four adjustment indicants are far from equivalent in terms of the nodular structures which they generate. Thus, PEO produces the largest number of nodes (7) followed by NS (6), IA $\overline{X}$ (5), and SA (2).

Similarly, the indicants differ with regard to the range of composite status groups over which general monotonic trends are most pronounced. Monotonic relationships are concentrated in the low range of composite status for Status Anxiety (groups 2 to 4) and Perceived Evaluation-by-Others (groups 1 to 6). On the other hand, monotonic trends are most marked in the high range of composite status for Integration (groups 5 to 10) and for Status Anxiety (groups 9 to 10). Thus, Status Anxiety has marked monotonic trends at the extremes of composite status but is generally flat over the mid-range of status.

We conclude that the nodular patterns for the four adjustment indicants provide convergent results sufficient to support several interpretations within a general personality adjustment framework. However, the Nodular models show that general monotonic relationships do not occur over the same range of composite status for every type of adjustment indicant.

Moreover, there are important differences between indicants and sub-classes of indicants. These suggest speculations (which need to be tested by future research) concerning the differential functional importance of composite status and status consistency for adjustment at varying points in a status structure.

Finally, interpretations concerning the psychological concomitants of incipient membership in a status structure group are provocative but should not be taken as facts supported by the present data. These and other speculations should be taken as hypotheses for future research. They were presented simply to illustrate the kinds and range of information which the Nodular models are capable of generating.

3. Comparison with linear models. The following comments reflect judgments which are based on the limitations of available data. Therefore, they are meant to be provisional and in no way represent a final estimate of the performance of Nodular models vis a vis linear models. For reasons which we shall cite in the final chapter, a more rigorous evaluation of the Nodular models must await further work.

Nodular models appear to generate findings that are more difficult to interpret and integrate than are the results obtained by linear models. Nodular models (as we have developed them) do not provide convenient quantitative summaries of the degree or significance of goodness of fit with hypotheses, as most linear models do.[6]

On the other hand, the Nodular models for adjustment indicants are more flexible, permitting the testing of multiple alternative hypotheses. Further, the Nodular models provide more information, seem to be theoretically more fertile, and generate hypotheses for

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[6]In fact, quantitative tests of significance appear misleading for Nodular models, since these tests ignore convergences in patterns and meaning. For example, Chi-squares for the extension of the median test (Siegel, 1956, pp. 179-184) were computed for two of the nodular structures. The Chi-square is significant for the status structure model ($p < .001$). However, this result may be due to a significant monotonic (rather than non-monotonic) relationship between composite status and status consistency. Thus, while Nervous Symptoms generate the most marked nodular structure, the Chi-square test shows that the structure is not statistically significant ($p > .30$).

future research which linear models appear to be incapable of generating.

Finally, Nodular models permit the articulation of personality consequents with multi-dimensional stratification systems (status structures) rather than with single stratification variables. In so doing, Nodular models suggest (and offer a technique for testing) propositions concerning the differential functional importance of composite status and status consistency at different points in a stratification system. Nodular models also permit, to a greater degree than linear models, the interpretive synthesis of the complex patterns of several adjustment concomitants in relation to a stratification system.

In all, Nodular models tend to be more holistic than the linear models examined. Factor analysis is perhaps the one exception, for it is certainly one of the most holistic of linear models. Nevertheless, there is an important difference between factor analysis and Nodular models, granting their common holistic or molar characteristic. While factor analysis is a technique for data reduction, Nodular models are techniques for generating data from only a few variables.

Finally, another feature which flows from the holistic characteristic of Nodular models is their ability to indicate both monotonic and non-monotonic relationships. In short, Nodular models appear to be more holistic and more flexible than the linear models examined, given a relatively small number of antecedent and consequent variables.

4. Conclusions. The application of the Nodular model to four adjustment indicants yields findings which show a substantial degree of interpretive congruence. This suggests the possibility of developing a general interpretive framework for handling the nodular structures of adjustment concomitants.

Moreover, several hypotheses are generated which linear models appear incapable of generating or testing. These hypotheses were based

on speculations which illustrate the range of information generated by the Nodular models, but which do not necessarily reflect facts supported by the present data.

Perhaps the single most important characteristic distinguishing Nodular models from linear models is the holistic or molar attributes of Nodular models. This poses problems in interpretation, but it also provides more complex information, more theoretical fertility, and the testing of multiple hypotheses to a greater degree than linear models.

There are three consequences of the molar characteristic of Nodular models. First, Nodular models permit the articulation of personality concomitants with a bivariate stratification system rather than with single stratification variables. Second, Nodular models permit the interpretive synthesis of the nodular patterns of multiple adjustment indicants in relation to a status structure, or bivariate stratification system. Finally, Nodular models are flexible in that they reveal both monotonic and non-monotonic relationships. Thus, Nodular models offer a technique for determining the differential functional importance of composite status and status consistency for adjustment at varying points in a stratification system.

In short, Nodular models allow the articulation of stratification as a system with personality as a system such that both monotonic and non-monotonic relationships are observable.

An Achievement Concomitant

Table 24 shows the median occupational aspiration score (OAS) for each of the ten composite status groups.[7] The medians were mapped

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[7]The OAS was chosen as the single appropriate indicant for achievement orientations for reasons which were discussed in Chapter VIII in the section on functionally coherent domains.

Table 24. Medians of an Achievement Indicant (OAS) for the Ten Composite Status Groups (SES $\bar{X}_1$)

Group[a]	Occupational Aspiration (OAS) Median	N
(01)	47.6	37
(02)	45.5	34
(03)	49.0	40
(04)	53.5	30
(05)	49.7	42
(06)	52.8	34
(07)	52.2	41
(08)	53.2	27
(09)	56.2	32
(10)	60.5	24
Range and Total:	45.5 - 60.5	341

[a]See Table 19 for the SES $\bar{X}_1$ score range for each composite status group.

on the status structure, and a smooth curve was drawn between the medians.

1. Results. Figure 13 indicates the nodular structure for level of occupational aspiration. A nodular structure holds only for the first seven composite status groups. From group 7 through group 10 the curve tends to be monotonically increasing with an increase in composite status. Thus, hypothesis 1 is confirmed for most of the curve.

Level of occupational aspiration shows a minimum dip for group I, a moderate peak for the first boundary, dips at group 5, returns to a moderate level for group II, dips slightly for the second boundary, and then tends to increase monotonically with composite status from group 7 (the midpoint of the second boundary) through group III.

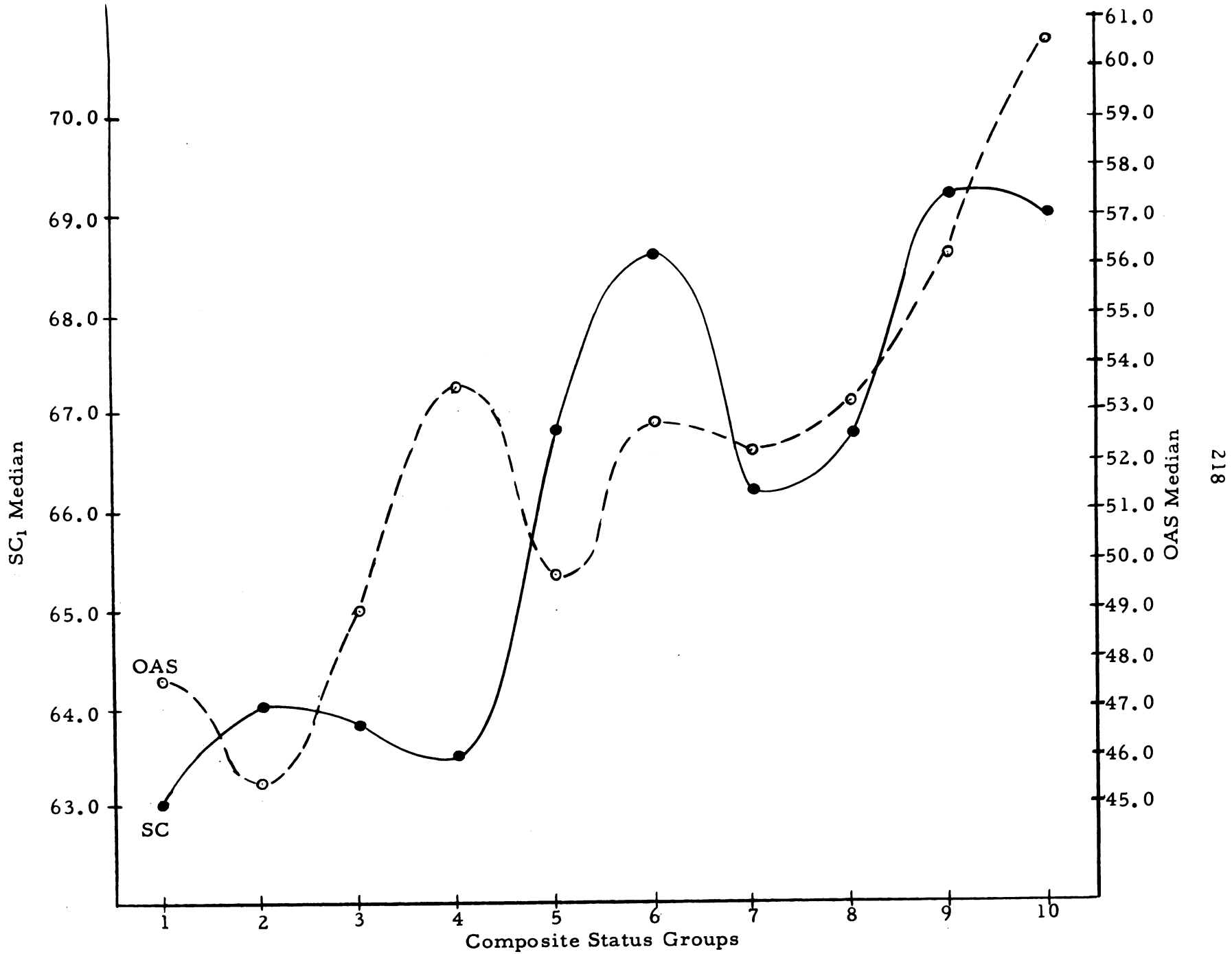

Figure 13. The Nodular Structure for Occupational Aspirations (OAS)

The only point in the non-monotonic portion of the curve where a non-isomorphic relationship obtains is group 5. Thus, hypothesis 2 is verified.

The overall trend of the curve in Figure 13 is a positive association between composite status and level of occupational aspiration. This trend is most pronounced for the upper portion of composite status. These observations are congruent with the results of linear correlation analysis, where the zero-order correlation between composite status and occupational aspiration was +0.34. Therefore, hypothesis 3 is confirmed.

The general nodular pattern of occupational aspiration tends to follow the patterns of the adjustment indicants. We conclude that the personality concomitant model seems equally relevant for the achievement domain, and hypothesis 4 is accepted. An interpretation of the occupational aspiration curve, which follows, will clarify the common relevancies of these two domains as indicated by their nodular structures.

2. Discussion and conclusions. Level of occupational aspiration is lowest for group I (grade school working class), moderate for both boundaries and group II (high school working class), and highest for the upper half of group III (college professional and semi-professional class). Moreover, there is a dip in aspiration midway between the first boundary and group II, at group 5. This also occurs for all four adjustment indicants. Thus, the nodular pattern for occupational aspirations tends to be convergent with the patterns for the adjustment indicants.

The relative effect of boundaries on occupational aspiration does not show the differential directions shown by Perceived Evaluation and Nervous Symptoms. There is a relative increase in occupational aspirations for the first boundary. This is congruent with the curves

for Integration, Perceived Evaluations, and Nervous Symptoms. However, there is not a relative decrease in aspirations for the second boundary. Thus, the aspiration node at the first boundary but not at the second boundary tends to be consistent with the findings for adjustment indicants.

The aspiration nodular structure does not suggest as strongly as the adjustment curves the proposition concerning the differential effects of composite status and status consistency at differing points in a stratification system. Nevertheless, the modulations of occupational aspiration with the status structure do support the hypotheses for the personality concomitant model. Two convergences are especially striking. One is the non-isomorphic node at group 5. The other is the tendency for monotonic relationships to be most pronounced over the upper portion of composite status.

The nodular models provide static rather than dynamic information. Nevertheless, if we take an "as if" perspective, noting the caution regarding reification of the status structure groups, we may make a few conjectures regarding movement from one group to another.

The substantial rise in occupational aspiration at the boundary between group I and group II suggests that initial movement out of group I and into the first boundary is accompanied by a rise in occupational aspirations for the subjects. This rise tends to be higher than the levels characterizing actual membership in group II. However, incipient membership in group II depresses occupational aspirations. When membership in group II is attained, the level of occupational aspiration tends to rise to a moderate level and remains at that level through the second boundary. Membership in group III results in increasing levels of occupational aspiration as composite status increases.

This seems to imply that mobility from the grade school working class (group I) to the first boundary generates rather high levels of occupational aspiration for the subjects. This level is momentarily depressed as incipient membership is reached, perhaps reflecting an adaptation to the actual normative demands of the high school working class (group II) rather than the "idealistic" aspirations which serve to motivate the initial movement from group I. This slight dip may also be a function of the dip in adjustment noted in the other curves, which in turn may be influenced by stresses peculiar to incipient membership, a kind of social psychological marginality.

In general, then, mobility through the first boundary may be social psychologically "optimistic," while mobility through the second boundary may be either social psychologically bland or "pessimistic." Optimism may be a function of emphasis on a high anticipated reward-cost ratio, while lack of optimism or pessimism may be due to the anticipation of more risk, and hence a high cost to reward ratio.

Thus, the high school working class group provides a modicum of "status security," being neither the highest nor the lowest status structure group. However, movement from it to the next group (group III, the college professional and semi-professional class) entails a certain amount of risk. Stress arising from a perception of this risk may be reflected in a relative dip in adjustment and achievement orientation, or at least a stabilization of occupational aspirations. Once group III is approached and entered, occupational aspirations tend to increase rather steeply.

Thus, the personality concomitant model provides the basis for speculations on the personality concomitants of social mobility within the status structure, or stratification system. These speculations require other data before the "as if" limitation can be removed.

These data should clarify the "class" characteristics of the status structure groups. They should also provide a set of criteria for identifying which persons implicated in boundaries are in fact socially mobile. Nevertheless, the Nodular models appear to offer a beginning for developing dynamic rather than static interpretations.[8]

Finally, the conclusions reached on a comparison of Nodular models with linear models for adjustment hold equally well for the achievement concomitant, occupational aspirations. The holistic characteristic of the Nodular models makes interpretation and quantitative summaries difficult. On the other hand, the application of the Nodular model to occupational aspiration suggests the testing of hypotheses concerning the achievement concomitants of a multidimensional stratification system and social mobility.

Thus, the achievement Nodular model also provides more complex information, more theoretical fertility, and the testing of multiple alternative hypotheses to a greater degree than linear models. At the same time, the achievement Nodular model also specifies the portion of the status structure where monotonic relationships (as summarized by linear models) are most pronounced.

In conclusion, the general convergences in nodular pattern for adjustment and achievement concomitants suggests the possibility of developing a common interpretive framework for the articulation of these two domains with a status structure, or stratification system.

Summary and Conclusions

This chapter examined, interpreted, and evaluated two types of Nodular models--the status structure model and the personality concomitant model.

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[8]Again, we remind the reader that these interpretations are frankly speculative and should not be taken as facts which are supported by the data.

The Status Structure Model

The status structure model generated three status structure groups and two associated boundaries. An evaluation of the three status structure groups in terms of educational and occupational composition provided a basis for interpretation. Group I, the status structure group lowest in composite status, was interpreted as a grade school working class. Group II, intermediate in composite status, was interpreted as a high school working class. Finally, group III, highest in composite status, was interpreted as a college professional and semi-professional class.

The need for additional data on "class" criteria, and the fact that the obtained status structure is based on county-wide data, suggested avoiding a reification of the status structure groups. All three hypotheses for the model were verified, and it was concluded that the status structure model is probably valid in that (1) it generates a heterogeneous status structure which exhibits substantive rather than nominal boundaries, and (2) the obtained status structure groups are internally congruent and externally differentiated on criteria such that the resulting pattern is sociologically meaningful.

The Personality Concomitant Model

The nodular structures of personality concomitants were interpreted using the status structure as the antecedent system. Four adjustment indicants were examined. These were Integration versus Anxiety (IA $\overline{X}$), Status Anxiety (SA), lack of Nervous Symptoms (NS), and positive Perceived Evaluation-by-Others (PEO). Level of occupational aspiration (OAS) was used as an achievement indicant.

In general, findings showed that adjustment is lowest for the grade school working class (group I), moderate for both boundaries,

and highest for the upper half of group III (college professional and semi-professional class). The evidence for group II (high school working class) is mixed. Two indicants (Integration and Status Anxiety) show group II as moderate in adjustment, one indicant (Perceived Evaluation) shows group II as high and equivalent in adjustment to group III, and one indicant (lack of Nervous Symptoms) shows group II as the highest in adjustment. Thus, group II is moderate to high in adjustment.

The Nodular models for the adjustment indicants provided convergent results sufficient to justify interpretations within a general adjustment framework. All four indicants showed a non-isomorphic dip midway between the first boundary and group II. This suggested an hypothesis regarding the possible effects of incipient membership in a specific status structure group.

However, there were also important differences among the adjustment indicants. Two indicants (PEO and NS) showed a relative increase in adjustment for the first boundary and a relative decrease in adjustment for the second boundary. This suggested the differential functional importance of composite status and status consistency for adjustment depending upon the individual's position in a stratification system.

The findings for the achievement indicant, level of occupational aspiration, were similar in pattern to the general pattern of the adjustment indicants. Occupational aspiration is lowest for the grade school working class (group I), moderate for both boundaries and group II (high school working class), and highest for the upper half of group III (college professional and semi-professional class). Also, occupational aspirations show a non-isomorphic dip midway between the first boundary and group II, exactly at the point where the four adjustment indicants showed a dip. There is a relative increase in aspirations for the first boundary, but no noticeable change for the second boundary relative to group II.

In summary, the findings for both adjustment and achievement indicants support the four hypotheses associated with the personality concomitant model. These findings are: (1) personality concomitants generally have non-monotonic relationships (nodular structures) with the status structure, (2) these relationships tend to be mainly isomorphic, (3) the model also shows monotonic relationships congruent with the findings of linear models, and (4) both achievement and adjustment concomitants generate interpretable nodular structures. Finally, several convergences in nodular pattern for both adjustment and achievement indicants suggest the possibility of developing a common interpretive framework.

Evaluation

Perhaps the single most important attribute contrasting linear and Nodular models is the holistic feature of Nodular models. This has its advantages and disadvantages.

Among the disadvantages are problems in interpretation, integration, and the conputation of convenient quantitative summaries of significance and goodness of fit with hypotheses. For example, Nodular models present problems in control which are met effectively for linear models by partial correlation techniques. Thus, Nodular models rely heavily on the theoretical and interpretive insights of the investigator in assessing the meaning and significance of obtained nodular patterns.

On the other hand, there are several advantages for Nodular models. They provide detailed information, are theoretically fertile, and permit the testing of multiple alternative hypotheses.

Further, Nodular models have salvaged some of the conceptual importance of status consistency which tended to be obscured by linear models. Similarly, Nodular models have shown that the adjustment

domain, as well as the achievement domain, is relevant for status structures, or stratification systems. Finally, there are three major consequences for status-personality theory and research flowing from the holistic character of Nodular models.

First, Nodular models permit the articulation of personality consequents with multi-dimensional stratification systems (status structures) rather than with single stratification variables. Thus, Nodular models suggest (and offer a technique for testing) hypotheses concerning the differential functional importance of composite status and status consistency at different locations in a stratification system. In short, Nodular models show (as the Amplifier model failed to show) that personality concomitants are not a simple function of either composite status or status consistency.

Second, Nodular models provide a systematic basis for mapping several personality concomitants and comparing their patterns. This allows a classification of personality indicants in terms of their nodular pattern with respect to a status structure. It also permits an interpretive synthesis of concomitants within a domain of concomitants. This synthesis may suggest (or test) explanatory hypotheses for the articulation of a stratification system with a personality domain whose functional coherence is given by linear models. Thus, Nodular models may either compliment or supplement information given by linear models.

Finally, Nodular models are more flexible (and hence more general) than linear models in that Nodular models reveal both monotonic and non-monotonic relationships between personality and status structures at varying points in a stratification system.[9]

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[9]For example, several of the nodular structures for personality concomitants indicate that the monotonic relationships with composite status, summarized by correlation coefficients in the linear models, are concentrated mainly in either the lower or the upper range of composite status.

In all, Nodular models seem capable of generating and testing hypotheses for both the antecedent and the consequent systems which linear models are incapable of generating or testing.

The next chapter restates the problem, presents an overview of the dissertation, evaluates the Nodular models with respect to the limitations of the present data, and suggests tasks for future research.

CHAPTER X

SUMMARY AND CONCLUSIONS

The major problem of this dissertation may be briefly restated.

The fundamental question was: is it possible to develop models which permit the articulation of stratification as a system with personality as a system such that both monotonic and non-monotonic relationships may be observed, and what are the advantages and disadvantages of such models in comparison to the traditional linear or monotonic bivariate models?

This chapter summarizes the findings bearing on this problem, examines the limitations of the dissertation in handling the problem, and suggests future research tasks for explicating the findings.

Overview

Previous Research

The research reviewed in Chapter II displayed substantial if not almost tiring consistency. In general, the findings show that social status is directly related to various measures of personality adjustment and achievement. The findings for the personality concomitants of status consistency were provocative but based on too few studies to permit a justifiable generalization.

We concluded that such research appears to have exhausted the empirical and theoretical returns of monotonic bivariate models.

We suggested that new work should focus on (1) the clarification of stratification and personality as antecedent and consequent systems, (2) the development of non-monotonic models and a comparison of these with monotonic models, and (3) the systematic but not indiscriminate use of controls.

Conceptual Analysis

Chapters III and IV were concerned with the explication of stratification and personality as the antecedent and consequent systems. Chapter V examined the problem of articulating the two systems in terms of system characteristics and theoretical considerations of mediating processes.

1. The antecedent system. Stratification was viewed in terms of two major organizational facets--the hierarchical and the non-hierarchical (or goodness-of-fit) facets. Social status, although often measured in terms of objective positions, was defined as a function of segmental status judgments.

Discontinuities in status structures were interpreted as necessary but not sufficient conditions for the delineation of social "classes." Finally, current techniques for boundary analysis were criticized for generating nominal rather than substantive views of boundaries.

The results of these conceptual analyses formed the basis for the design of the Amplifier and Nodular models. An examination of ascertainment techniques clarified the rationale for indicants of composite status and status consistency.

2. The consequent system. No attempt was made to explicate personality in the same detail as stratification. This decision was rooted in the conviction that an adequate specification of the antecedent system would be more fruitful in terms of the present state of the art in status-personality research.

The approach of the dissertation tended to favor an open system, multilevel, nomothetic, and synchronic view of personality. Two functionally coherent domains were hypothesized--adjustment and achievement.

In short, personality was viewed as an open (or quasi-open) system that transacts with the contemporary social environment, and comprises functionally coherent domains that are differentially status-relevant.

3. Articulations. Three types of antecedent models were identified. The first treats either composite status or status consistency as a single antecedent. The second combines status and status consistency to form a composite antecedent, of which the Amplifier model is a special case. The third derives an antecedent system--the status structure model--which permits the examination of the personality concomitants of heterogeneous stratification systems.

Each of these three antecedent models was articulated with each of two domains of personality (adjustment and achievement), thus generating six types of articulation models.

Conflicting values and expectations appeared to be the fundamental processes mediating adjustment concomitants with both composite status and status consistency. Resulting psychological stress was presumed to be expressed in symptoms such as uncertainty, frustration, lowered evaluation of the self, anxiety, psychosomatic complaints, and nervous tension.

The influence of composite status on achievement variables was explicable in terms of differences in the content of values and expectations, and in language differences. However, the direct relationship between status consistency and the achievement domain, ceteris paribus, was indeterminate.

Models and Procedure

Chapter VI described the Amplifier and Nodular models, the problem associated with an evaluation of linear and Nodular models, and hypotheses to be tested for each model. Chapter VII described the sample and data sources, the treatment of the data, the design and evaluation of the major instruments, and the specific analyses for each of the models.

1. Models. The Amplifier model assumed that the effects of composite status are amplified by status consistency such that a status-relevant consequent variable would have a specified monotonic order.

The Nodular model was designed to deal with the problem of the monotonic and non-monotonic mappings of personality concomitants on a heterogeneous status structure--a stratification system showing substantive boundaries.

Thus, there were two types of Nodular models: the status structure model as an antecedent system and the personality concomitant model as a consequent system.

The status structure model consisted of mapping status consistency medians over a range of ordered composite status groups. The resulting nodes were interpreted as either boundaries (if a relative minimum) or status structure groups (if a relative maximum).

The personality concomitant model was constructed by coordinating the status consistency and personality consequent medians over the ordered composite status groups. This permitted the examination of the personality concomitants of boundaries as well as status structure groups.

An analytical technique for estimating the parameters of the Nodular model was developed. This technique related the total sample

size (N), the number of composite status groups (k), the reliability of the model (r), the sensitivity of the model (s), and the number of status structure groups (g) hypothesized:

$$N = rk = rs(2g-1)$$

The evaluative problem and associated hypotheses for three linear or monotonic models and the two Nodular models were presented. One linear model was concerned with the identification of functionally coherent domains in the consequent system, personality, and the determination of the differential status-relevancy of these domains. The second linear model was bivariate correlation analysis, having two sub-models. These were zero-order correlation and first-order partial correlation with intelligence as the control. The third linear model was the Amplifier model. It was hypothesized that achievement but not adjustment would be significantly associated with composite status, whereas status consistency would be mainly related to adjustment.

The evaluation of the Nodular models consisted of several problems. One problem, which applied to both Nodular models, was whether the Nodular models would generate a nodular structure. The specific hypotheses for the status structure model were that it would produce two to six status structure groups and these groups would be substantively coherent in that they are sociologically meaningful.

The specific hypotheses for the personality concomitant model were (1) the relationships between the antecedent status structure and the personality concomitants would be isomorphic, (2) monotonic relationships congruent with the findings of linear models would also be indicated, and (3) the model would be relevant for both the adjustment and the achievement domains of personality.

Finally, four criteria for comparing and evaluating linear and Nodular models were discussed. There were (1) data requirements, (2) generality or flexibility, (3) information yield, and (4) interpretability. These criteria are applied to the models in a subsequent section of this chapter.

2. Procedure. The sample consisted of 442 seventeen-year-old high school boys in Lenawee County, Michigan, during the spring of 1957. Because of data attrition, the usable sample was reduced to approximately 340. The sample was assumed to be (1) representative of the stratification system in the county, (2) adequate for comparing linear and Nodular models, and (3) representative of similar samples that might be drawn in the United States.

Two indicants for the antecedent system were described and evaluated--composite status and status consistency. These were based on four status components: father's occupational prestige, parental educational attainment, physical characteristics of the home, and religion.

Six indicants for the consequent system were presented and evaluated. These were (1) Integration versus Anxiety, (2) Status Anxiety, (3) lack of Nervous Symptoms, (4) Perceived Evaluation-by-Others, (5) occupational aspirations, and (6) educational aspirations.

Additional variables for control (intelligence) and for marker variables were described. These were used in the analysis of functionally coherent domains and in bivariate correlation analysis.

Factor analysis showed the instruments to be crude but probably adequate measures of meaningful constructs. Test-retest reliability data were not available, and the dubious value of reliability estimates based on single trials was discussed.

The techniques for analyzing the linear and Nodular models were outlined, appropriate statistical tests for the hypotheses were discussed, and the parameters for the Nodular models were determined.

Findings

Chapter VIII examined the results from linear models, while Chapter IX presented the results from Nodular models and compared these with linear models.

1. Linear models. Factor analysis, the technique for determining functionally coherent domains, indicated two orthogonal factors based on the intercorrelations of 33 experimentally independent variables. These two factors were clearly interpretable as adjustment and achievement domains. An examination of the loadings of five status variables showed that the achievement domain is more status-relevant than the adjustment domain.

Zero-order correlations indicated that status consistency has low "relational fertility" in that it has few significant correlations with consequent variables. Moreover, status consistency generally failed to correlate with adjustment variables as predicted by theory. The one exception to this was an intelligence-free correlation of -0.14 with Status Anxiety.

Composite status has one intelligence-free correlation with an adjustment variable at the .01 level. This is with Status Anxiety ($r_0 = -0.27$). When intelligence is controlled, composite status has significant correlations with achievement but not adjustment indicants. These are +0.24 for occupational aspirations and +0.31 for educational aspirations.

Thus, the hypothesis that composite status is functionally important for the achievement but not the adjustment domain was verified. On the other hand, the expectation that status consistency would relate to the adjustment domain was not supported.

The Amplifier model hypothesis failed to hold for both the adjustment and the achievement domains. We concluded that status consistency

makes no functional contribution to either domain which cannot be accounted for in terms of the effects of composite status.

In general, all of the linear models suggested that composite status has more "relational fertility" and meets theoretical expectations more completely than status consistency. In short, linear models fail to indicate the functional importance of status consistency for the two domains of personality.

2. Nodular models. The status structure model generated three nodes interpreted as status structure groups and two nodes interpreted as boundaries. An analysis of the occupational and educational composition of the three status structure groups suggested a substantive interpretation of the groups.

Group I, lowest in composite status, was called a "grade school working class" group. Group II, midway in composite status, was called a "high school working class" group. Group III, highest in composite status, was called a "college professional and semi-professional" group.

The undesirability of reifying the groups, limitations of the interpretive data, and speculations based on "as if" assumptions were noted. We concluded that the status structure model is probably valid in that (1) it generates a heterogeneous status structure which exhibits substantive boundaries and (2) the obtained status structure groups are internally congruent and externally differentiated on criteria such that the resulting pattern is sociologically meaningful.

The personality concomitant model showed that most adjustment variables have isomorphic relationships with the status structure. The nodular structure for the adjustment indicants are far from equivalent in their structure. Nevertheless, they show a substantial degree of interpretive congruence both within and between the various indicants.

In general, the findings indicated that adjustment is lowest for group I (grade school working class), moderate for both boundaries, and highest for the upper half of group III (college professional and semi-professional class).

Evidence for group II (high school working class) is mixed. Two indicants (Integration and Status Anxiety) showed group II as having moderate adjustment, one indicant (Perceived Evaluations) showed group II to have high adjustment equivalent to group III, and one indicant (lack of Nervous Symptoms) showed group II as highest in adjustment.

A consistent non-isomorphic node at composite status group 5 was tentatively interpreted to indicate that incipient membership in group II is associated with a relative decrease in adjustment. This non-isomorphic node is most marked for lack of Nervous Symptoms.

Finally, results of two indicants (NS and PEO) showed that there is a relative increase in adjustment for the first boundary (between group I and group II) and a relative decrease in adjustment for the second boundary (between group II and group III).

These observations lead to the conclusion that personality adjustment, as articulated by the Nodular model, is not a simple function of either composite status or status consistency. Rather, the implication is that the individual's position in a status structure differentially defines the functional importance of the two variables in the antecedent system.

The nodular structure of level of occupational aspiration tended to follow the general pattern of the adjustment indicants.

In general, occupational aspiration was lowest for group I (grade school working class), moderate for both boundaries and group II (high school working class), and highest for the upper half of group III (college professional and semi-professional class). Moreover, there is a non-isomorphic dip in aspiration midway between the first boundary

and group II (precisely at the same point where adjustment dipped on all four adjustment indicants). Thus, the interpretation for the nodular structure of the achievement domain was generally congruent with the interpretations for the adjustment domain.

Monotonic relationships for most consequents were pronounced over the upper range of composite status. We concluded that the general convergences in nodular patterns for both domains suggests the possibility of developing a common interpretive framework for the articulation of these domains with a status structure.

Comparison and Evaluation of the Models

General Comments

Perhaps the single most important feature distinguishing Nodular models from linear models is the holistic or molar characteristics of Nodular models. This has advantages and disadvantages.

Among the disadvantages are problems associated with interpretation, integration, and quantitative summaries of the degree and significance of goodness of fit with hypotheses. Consequently, Nodular models rely heavily on the theoretical and interpretive insights of the investigator.

On the other hand, Nodular models offer several advantages over linear models. First, Nodular models have salvaged some of the theoretical importance of status consistency which tended to be obscured by linear models. Secondly, Nodular models have shown that the adjustment domain as well as the achievement domain is relevant for status-personality research. Third, the status structure model provides an analytical solution to boundary analysis which is theoretically satisfying.

Finally, there are three major consequences flowing from the holistic features of Nodular models. These consequences provide new theoretical and methodological frameworks for studying the articulation of stratification and personality systems.

First, Nodular models permit the articulation of personality concomitants with stratification systems (status structures) rather than with single stratification variables. Consequently, Nodular models suggest (and offer a technique for testing) hypotheses concerning the differential functional importance of composite status and status consistency at varying locations in a status structure. For example, Nodular models show (as the Amplifier model failed to show) that personality concomitants are not simple functions of either composite status or status consistency.

Second, Nodular models provide a systematic base for mapping several personality concomitants and comparing their patterns with a status structure. This allows the classification of indicants in the consequent system in terms of their nodular patterns. This also permits the interpretive synthesis of concomitants within and between domains. Thus, Nodular models allow the possibility of treating personality as a consequent system.

Finally, Nodular models are more flexible (and hence more general) in that they reveal both monotonic and non-monotonic relationships between composite status and personality indicants. Thus, Nodular models permit broader theoretical formulations of articulations between the antecedent and consequent systems.

In all, the Nodular models seem capable of generating and testing hypotheses which linear models are incapable of generating or testing.

General Criteria

In Chapter VI four criteria for comparing and evaluating the models were presented. The conclusions for each of these criteria are examined in this section.

1. Data requirements. All models, of course, require data which are as reliable and valid as the investigator is able to gather. Some linear models, such as those based on factor analysis, require a fairly large number of variables to be maximally efficient. Other linear models, such as bivariate correlations and the Amplifier model, require only a few variables. The same is true for the Nodular models.

However, linear models (with the exception of the Amplifier model) require data which are in an interval scale. On the other hand, the Amplifier and the Nodular models require only that the data be in an ordinal scale. Since most data in social psychological research meet only the requirements of an ordinal scale, the Amplifier and Nodular models seem superior in this respect.

As for the number of subjects, all of the linear models make moderate demands. However, the Nodular models are based on the status structure model, and its sample requirements may be considerable.

This may be illustrated by examining the parameter requirements of the status structure model when more than three status structure groups are hypothesized and when moderately strict reliability and sensitivity levels are imposed.

In Chapter VI the size of the sample (N) was given as a function of the number of observations for each median, or reliability (r), the sensitivity (s) of the model to detect real differences in the status structure, and the number of status structure groups hypothesized (g).

Sensitivity (s) was defined as the number of medians desired for each status structure group and each boundary. Thus, the formula was:

$$N = rs\,(2g-1)$$

As the formula shows, the number of status structure groups (g) hypothesized has almost twice as much weight as either reliability (r) or sensitivity (s) in determining the size of the sample (N). Thus, if g = 5, r = 100, and s = 3, then N = (100) (3) (9) = 2,700 subjects. Since the number of composite status groups (k) for the model is given by k = s(2g-1), k = (3) (9) = 27. Thus, 27 medians must be plotted.

We conclude that when fairly strict levels of sensitivity and reliability are set, and when the number of hypothesized status structure groups becomes larger than 3, the sample requirements of the Nodular models become substantial. Moreover, the number of medians that must be computed and plotted for each personality concomitant also increases.

2. Generality or flexibility. We have noted that Nodular models are capable of integrating multiple concepts and hypotheses. This seems to be true of only one other linear model, factor analysis. Further, Nodular models are able to indicate non-monotonic as well as monotonic relationships.

We conclude that the Nodular models have more generality or flexibility than most linear models in that Nodular models are capable of integrating multiple concepts and hypotheses, and are able to indicate both monotonic and non-monotonic relationships.

3. Information yield. Nodular models generate more information than the linear models. Indeed, they generate so much information that adequate interpretation and integration requires a broad theoretical framework and interpretive insights.

In short, Nodular models offer as much or perhaps more pay-off than any of the linear models typical of past research in the status-personality area. Perhaps most notable is that Nodular models appear to be the best (among the models examined) for generating new hypotheses and critical questions for future research. Hopefully, further work with Nodular models will provide new techniques for handling the detail and complexity of information.

4. Interpretability. Nodular models require complex interpretations based on judgments relatively unaided by quantitative statistical techniques. Further, Nodular models are capable of testing alternative rather than merely null hypotheses. In these aspects Nodular models differ from linear models with the exception of factor analysis.

In conclusion, Nodular models are relatively more difficult to interpret than linear models, but they are more flexible in their ability to test multiple hypotheses and to generate critical hypotheses and questions for future research.

5. Summary and conclusion. Nodular models make modest demands in terms of number of variables and scale characteristics. However, they require moderate to substantial numbers of subjects when fairly reasonable reliability and sensitivity levels are set.

Nodular models produce a highly efficient information yield in terms of their data and computational requirements. Indeed, were it not for high speed electronic computers, Nodular models give the "biggest bang-per-buck" even when compared to factor analysis. [1]

Finally, Nodular models require complex interpretations, broad theoretical frameworks, and considerable integrative insight.

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[1]However, factor analysis is basically a technique for data reduction. The Nodular models, on the other hand, generate data or information from only a few variables rather than reduce many variables to a few.

However, they lack convenient statistical summaries, although this may not be a serious limitation.

In all, the most distinctive feature of Nodular models is their ability to test and generate hypotheses which the linear models are incapable of testing or generating.

Significance of the Nodular Models

Nodular models, in the form of the status structure model, should be of value for social stratification theory and research. This model provides an analytical solution to the problem of boundary analysis which is theoretically relevant and empirically necessary but not sufficient. Of special importance is the model's ability to delineate substantive rather than merely nominal definitions of boundaries.

Thus, the status structure model should contribute to the solution of issues such as the status continuum versus categorical hypotheses, and the delineation of social "classes."

The main contributions of the Nodular models to stratification and personality research might be summarized by noting that Nodular models provide a more holistic approach. This is reflected in a systems formulation for both the antecedent and the consequent systems, and in the ability of Nodular models to provide broader theoretical and methodological frameworks for articulating the two systems.

Limitations and Future Research

Limitations of the Study

The modest size of the sample no doubt reduced the reliability and sensitivity of the Nodular models. Moreover, while the family was taken as the stratification unit, the units for the consequent system, personality, were the seventeen-year-old sons of these

families. The effects of stratification on the personalities of adults may be quite different from the effects we have observed. Thus, the findings should not be generalized to populations having different age, sex, and educational characteristics.

Further, the stratification system was based on county rather than community distributions in stratification variables. Consequently, the findings may differ from those obtained when other geographical or political units are used as the basis for delineating a stratification system.

Only a restricted sampling of the possible range of stratification and personality variables was included in the models. The performance of the models may be quite different when other domains of variables are selected.

Finally, substantive interpretations of the Nodular models are highly tentative and often quite frankly speculative. This is mainly due to the lack of additional data for evaluating and identifying the composition of status structure groups and the boundaries.

In short, any tendency to reify the status structure model should be avoided. Whether this model has delineated social "classes" requires more information than was available.

Future Research

Future work with the Nodular models should be aimed at redressing the limitations and imbalances in the present study. Especially important are future attempts to test and evaluate many of the assumptions we were forced to make. Specifically, three tasks need to be done.

First, the Nodular models should be applied in a wide variety of sample and data contexts. Particularly needed is a study of the status structure of a single coherent community. Such a study should attempt

to match the status structure against other stratification data such as differential patterns of social interaction, self-attribution and group identification, community consensus on stratification groupings within the community, group values, and the mobility history of families and other social units. Further, the Nodular models should be applied to adult samples using a variety of personality indicants.

Second, new theoretical frameworks should be developed which are based upon assumptions congruent with the assumptions and perspectives underlying the design of the Nodular models. One area of special interest is the integration of congruences in nodular structure for a variety of personality indicants. Another would be the development of more adequate formal and substantive taxonomies for handling the derivation, testing, and interpretation of hypotheses. Finally, the possibility of deriving a general theoretical formulation for the Nodular models needs to be explored.

Third, a more adequate conceptual analysis of the consequent system, personality, should be attempted. A satisfactory basis for understanding why some personality domains rather than others are status-relevant is clearly needed.

Conclusions

The Nodular models are modest attempts to deal more adequately with the complexities of relating social environments to human personalities.

These models were developed from a strategy which holds that in the sciences of human behavior the paths are not "out there" simply waiting to be discovered. We must construct our own paths, however imperfect and incomplete they may be. In our view these paths are

best mapped when attention is given to both conceptual and methodological problems at various levels of inquiry.

In short, the Nodular models seem promising. Whether their promise is illusory or real depends upon the use made of them by those who are willing to live with an inexact science, whose characteristic is that of an open system.

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APPENDIX A

INTERCORRELATION MATRICES AND INTER-QUARTILE RANGES

Table 25. Intercorrelation Matrix for the 16 P F Test Primary Factors (N = 432) [1]

Factors		Factors															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	(A)	--	00	-05	03	09	10	14	-02	03	-01	02	08	-02	04	-01	07
2	(B)		--	10	-04	17	26	10	-10	-02	-13	21	-05	04	04	06	-09
3	(C)			--	-04	-09	03	19	-07	-17	-13	04	-27	-04	03	28	-44
4	(E)				--	16	-03	12	03	03	06	12	-25	00	02	-06	05
5	(F)					--	02	06	-02	16	-02	06	08	06	-02	-12	25
6	(G)						--	31	-08	12	-20	16	-15	-03	10	25	-12
7	(H)							--	-12	-05	-08	17	-34	02	00	33	-29
8	(I)								--	05	16	-11	14	07	05	-18	20
9	(L)									--	02	07	20	09	12	-05	19
10	(M)										--	-11	01	06	01	-18	16
11	(N)											--	-11	10	06	10	-03
12	(O)												--	00	01	-40	42
13	(Q_1)													--	08	-01	05
14	(Q_2)														--	04	00
15	(Q_3)															--	-46
16	(Q_4)																--

[1]See Table 4 in Chapter VII. All correlations are positive unless indicated.

Table 26. Intercorrelation Matrix for the Home Quality Items (N=416)[1]

Items	Items 1	2	3	4	5	6
1 House ownership	--	01	18	19	04	22
2 House construction		--	08	01	11	06
3 Room-Person Ratio			--	10	-04	14
4 Running water				--	-04	24
5 Power washing facilities					--	-03
6 Telephone						--

[1]See Table 5 in Chapter VII. All correlations are positive unless indicated.

Table 27. Intercorrelation Matrix for Six Status Variables (N = 339)[1]

Variables		Variables					
		1	2	3	4	5	6
1	RL	--	80	25	28	20	16
2	RS		--	22	24	25	16
3	FO (Duncan)			--	40	22	63
4	PE				--	23	44
5	HQ					--	26
6	FO (NORC)						--

[1]See Table 6 in Chapter VII for variable identification. All correlations are positive.

Table 28. Intercorrelation Matrix for the Status Anxiety Items (N = 409)[1]

	Items					
Items	2	3	4	5	6	7
1	06	04	-03	06	16	03
2		03	32	13	14	04
3			23	18	21	22
4				40	15	15
5					11	20
6						07

[1]See Table 9 in Chapter VII for item content. All correlations are positive unless indicated.

Table 29. Intercorrelation Matrix for the Lack of Nervous Symptoms Items (N = 430) [1]

	Items[2]													
Items	2	15	3	4	5	12	6	13	14	7	8	9	10	11
1	26	13	21	14	20	12	15	15	17	23	16	22	14	12
2		10	26	03	17	06	18	08	06	18	13	15	14	16
15			10	14	04	21	12	21	17	17	13	14	19	05
3				12	31	09	24	19	08	22	22	17	10	17
4					16	08	05	15	03	20	13	17	25	14
5						15	25	14	12	22	18	22	18	19
12							36	27	22	17	18	20	09	19
6								31	17	32	28	27	10	12
13									18	14	21	19	14	16
14										16	24	23	17	19
7											23	46	18	13
8												27	12	12
9													18	17
10														25

[1]See Table 10 in Chapter VII for a description of the items. All correlations are positive.

[2]These item numbers correspond to the item numbers in Table 10, where they were rearranged to aid interpretation.

Table 30. Intercorrelation Matrix for the Perceived Evaluation-by-Others Items (N = 433) [1]

	Items[2]													
Items	2	3	10	4	5	6	11	12	7	13	14	8	9	15
1	14	10	11	20	08	16	10	07	11	18	-04	17	12	02
2		32	06	27	20	21	15	15	33	15	14	16	12	06
3			18	28	12	23	29	26	25	17	18	18	10	12
10				18	23	16	31	19	13	23	13	06	05	14
4					23	40	27	11	30	22	24	34	18	08
5						28	22	15	18	34	18	23	13	13
6							24	14	24	14	21	24	09	07
11								26	27	28	29	21	22	22
12									23	28	30	12	14	18
7										30	28	24	22	14
13											29	27	10	23
14												15	10	14
8													25	03
9														12

[1] See Table 11 in Chapter VII for a description of the items. All correlations are positive unless indicated.

[2] These item numbers correspond to the item numbers in Table 11, where they were rearranged to aid interpretation.

Table 31. Intercorrelation Matrix for 33 Experimentally Independent Variables (N = 339)[1]

	Variables[2]																
	28	25	26	27	23	8	2	20	3	1	5	18	24	6	19	13	12
(10)	12	08	03	02	14	-19	30	11	10	10	08	04	08	06	-04	-07	13
(28)		80	25	28	20	-17	10	24	07	04	04	04	04	02	07	02	-03
(25)			22	24	25	-15	11	04	10	04	02	06	06	05	03	-01	00
(26)				40	21	-17	05	16	-07	-06	05	09	16	-06	14	04	10
(27)					23	-22	18	18	04	14	13	10	14	12	04	-04	04
(23)						-17	15	22	06	14	09	03	11	03	05	-03	04
(08)							-30	-15	-14	-24	-24	05	-02	-14	-10	10	-07
(02)								13	47	44	44	-03	20	33	-05	-05	29
(20)									09	06	09	-02	00	03	-01	06	-04
(03)										47	30	-11	07	41	-05	-10	06
(01)											42	-08	09	47	-05	-23	14
(05)												-07	05	29	24	-11	15
(18)													-01	-04	06	12	12
(24)														11	00	16	25
(06)															-04	-11	02
(19)																16	02
(13)																	03
(12)																	
(07)																	
(11)																	
(09)																	
(14)																	
(21)																	
(15)																	
(17)																	
(04)																	
(16)																	
(32)																	
(33)																	
(30)																	
(31)																	
(22)																	

[1]See Table 13 in Chapter VIII for a description of the variables. All correlations are positive unless indicated.

[2]These variable numbers correspond to the variable numbers in Table 13, where they were rearranged to aid interpretation.

7	11	9	14	21	15	17	4	16	32	33	30	31	22	29
23	-13	-06	-18	16	-13	-11	18	17	09	12	05	12	04	14
14	-12	-06	07	20	04	-03	06	01	17	22	19	22	04	15
15	-11	-09	06	11	04	-08	06	-01	17	15	15	19	05	11
12	-06	-05	03	15	10	03	-10	04	22	28	21	32	04	14
10	-05	-02	03	19	14	07	03	-05	32	37	25	36	05	25
13	-05	-10	02	17	08	04	06	01	20	20	14	23	01	13
-27	00	04	-01	02	-02	-02	-18	-05	-02	-11	-06	-04	13	-15
45	-18	-18	-15	08	-06	-08	36	-06	27	26	21	29	09	43
08	-11	-07	-03	19	05	02	05	04	10	09	07	06	-03	04
21	-19	-28	-14	01	-12	-11	34	00	17	08	09	10	-02	19
29	-19	-20	-13	00	-12	-01	46	-04	10	09	08	10	02	20
35	-11	-23	02	08	-05	-04	42	05	04	09	01	18	-02	09
12	-05	00	-02	-01	00	02	-02	-06	10	09	00	08	10	03
11	-08	-07	-12	19	00	04	05	-06	38	34	33	11	05	39
19	-07	-17	-15	06	-03	-01	31	01	20	14	09	06	04	18
12	02	06	04	15	03	04	-04	14	03	16	07	11	10	01
07	-04	18	-04	06	09	-05	-13	-06	08	05	07	04	15	-01
33	-07	11	-15	14	-05	13	26	-04	20	20	15	20	10	24
	-12	-07	-02	16	-03	-05	34	-05	19	27	11	22	13	15
		07	13	-12	10	09	-21	-02	-01	-02	-05	04	00	-11
			00	06	12	17	-08	-08	-11	-05	-11	-10	02	-05
				-06	08	00	-14	01	-01	-06	-11	-05	-07	-08
					04	02	06	-05	10	15	09	14	02	08
						06	-06	-08	08	13	-01	03	09	03
							06	-05	11	14	07	06	06	12
								-04	12	11	07	07	-02	14
									-09	01	-01	-04	02	-13
										62	44	47	17	51
											41	48	28	53
												29	17	49
													34	29
														06

Table 32. Semi-Interquartile Range (Q) for Each of the Nodular Medians [1]

Composite Status Group	Semi-Interquartile Range (Q)[2]					
	SC_1	IA $\bar{X}$	SA	NS	PEO	OAS
(01)	4.2	4.6	6.2	6.2	6.7	5.8
(02)	5.0	4.6	6.2	5.0	5.2	7.4
(03)	4.8	4.6	5.0	7.2	9.0	4.6
(04)	6.0	4.1	3.6	5.6	7.4	5.0
(05)	3.1	5.2	6.2	8.2	9.9	5.6
(06)	4.2	5.1	6.6	6.8	7.3	7.0
(07)	4.2	6.6	5.5	7.2	6.7	5.4
(08)	4.5	4.8	6.0	9.0	9.2	7.2
(09)	4.4	4.5	4.2	8.4	8.0	5.0
(10)	3.2	5.6	4.5	5.2	6.2	4.8

[1]See Tables 19, 23, and 24 in Chapter IX.

[2]The semi-interquartile range (Q) is the appropriate measure of dispersion for the median. Q is computed from the first quartile (Q_1) and the third quartile (Q_3), and represents one-half of the range between Q_1 and Q_3 (Edwards, 1954, p. 47): $Q = \frac{Q_3 - Q_1}{2}$.

APPENDIX B

FORTRAN PROGRAM FOR COMPUTING STATUS CONSISTENCY AND COMPOSITE STATUS

Proof of $S_x^2 = k^2 S_{\bar{x}}^2$

FORTRAN Program for the Computation of Status Consistency and Composite Status

This program was written by Mary J. Beech of the Computer Institute for Social Science Research, Michigan State University. Each statement is punched on a separate IBM card, beginning with column 7.[1] Listing numbers are punched on column 5 and statement sequence numbers on columns 78-79.

Columns and Statements

5	7-72	78
	PRØGRAM STATUS	01
	DIMENSIØN L 7 (10), XI (500)	02
	READ 1, J, N	03
1	FØRMAT (I2, I3)	04
	READ 2, (L 7 (I1), I1 = 1, 10)	05
2	FØRMAT (10 A 8)	06
	DØ 6 KARD = 1, N	07
	READ L 7, IDENT, (XI (I2), I2 = 1, J)	08
	SUM = 0	09
	TOTAL = 0	10
	F J = J	11
	DØ 3 I1 = 1, J	12
3	SUM = SUM + XI (I2)	13
	XMEAN = SUM / FJ	14
	DØ 4 I2 = 1, J	15
	XI (I2) = XI (I2) - XMEAN	16
	XI (I2) = XI (I2) * XI (I2)	17
4	TØTAL = TØTAL + XI (I2)	18
	RTØT = SQRTF (TØTAL)	19
	SC = 80.0 - RTØT	20
	PRINT 5, IDENT, XMEAN, SC	21
5	FØRMAT (1 H0, I3, 5X, 6 HMEAN_ =, F 8.3, 5X, 4 HSC_ =, F 8.3)	22
6	CØNTINUE	23
	END	24
	END	25

[1] Ø = the letter O, _ indicates where one space must occur.

Proof of $S_x^2 = k^2 S_{\bar{x}}^2$

Where: S_x^2 = the variance of the total score of an indicant where the total score is the sum of item scores.
k = the number of items.
$S_{\bar{x}}^2$ = the variance of the mean of k item scores.

Given (Edwards, 1954, p. 40):

(1) $$S_x^2 = \frac{\Sigma(X_t - \bar{X}_t)^2}{N-1}$$

where: N = number of persons.
X_t = total score on the indicant for a person.
$\bar{X}_t$ = mean of all total scores for N persons.

and: (2) $$S_{\bar{x}}^2 = \frac{\Sigma(\bar{X}_k - M_{\bar{x}k})^2}{N-1}$$

where: $\bar{X}_k$ = mean of k item scores for a person.
$M_{\bar{x}k}$ = the mean of all $\bar{X}_k$ scores for N persons, or

$$M_{\bar{x}k} = \frac{\Sigma \bar{X}_k}{N}$$

By definition:

(3) $$X_t = \sum_1^k X, \text{ where X is an item score.}$$

(4) $$X_t = k\bar{X}_k, \text{ since } \bar{X}_k = \frac{\sum_1^k X}{k} = \frac{X_t}{k}$$

(5) $$\bar{X}_t = \frac{\Sigma X_t}{N} = \frac{\Sigma k\bar{X}_k}{N}$$

Substituting (4) and (5) in (1):

$$(6)\quad S_x^2 = \frac{\Sigma \left[k\bar{X}_k - \frac{\Sigma\, k\bar{X}_k}{N} \right]^2}{N - 1}$$

$$(7)\quad S_x^2 = \frac{\Sigma \left[(k\bar{X}_k)^2 - 2(k\bar{X}_k) \frac{\Sigma\, k\bar{X}_k}{N} + \frac{(\Sigma\, k\bar{X}_k)^2}{N^2} \right]}{N - 1}$$

$$(8)\quad S_x^2 = \frac{\Sigma \left[k^2\bar{X}_k^2 - \frac{k^2\, 2\, \Sigma\, \bar{X}_k^2}{N} + \frac{k^2\, (\Sigma\, \bar{X}_k)^2}{N^2} \right]}{N - 1}$$

$$(9)\quad S_x^2 = \frac{k^2\, \Sigma \left[\bar{X}_k^2 - \frac{2\, \Sigma\, \bar{X}_k^2}{N} + \frac{(\Sigma\, \bar{X}_k)^2}{N^2} \right]}{N - 1}$$

$$(10)\quad S_x^2 = \frac{k^2\, \Sigma \left[\bar{X}_k - \frac{\Sigma\, \bar{X}_k}{N} \right]^2}{N - 1}$$

Therefore, by (2): $S_x^2 = k^2\, S_{\bar{x}}^2$ Q.E.D.