Various studies have been conducted to inductively locate the aspects of occupation in one generation which are transmitted to the next generation as found in corresponding aspects of their labor force aspirations and entry levels. This study restricted attention to intergenerational covariation in components of roles rather than to the structural or interpersonal mechanisms which might explain transmission. Occupations were conceptualized and measured on the basis of indicators for role requirements, content, and rewards. (The author states that role transmission presumes covariation between the requisites, routines, and rewards of parental occupations and the corresponding components of offspring aspirations and eventual labor force occupations.) Data were collected from a national sample of male members of the civilian labor force and from a sample of Michigan high school males. Canonical correlation analysis was used as a multivariate strategy for partitioning the covariance between two sets of scores into orthogonal pairs of linear combinations (dimensions). Canonical correlation analyses for two role relationships, involving parent occupation, early career occupation and late adolescent occupational aspirations, show that (1) role transmission occurs for a multiplicity of occupational characteristics which span requirements, content, and rewards or roles; (2) that the two role relationships are not isomorphic in their structure; (3) that there is support for recent arguments that complexity of roles is a key organizing feature of role transmission processes; and (4) that there is mixed support for recent research on patterns of intergenerational occupational movement. (Author/3d)
Acknowledgements: This research was supported by a grant from the Employment and Training Administration of the U.S. Department of Labor (DHEW-76-76-65). I wish to acknowledge Archibald O. Haller and David L. Featherman for their comments, and the Center for Demography and Ecology at the University of Wisconsin-Madison for computing assistance. The opinions expressed are solely those of the author.

role transmission occurs for a multiplicity of occupational role positions which span the requirements, content and rewards of roles; (2) the role relationships are not isomorphic in their structure; (3) support for recent arguments that complexity of roles is a key organizing feature of role transmission processes; (4) mixed support for recent research on patterns of intergenerational occupational movement.
aspects of stratification—ear in Marx and Weber through Weber.

...and Karsten—have been concerned with inequalities in occupational 
positions or occupations. Davis and Moore (1945) and Duncan (1968) 
address the persistence of, recruitment to, and the allocation of 
power to social positions or roles. The larger portion of research on 
position or roles as the unit of analysis in studying 
the intergenerational transmission of inequalities (Blau and Duncan, 1967; 

The unit of analysis for these theoretical approaches is the rank or 
status of roles or individuals. Occupation as a performed social role is 
a "molecular" subcomponent of individual or positional rank. It is usually 
viewed as the best single indicator of class or overall economic position.

One important consequence of this stance has been to focus most of 
the attention on overall characteristic aspects of occupational roles 
in socioeconomic, prestige, manual-nonmanual). While these approaches have 
been fruitful, the question remains: what is it about occupations that 
constitutes intergenerational role transmission.

Where others have taken occupation, particularly in its socioeconomic 
role, as a molecular component of a larger positional rank, this research 
viewed occupation as the molar phenomenon and investigates its molecular 
subcomponents. Under an organizing conceptualization of occupation, the 
analytical below inductively locate the aspects of occupation in one genera-
tion which are transmitted to the next generation as found in corresponding 
properties of their labor force aspirations and entry levels. The 
implications for current research that are addressed include (a) attempting 
to reproduce Mortimer's (1974) findings on patterns of intergenerational 
occupational movement; (b) providing new empirical evidence on the
In the smallest-space array, one of the axes was labelled "authoritarian-entrepreneurial" and the other was left unlabelled. Instead,
a final axis--aligned to the orthogonal axis--was imposed on the space. 

Individuals falling on one side of this inserted axis were labelled as the region of "intrinsic rewards" while the remainder of the group fell in the "extrinsic rewards" region. To interpret the dimensions Mortimer used occupation-related variables such as autonomy, money, security, and helping people versus work with data or things (Mortimer, 1976).

Two points should be noted. First, one of the dimensions that was used to order the occupational groups was left uninterpreted. Rather, Mortimer drew upon the orthogonal axis and the oblique "intrinsic-extrinsic reward" axis as a basis for interpretations. Second, several of the "occupational categories" are not homogeneous occupational categories but class-of-worker or industry categories with a common functional focus (e.g., "self-employed business who work with people"). Given these categories, along with the ambiguities in the interpretation of dimensions, it is not clear whether the reported attributes of work roles are the ones which come into play in structuring father-son interaction. A more precise test of the hypothesis would utilize a more detailed occupational classification system, examine additional work role attributes, and utilize a sample having greater variation in father's occupations and son's career choices. It might also examine sons' labor force entry occupations to see if the same pattern of the transmission govern actual role movements (compared to career choices).

A third relevant theme in the literature suggests that complexity, both internal (cognitive) and external (substantive) to self, is a central aspect of certain role processes. This includes the way "status" is intergenerationally transmitted (Spaeth, 1976; Gaertner, 1977), the ways...
Johari, Jual and tt,.,

w-,;ys

For example, Spaeth (1976:128) argues:

... parental exposure to complex environmental settings increases their ability to cope with complexity. This aids the cognitive socialization of their children by increasing parental skills and adding to the parental stock of knowledge and other resources. . . . According to the view advanced here, status is transferred through transmission of the capacity to cope with cognitive complexity. This capability is, in effect, an intergenerational medium of exchange. By focusing attention on what is transmitted, the complexity gains considerable interpretive advantages compared to the statuses themselves.

Thus for Spaeth, the currency of "socioeconomic" intergenerational transmission is in the capacity to cope with cognitive complexity.

To summarize: there is reason to believe that the fundamental hierarchical dimension underlying occupational roles across generations is a socioeconomic one (Hauser and Featherman, 1977:34-50), yet the detailed characteristics of roles that might constitute the dimension are not well understood. In one of the few attempts to expand this understanding (Bertillon, 1977) several additional work role attributes were hypothesized to underlie role transmission but less than complete confidence could be placed in the findings. Finally, there are several arguments that point to the complexity of roles as a source of characteristics that might define intergenerational transmission.

AN ORGANIZING CONCEPTION AND MEASURES FOR OCCUPATION

It is convenient to think of occupations as social roles (Reiss, et al, 1961; Duncan, 1968; Duncan, Featherman and Duncan, 1972; Hall, 1975). Behavior in a role presupposes recruitment or allocation to the role and having met the requirements for entry. Occupational role requirements can
requirements here are most similar to what Lange terms the "principal bases of allocation" for the distribution of personnel to roles in a division of labor.

A second partition of roles refers to the enactment of the content of the role: the nature of the work, how it is done, and under what conditions. Role enactment refers to those variable features of activities and routines that are characteristic of occupations. An example of a classification system for routines and activities is the Dictionary of Occupational Titles (1967).

A third organizing feature of occupational roles, sanctions, refer to those rewards and punishments accruing to the incumbent as a function of: (a) directly residing in the role (e.g., the median earnings of physicians relative to elementary school teachers); and (b) the fulfillment or nonfulfillment of expectations with respect to performance in the occupation. The various rewards to role incumbents are often organized in terms of their "intrinsic" and "extrinsic" qualities (Herzberg, Mausner, and Snyderman, 1959; Kohn, 1969; Kalleberg, 1977).

Role transmission presumes covariation between the requisites, routines, and rewards of parental occupations and the corresponding components of offspring aspirations and eventual labor force occupations.

Several criteria were considered in selecting indicators for the role concepts, including their importance in previous research, attempts to span the range of requirements, content, and rewards, and choosing indicators which could be generated readily for detailed occupation classification systems. Drawing from existing research (Temme, 1975; Kohn and Schooler,
The general design of the research included developing a matrix of
three-digit census occupations scored on each of the eleven indicators. After occupations of interest (father's, 
offspring aspirations, and early career) were coded in census categories
for data sources, the appropriate vectors of scores were merged with the
individual data records for substantive analyses. The measurement ideal
would be to ascertain the indicator information directly from individuals
with regard to their particular jobs. In the absence of such information,
these scores allow a pragmatic beginning with a level of precision com-
parable to previous research (Mortimer, 1974; Temme, 1975; Hauser and
Flatherman, 1977).

For the indicators based on published Bureau of Census sources the
following information was generated for each of the 295, 1960 and 595, 1970

<table>
<thead>
<tr>
<th>INDICATORS</th>
<th>SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>emotional attainment</td>
<td>published, U.S. Census</td>
</tr>
<tr>
<td>educational preparation</td>
<td>(Temme, 1975)</td>
</tr>
<tr>
<td>racial composition</td>
<td>published, U.S. Census</td>
</tr>
<tr>
<td>sex composition</td>
<td>(published, U.S. Census)</td>
</tr>
<tr>
<td>social class</td>
<td>published, U.S. Census</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INDICATORS</th>
<th>SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>functional involvement of people</td>
<td>(published, U.S. Census)</td>
</tr>
<tr>
<td>functional involvement of things</td>
<td>(Temme, 1975)</td>
</tr>
<tr>
<td>substantive complexity</td>
<td>(Temme, 1975)</td>
</tr>
<tr>
<td>modernization</td>
<td>(see below)</td>
</tr>
<tr>
<td>influence of supervision</td>
<td>(see below)</td>
</tr>
<tr>
<td>encouragement</td>
<td>(see below)</td>
</tr>
<tr>
<td>employment security</td>
<td>(published, U.S. Census)</td>
</tr>
<tr>
<td>employment security</td>
<td>(published, U.S. Census)</td>
</tr>
</tbody>
</table>
are not included in the discussion of the Relationship of Occupational hierarchy to the Occupational Job Family. In our earlier analysis, we have divided the job family into two types: (a) those with a detailed occupational hierarchy and (b) those with a less detailed hierarchy. The measurement of job family was based on the number of categories in the hierarchy. Since the job family is not a variable in the analysis, the detailed procedure is not used. However, a weighted average of the detailed occupational hierarchy (which includes several hundred O*NET jobs) is used. Procedures departing from these assumptions are either in number of categories or weighting of estimates, which are not the amounts of within-category variation into the hierarchy.

For example, the O*NET has recently used this procedure in providing estimates for specific vocational preparation, functional field (data, people, things), and the overall substantive complexity of work, for detailed 1960 and 1970 census categories using the April 1971 Current Population Survey. Further details of the estimation procedure can be found in Tomme (1971:64-66).
11. The extent of routinization, a variable that reflects a degree of regularity in the performance of tasks, was measured using a level of complexity in the tasks performed. This level of complexity was related to the concept of routinization by Eisenberger et al. (1986). Given this relationship, it was hypothesized that higher levels of routinization would be associated with higher levels of predictability and control over the work environment. Eisenberger et al. (1986) argued that routinization is indicated by a substantive complexity of the work environment, which can be used as an indicator of such. This was supported through a more valid prediction procedure, and the results were encouraging.

C. A. Streufert (1979) noted that routinization, along with other variables, shows upon the work of Schrm (1969:185-196) and Blau (1964:21-23, 1970). From their level of routinization and supervision, a number of variables to be the key aspects of work, along with its substantive complexity, that determine the overall levels of autonomy in the work.

In this study, used in developing estimates for these variables is similar to the tapping and weighting techniques described by Timme (1977) and others. Each of the dichotomously scored LAT items, when weighted and summed into detailed census categories, is represented by a score ranging from 0 to 1. The two indicators for routinization and the two indicators for closeness of supervision were reflected (such that high numbers were represented freedom from routinization and close supervision respectively) and combined in an unweighted sum for each of the two variables. Other analyses (Roper, 1977:105-120) indicate that this scaling
First, the education of the father of the respondent was recorded in terms of highest degree, with certain categories. These categories include those with a high school degree or above, technical school, and vocational training. These data were obtained in the '68-69 and '69-70 censuses. The education level of the respondent's father is used as an indicator of the respondent's occupational status, since the level of education of the respondent is a proxy for the respondent's first full-time occupation after the age of 16. First occupation was used because it is consistent with the variable used by Martinez.

Data collected on these occupations (1977) show that first occupation maximizes the respondent's occupation in the occupational variables compared. Since occupation, as well as measures of the occupation between ages 16 and 21, are measured in a self-reported assessment, many occupations show generally higher or lower weekly pay rates compared to first occupation.

Past the father's occupation-sect career choice relationship and the effect of personal factors, all variables enrolled in high schools in Lebanon.

The data are collected in the '68-69 (Mills and Miller, 1971). Of the 442 respondents, 80 percent reported their father's occupation and articulated a realistic vocational education in sufficient detail to permit coding in 1968. Discrimination categories were classified into occupational role variables.

General association analysis (linear, 1971-1979) is used as a method of strategy for examining the covariance between two sets of
or the orthogonal pairs of linear covariates (dimensions). This
procedure offsets comparability with this topic (Blau and
Pitsouly, 1977; Kintity and Nodge, 1

RESULTS

The means, standard deviations, and intergenerational zero-order

Table 1. The VCG scores are based on 595 census occupation-industry categories

To assess the underlying axes between the two sets of role character-

To assess the underlying axes between the two sets of role character-

Table 2. The coefficients measure the total association

between variable and variate, including "direct effect" and the input a

variable has to the linear combination as a function of its association

with other variables in the set. Substantive significance will be attrib-

uted to a variable if it holds more than 15 or 20 percent of its variance
in common with a variate \( r = .4 \) which far exceeds statistical significance for these samples.

In considering the father's occupation-specific education and income, several features of an occupation relationship, several features of a two corroborate existing research while others extend it. First, as implied in Duncan's scale (1961) and reproduced a number of times since its conception using more aggregated analyses (Blau and Duncan, 1967; Klatzky and Hodge, 1971; Featherman, Jones and Hauser, 1975), "education" and "income," generically speaking, provide the fundamental ingredients of the major axis for transmission. Seventy percent of the variance in father's occupation-specific education and 72 percent for median income is held in common with father's first canonical variate while for son's first variate the common variance is 75 percent for median education and 72.6 percent for median income. Inasmuch as stratification research includes these components, it cannot be faulted by the molecular outcomes reported here.

The first canonical dimension is also defined by the content of work. For father, three additional variables have a nontrivial portion of their variance in common with the first variate: substantive complexity of work (48.6%), degree of involvement with people (48.9%), and involvement with things (35.9%). The first variate for son's also draws on the same variables (substantive complexity of work--65.4%; involvement with people--37.3%; but only marginally upon involvement with things--15.4%) and additionally upon involvement with data (52.3%), specific vocational preparation (33.6%), and freedom from close supervision (21.3%). If this first dimension is taken as a fundamentally "socioeconomic" then these results corroborate existing research in the importance attributed to occupation-specific education and earnings. They extend previous research in
empirically demonstrating that other characteristics of occupations, particularly certain features of the content of work, are also important in referencing the same basic dimension.

A second major feature is that the content of work, freedom from close supervision, and freedom from routinization. This pattern is more pronounced for fathers than for sons. As with the first pair of variates, it is roughly the case that the components of father's occupation that define transmission are the same ones that sons experience as a function of transmission.

It might be argued that the first dimension refers to status transmission while the second dimension references a different type of non-status role transmission. In this respect, these findings corroborate and extend our knowledge on the constitution of status transmission, and provide some initial evidence on the constitution of a second "non-status" dimension, that largely references a transmission of the content of work. On the other hand, it might be argued that both pairs of variates are different manifestations of a singular socioeconomic transmission. One obtains an "artificial" orthogonalization of the two dimensions with canonical correlation analysis. Resolution of these interpretations requires the estimation of more complex models, beyond the scope of this paper. Nonetheless, these results permit statements about the relative importance of role characteristics in intergenerational transmission irrespective of how the reference dimensions stand theoretically in relation to one another.
The corresponding correlations for the father's occupation-son's occupational aspiration relationship can be found in the lower panel of Table 2. Compared to the father's occupation-son's early career occupation relationship there are some similarities in the first dimension but few in the second pair. The education-health earnings of contrast, most son's aspirations (for father: median education, 47.2%; median earnings, 53.7%; and for son: median education, 45.4%; median earnings, 59.6%).

Similar to UCG sons, other features of work roles also index the first dimension, including involvement with people and things, substantive complexity of work and race composition. On the other hand, the second canonical dimension in father's occupation-son's occupational aspiration relationship is only minimally referenced by the role characteristics measured here.

The main line of correspondence between the two intergenerational role relationships is the first dimension—in the prominence of occupation-specific earnings and education as definers of transmission and additionally, in the general importance of other role characteristics indexing the context of work. Hence, there is some reason to believe the two role relationships may be governed by a very similar primary dimension both in its size and constitution. On the other hand, there is no indication of similar types of role transmission for the second pairs of variates. This suggests the features of roles relevant in describing intergenerational transmission to aspirations are only in part important in the same ways and to the same extent as they are in intergenerational transmission to actual labor force activity.
These results support arguments that cognitive complexity of environments is one of the major dimensions underlying the socioeconomic achievement process (Spaeth, 1976). A precise test of Spaeth's hypotheses would require measures of the capacity to cope with cognitive complexity as well as the complexity of (work) environments for parents and offspring. These data include the latter kind of measures for occupation but not the former. However, these continuously show a transmission of complex occupational environments: a number of components of roles in one generation, which are closely related to the complexity of environments (levels of involvement with data and things, substantive complexity of work, freedom from close supervision and routinization, and race composition of the occupation) are traceable to some of the same components of occupational roles in the previous generation.7

Perhaps a stronger statement, one that modifies and extends Spaeth's hypotheses is in order. Spaeth (1976) conceptualizes complexity as a variate aspect of environment that is highly colinear and overshadowed by the socioeconomic status of the occupation. If one believes that only the first dimension is "socioeconomic," then these findings provide firm reason to believe that hierarchical components of complexity are an intricate part of the socioeconomic transmission along the first axis. Moreover, other aspects of roles, "complexity" of work in other senses of the term, appear to be transmitted through the second orthogonal axis. On the other hand, if it is believed that both the first and second dimensions constitute "socioeconomic" status transmission, then even greater support is offered for the complexity thesis as the second dimension is primarily defined by characteristics indicating the content complexity of roles (see Kohn and Schooler, 1978). Yet these results are somewhat at variance with Spaeth's
by my emphasis on cognitive complexity, compared to an emphasis on complexity in a multi-faceted construct, having cognitive and non-cognitive manifestations.

Finally, how well do these outcomes reproduce Mortimer's (1974) findings? The sample differences preclude precise comparisons. Her Michigan sample has restricted socio-economic origins for fathers, uses a smaller male population and assesses career choices when the respondents were college seniors. The OCG and Lemaee County data have much greater variation in occupations, and assess aspirations when the respondents were high school seniors.

If Mortimer's findings are characteristic of the covariance in role relationships across generations then the occupation variables underlying her reported dimensions should play a major role in referencing the canonical variates. The variables for levels of involvement with data, people and things circumscribe her discussion of the functional foci of work. To define which variables might reference the bureaucratic-entrepreneurial distinction measures of association between the role variables for father's occupation (OCG) and a dummy variable for father's class-of-worker (civilian-government employer versus self-employed) were examined. Only three (level of involvement with data, freedom from close supervision, and freedom from routinization) hold even a modest association with this variable (i.e., $r = .40-.52$). The "intrinsic-extrinsic" rewards axis used by Mortimer should minimally encompass the role characteristics of median earnings, employment security and possibly substantive complexity of work. This set of variables (listed in Table 3) should be important in role transmission in order to corroborate Mortimer's (1974) findings.
Three canonical variates are ambiguous if compared to Mortimer's dimensions (due to the oblique reward axis that was used), a more liberal criterion was adopted: the sum total of common variance between an occupation variable and the first three canonical variates is not total. Table 4 provides a summary of predicted and obtained outcomes.

For the remaining variables, the variables important...

Mortimer's scheme in fact play that role in varying degrees (levels of involvement with people and things, median earnings, substantive complexity, and employment security). Important though, the three occupation variables that most closely reference a bureaucratic-entrepreneurial distinction have little of their variance in common with the first three canonical variates. This is the case for father and for son. Additionally, median education (along with specific vocational preparation, race composition, and uncertainty if son's job activity is considered)--not mentioned in Mortimer's discussion, although perhaps implicit in her mention of social status--are important role in referencing intergenerational occupational movement. These findings question the efficacy of the "bureaucratic-entrepreneurial" distinction and the wisdom of excluding role requirements (median education). As one moves to a larger population the picture of covariation across generations changes. Thus, our studies concur in the importance of rewards and certain of the content variables as they form a basis for father-son interaction. Our studies disagree on the importance of other work characteristics in intergenerational role transmission.

For son's actual labor force activity in relation to father's occupation, a different set of conclusions is appropriate. With the possible exception of involvement with things, the variables discussed by Mortimer
all have modest to high portions of their variance in common with the first three variates for both father and son. This is not to endorse the "bureaucratic-entrepreneurial distinction" for the disaggregated components are likely more informative. In contrast, if roles bear modest to high importance in defining transmission, they are suggested that occupational roles should be disaggregated into their constituent components to elucidate certain role processes. Overall aggregate or "molar" characterizations, while fruitful depictions of general features of roles such as their desirability-resources (socioeconomic status) or work focus (manual-nonmanual) for certain types of research questions, leave unclear how detailed components of roles come into play.

Several conclusions are supported. First, transmission between father's occupation and son's early career occupation, when cast in a statistical frame of linear orthogonal combinations, appears as a multiplicity of role characteristics in two dimensions. The first closely reproduces "socioeconomic" status transmission in its size and makeup, and spans the requisite, content, and reward features of roles. A second dimension, socioeconomic or otherwise depending on one's theoretical predilection, depicts another line of transmission centering around work role content, particularly its complexity. Second, an alternate role relationship (aspirations) shows only partial isomorphism to the former. Third, these outcomes support recent arguments about the complexity of roles and environments as organizing features of role processes (Spaeth, 1976) but
Finally, mixed results in the research... it is questionable, as is the fruitfulness of the "homo-economico-entrepreneurial" distinction.

Several questions both note the limitations of this research and portend a future agenda. What constitutes sufficient detail and inclusiveness of role characteristics? Most studies, like this one, use more ad hoc than theoretically motivated decision rules. Which non-orthogonal dimensionalization best describes the organization of occupational roles? Estimation is in progress with more flexible multivariate procedures yet it perhaps only begs the larger task: the need for comprehensive theoretical statements about the molecular social organization of occupational roles.
This distinction is not clear in Mortimer's work; nor is it obvious how the "third axis" was superimposed on the two-dimensional array. For example, professors and teachers are placed in the group that works with people, falling outside of the group which works with "people and the communication of ideas" (see Mortimer, Figure 1, 1974:1288).

For related conceptual schemes of occupations, see Temme (1975), Eielby and Kalleberg (1975), and Reiss, et al. (1961).

This includes vocational education, apprenticeship training, in-plant training, on-the-job training, as well as essential experience in other jobs. The SVP estimates range from 1 (short demonstration only) to 9 (over 10 years).

The specific indicators were taken from the DOT "temperament" variables (1965; Volume II, 649-656). For routinization they were:

1. Situations involving a variety of duties often characterized by frequent change.

2. Situations involving repetitive or short-cycle operations carried out according to set procedures or sequences.

For closeness of supervision the indicators were:

3. Situations involving doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

4. Situations involving the direction, control, and planning of an entire activity or the activity of others.

Finally, the indicator for uncertainty was:

8. Situations involving performing adequately under stress when confronted with the critical or unexpected or when taking risks.

While Temme used the October 1966 CPS in a fashion analogous to the April 1971 CPS to generate estimates for the 1960 census categories, the former body of data was not available for generating estimates for routinization, closeness of supervision, and role uncertainty. To arrive at the estimates for 1960 categories, the 1970 estimates were mapped through the transformation matrix found in the Bureau of the Census Technical Paper 26, where 1970 occupation-industry categories are expressed in terms of their 1960 occupation-industry elements (U.S. Bureau of the Census, 1972; see Hauser and Pretherman, 1977:60, for use of this procedure with SEI and prestige scores).

A potentially more informative multivariate procedure for dimensionalizing occupations within each generation and then estimating cross generation covariation would estimate: (a) measurement models for the component dimensions of occupation within each generation allowing the constructs to be
novel and rather than orthogonal; and (b) cross generational effects through structural equation models. Due to its expanded scope along with several substantial conceptual and estimation problems (see Spenner, 1977: 373-410), this effort is relegated to another paper.

In other analyses not reported here, the DOT item, general educational development (GED), which indexes the overall levels of cognitive complexity required for an average performance in an occupation (the relative levels of mathematical, reasoning, and verbal development) was included in the canonical analysis. When GED is included in the father's occupation-son's early career occupation analysis, its common variance with the second variate is 65.4 percent for fathers and 24.4 percent for sons. The percentages for the first pair of variates are lower and throughout there are only minor modifications in the relative importance of other variables. This lends some additional credence to Spaeth's argument regarding cognitive and substantive complexity of environments as a transmission dimension. This variable was not reported in the major analyses because of possible measurement problems (see Lchner, Featherman, and Duncan, 1972:69-79).

Here, gender, and age cohort differences in the role transmission relationships will be made in another set of comparisons. It is appropriate to note here that the patterns of transmission for black male offspring in relation to their fathers appear quite similar to those reported here for the total population of males. Role transmission for female offspring, considered in relation to father's or mother's occupations, appears to vary quite markedly from that for males.
REFERENCES

Barker, D. G.

Berg, L.

Bielby, W. and A. Kalleberg

Blau, P. and O. D. Duncan

Bluestone, B. A.

Broom, L. et al

Coser, R. L.

Davis, K. and W. E. Moore

Duncan, O. D.

Duncan, O. D., D. L. Featherman, and B. Duncan

Eckaus, R.

Featherman, D. L. and R. M. Hauser
Featherman, D. L., F. L. Jones, and R. M. Hauser  

Gouldner, A.  

Hall, R. T.  

Hiller, A. O. and I. W. Miller  

Hauser, R. M. and D. L. Featherman  

Herzberg, F., B. Mausner, and B. Snyderman  

Jencks, C. et al  

Kalleberg, A.  

Klassky, S. and R. H. Hodge  

Kohn, M. L.  

Kohn, M. L. and C. Schooler  

Kohn, M. L. and C. Schooler  

Lucas, R.  
Martimer, J. T.

Reiss, A. J., et al

Scoville, J.

Sewell, W. H. and R. M. Hauser

Spaeth, J. L.

Spenner, K. I.

Stewart, D. K. and W. A. Love

Temme, L. V.

Timm, N. H.

U. S. Bureau of the Census


U. S. Department of Labor
<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>LNCO</th>
<th>LNCO</th>
<th>S.D.</th>
<th>LNCO</th>
<th>LNCO</th>
<th>S.D.</th>
<th>LNCO</th>
<th>LNCO</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male Mother Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(195.5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex Composition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(21.6%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male Race Composition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(90.3%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Religious Preparation</td>
<td>5.56</td>
<td>1.64</td>
<td>5.84</td>
<td>1.52</td>
<td>6.01</td>
<td>1.11</td>
<td>4.85</td>
<td>1.75</td>
<td>0.41</td>
</tr>
<tr>
<td>Involvement with Data</td>
<td>3.65</td>
<td>2.03</td>
<td>4.27</td>
<td>2.30</td>
<td>1.70</td>
<td>1.36</td>
<td>4.41</td>
<td>2.24</td>
<td>0.075</td>
</tr>
<tr>
<td>Involvement with People</td>
<td>7.74</td>
<td>1.64</td>
<td>5.95</td>
<td>1.66</td>
<td>7.77</td>
<td>2.15</td>
<td>7.05</td>
<td>1.77</td>
<td>0.153</td>
</tr>
<tr>
<td>Involvement with Things</td>
<td>4.04</td>
<td>2.11</td>
<td>4.11</td>
<td>2.66</td>
<td>3.93</td>
<td>3.02</td>
<td>5.07</td>
<td>2.40</td>
<td>0.245</td>
</tr>
<tr>
<td>Substantive Competency</td>
<td>0.94</td>
<td>0.22</td>
<td>0.97</td>
<td>0.62</td>
<td>1.36</td>
<td>0.52</td>
<td>7.70</td>
<td>0.83</td>
<td>0.165</td>
</tr>
<tr>
<td>Freedom from Close Supervision</td>
<td>1.11</td>
<td>0.59</td>
<td>1.25</td>
<td>0.56</td>
<td>1.40</td>
<td>0.43</td>
<td>0.05</td>
<td>0.51</td>
<td>0.033</td>
</tr>
<tr>
<td>Freedom from Stigmatization</td>
<td>1.29</td>
<td>0.63</td>
<td>1.26</td>
<td>0.58</td>
<td>1.56</td>
<td>0.40</td>
<td>1.05</td>
<td>0.63</td>
<td>0.057</td>
</tr>
<tr>
<td>Uncertainty</td>
<td>0.27</td>
<td>0.44</td>
<td>0.47</td>
<td>0.17</td>
<td>0.16</td>
<td>0.37</td>
<td>0.29</td>
<td>0.48</td>
<td>0.039</td>
</tr>
<tr>
<td>Male Median Earnings</td>
<td>51.17</td>
<td>31.43</td>
<td>50.07</td>
<td>16.27</td>
<td>58.49</td>
<td>25.30</td>
<td>63.20</td>
<td>34.38</td>
<td>0.370</td>
</tr>
<tr>
<td>(24.9%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male Employment</td>
<td>74.12</td>
<td>5.90</td>
<td>75.69</td>
<td>14.53</td>
<td>78.33</td>
<td>15.06</td>
<td>67.62</td>
<td>15.11</td>
<td>0.037</td>
</tr>
<tr>
<td>(70.7%)</td>
<td>(10.03)</td>
<td></td>
<td>(63.97)</td>
<td>(17.58)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTES: 1. LNCO = Lenawee County data; n's: OCC = 21,000 (weighted n; adjusts cases to allow use of simple random sample statistical formulae), LNCO = 261; 2. For the Data, People and Things variables, a high score indicates a low level of involvement; 3. The 1960 Census occupational code scores are listed below the corresponding 1970 figure; all LNCO scores are based in the 1960 categories.

<table>
<thead>
<tr>
<th>Variable</th>
<th>canonical variate 1</th>
<th>canonical variate 2</th>
<th>canonical variate 3</th>
<th>canonical variate 4</th>
<th>canonical variate 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male's Median Education</td>
<td>.194</td>
<td>.255</td>
<td>.441</td>
<td>.496</td>
<td>.339</td>
</tr>
<tr>
<td>Male's Race Composition</td>
<td>.221</td>
<td>.343</td>
<td>.542</td>
<td>.376</td>
<td>.511</td>
</tr>
<tr>
<td>Male's Specific Vocational Preparation</td>
<td>.225</td>
<td>.333</td>
<td>.362</td>
<td>.335</td>
<td>.361</td>
</tr>
<tr>
<td>Involvement with Data</td>
<td>.732</td>
<td>.625</td>
<td>.542</td>
<td>.625</td>
<td>.335</td>
</tr>
<tr>
<td>Involvement with People</td>
<td>.717</td>
<td>.616</td>
<td>.563</td>
<td>.616</td>
<td>.335</td>
</tr>
<tr>
<td>Involvement with Things</td>
<td>.739</td>
<td>.625</td>
<td>.542</td>
<td>.625</td>
<td>.335</td>
</tr>
<tr>
<td>Substance Complexity</td>
<td>.717</td>
<td>.625</td>
<td>.542</td>
<td>.625</td>
<td>.335</td>
</tr>
<tr>
<td>Freedom From Close Supervision</td>
<td>.791</td>
<td>.616</td>
<td>.563</td>
<td>.616</td>
<td>.335</td>
</tr>
<tr>
<td>Freedom From Routinization</td>
<td>.781</td>
<td>.616</td>
<td>.563</td>
<td>.616</td>
<td>.335</td>
</tr>
<tr>
<td>Uncertainty</td>
<td>.709</td>
<td>.711</td>
<td>.711</td>
<td>.711</td>
<td>.711</td>
</tr>
<tr>
<td>Male Median Earnings</td>
<td>.851</td>
<td>.791</td>
<td>.791</td>
<td>.791</td>
<td>.791</td>
</tr>
<tr>
<td>Male Employment Security</td>
<td>.207</td>
<td>.696</td>
<td>.379</td>
<td>.412</td>
<td>.391</td>
</tr>
</tbody>
</table>

Father's Occupation—
Socio-Educational Aspiration (1960)

<table>
<thead>
<tr>
<th>Variable</th>
<th>canonical variate 1</th>
<th>canonical variate 2</th>
<th>canonical variate 3</th>
<th>canonical variate 4</th>
<th>canonical variate 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male's Median Education</td>
<td>.837</td>
<td>.505</td>
<td>.291</td>
<td>.674</td>
<td>.259</td>
</tr>
<tr>
<td>Male's Race Composition</td>
<td>.123</td>
<td>.176</td>
<td>.053</td>
<td>.045</td>
<td>.485</td>
</tr>
<tr>
<td>Male's Specific Vocational Preparation</td>
<td>.417</td>
<td>.004</td>
<td>.055</td>
<td>.528</td>
<td>.032</td>
</tr>
<tr>
<td>Involvement with Data</td>
<td>.055</td>
<td>.310</td>
<td>.032</td>
<td>.089</td>
<td>.235</td>
</tr>
<tr>
<td>Involvement with People</td>
<td>.479</td>
<td>.190</td>
<td>.207</td>
<td>.148</td>
<td>.255</td>
</tr>
<tr>
<td>Involvement with Things</td>
<td>.601</td>
<td>.032</td>
<td>.054</td>
<td>.506</td>
<td>.105</td>
</tr>
<tr>
<td>Substance Complexity</td>
<td>.414</td>
<td>.336</td>
<td>.063</td>
<td>.558</td>
<td>.134</td>
</tr>
<tr>
<td>Freedom From Close Supervision</td>
<td>.789</td>
<td>.221</td>
<td>.082</td>
<td>.237</td>
<td>.110</td>
</tr>
<tr>
<td>Freedom From Routinization</td>
<td>.723</td>
<td>.336</td>
<td>.089</td>
<td>.173</td>
<td>.326</td>
</tr>
<tr>
<td>Uncertainty</td>
<td>.715</td>
<td>.045</td>
<td>.055</td>
<td>.179</td>
<td>.100</td>
</tr>
<tr>
<td>Male Median Earnings</td>
<td>.746</td>
<td>,187</td>
<td>.134</td>
<td>.772</td>
<td>.170</td>
</tr>
<tr>
<td>Male Employment Security</td>
<td>.683</td>
<td>.032</td>
<td>.179</td>
<td>.110</td>
<td>.265</td>
</tr>
</tbody>
</table>

a. Signs of the coefficients are reflected such that large scale values indicate higher levels of involvement with data and people.

b. The first three canonical correlations are respectively: .447, .267, .163; for all three p < .001.

c. The first three canonical correlations are respectively: .542, .335, .363; p < .01 for the first two and p < .05 for the third.
TABLE 3: Summary of Common Variance between Occupation Variables and Variates in Relation to Mortimer's Study.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>Prediction of Importance from Mortimer's Interpretation</th>
<th>Proportion of Common Variance with Variates(^a)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Father's Occupation-Son's Aspiration</td>
<td>Father-Son</td>
<td>Father-Son</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Father's Occupation-Son's Early Career Occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Involvement with Data</td>
<td>yes</td>
<td>.141</td>
<td>.111</td>
<td>.745</td>
</tr>
<tr>
<td>Involvement with People</td>
<td>yes</td>
<td>.335</td>
<td>.246</td>
<td>.565</td>
</tr>
<tr>
<td>Involvement with Things</td>
<td>yes</td>
<td>.432</td>
<td>.321</td>
<td>.381</td>
</tr>
<tr>
<td>Male Median Earnings</td>
<td>yes</td>
<td>.609</td>
<td>.697</td>
<td>.741</td>
</tr>
<tr>
<td>Male Employment Security</td>
<td>yes</td>
<td>.037</td>
<td>.360</td>
<td>.671</td>
</tr>
<tr>
<td>Freedom from Close Supervision</td>
<td>yes</td>
<td>.058</td>
<td>.143</td>
<td>.711</td>
</tr>
<tr>
<td>Freedom from Routinization</td>
<td>yes</td>
<td>.173</td>
<td>.137</td>
<td>.713</td>
</tr>
<tr>
<td>Substantive Complexity</td>
<td>yes</td>
<td>.283</td>
<td>.345</td>
<td>.869</td>
</tr>
<tr>
<td>Specific Vocational Preparation</td>
<td>no</td>
<td>.100</td>
<td>.105</td>
<td>.496</td>
</tr>
<tr>
<td>Male Median Education</td>
<td>no</td>
<td>.806</td>
<td>.521</td>
<td>.864</td>
</tr>
<tr>
<td>Sex Composition</td>
<td>no</td>
<td>.052</td>
<td>.226</td>
<td>.074</td>
</tr>
<tr>
<td>Male Race Composition</td>
<td>no</td>
<td>.184</td>
<td>.278</td>
<td>.595</td>
</tr>
<tr>
<td>Uncertainty</td>
<td>no</td>
<td>.026</td>
<td>.077</td>
<td>.490</td>
</tr>
</tbody>
</table>

\(^a\) The proportion (or "redundancy index") refers to the sum of squared correlations for each variable across the first three canonical variates (see Stewart and Love (1968) or Timm (1975:354-357)). See Table 1 for data sources and N's.