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SIGNIFICANT OTHERS, THE SELF-REFLEXIVE ACT AND THE ATTITUDE FORMATION PROCESS*

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Based on a new formulation of attitude formation theory, new instruments (The Wisconsin Significant Other Battery) are utilized to measure the influence of significant others over the educational and occupational aspirations of 100 high school seniors. These new variables are combined with other variables of known effect into a hypothetical model of the process whereby educational and occupational aspirations are set. Because of the partially nonrecursive nature of the proposed model, statistical difficulties involved in its solution are discussed. In spite of these difficulties, the new variables introduced result in more satisfactory explanations of aspiration attitudes than those reported previously.

THE importance of "others" as mediators of culture has long been acknowledged in sociology, and the influence of other persons and groups in the formation of attitudes, values, self-conceptions and other psychological structures is central to much of

sociological theory (Katz and Lazarsfeld, 1955). Recent empirical studies, particularly in the area of educational and occupational attainment, have lent fresh support to this notion (Haller and Sewell, 1967; Alexander and Campbell, 1964; Haller and Butterworth, 1960; Sewell and Shah, 1968) and, more importantly, have made some progress toward an assessment of the relative *quantity* of influence attributable to "significant others" as opposed to other, noninterpersonal, sources (Sewell *et al.*, 1969; Duncan *et al.*, 1968). For example, Sewell, Haller, and Portes report a zero-order correlation of .59 between the expectation of a preselected panel of significant others (parents, teachers, and peers) and the educational aspirations of Wisconsin farm boys in their senior year of high school, and present evidence which suggests that the influence of SES on educational aspirations (and later attainments) is almost wholly mediated by the expectations of significant others (Sewell *et al.*, 1969). This finding has been confirmed for several other types of samples (Sewell *et al.*, 1970).

THE PROBLEM

In spite of the great progress that has been made, these recent studies have all used measures of significant other influence which are in one or more ways unsatisfactory (Haller and Woelfel, 1969, Chapter 2). Generally, these studies have either measured the individual's statement of his perceptions of the influence others have had on him (Haller and Sewell, 1967; Sewell, *et al.*, 1969; Kemper, 1963) or have dealt with a limited panel of pre-selected significant others (Haller and Butterworth, 1960; Duncan *et al.*, 1968).

One of the main reasons for the inadequacy of previous research instrumentation has been the lack of a close connection betwen the measures themselves and attitude formation theory. Thus, for example, Sewell, Haller, and Portes reason that parents, friends, and teachers should be influential on intuitive as well as theoretical grounds (Sewell *et al.*, 1969), and for the same kinds of reasons, Kemper selects wife, boss, colleague, and father for his panel of significant others (Kemper, 1963). In no instance has

a study (1) detected the exact significant others of a sample of individuals with an instrument of known validity and reliability, (2) measured the expectations of those others for the individuals in question, and (3) compared the effect of the expectation of others with other variables of known effect on the attitudes of individuals. It is to those ends that the present study is directed.

THEORY

We start with the working assumption that significant others are attitude specific. If it should turn out that some others transmit influence over many attitudes, such persons will be discoverable by accumulation of spheres of influence. If we assume, however, that others are general and pervasive in the sense of Kuhn's "Orientational Other" (Kuhn, 1964), we will miss those others whose influence, although great, may be only segmental. As a working definition, then, we assume that *significant others are those persons who exercise major influence over the attitudes of individuals.*

The theory basic to this research assumes that attitudes are relationships between a person and an object or set of objects (Green, 1954; DeFluer and Westie, 1963). But following from the interactionist postulate that man's perception of objects is always mediated by some symbolic structure (Kuhn, 1964), that relationship is assumed to be a conceptual one, that is, it is the relationship a person sees between his conception of himself and his conception of the objects in question. The process of forming a conception, on a most general level, can be seen as a process of categorization (Bruner, 1958). Thus, one may define an occupation (like doctor, lawyer, professor, etc.) by placing it into a series of categories such as "good paying job," "high status," "humanitarian," etc. Similarly, one defines himself by a process of categorization; he places himself into categories like "intelligent person," "student," "wife," etc. These categories—insofar as they exert a "filtering" effect on one's perception of the objects classed within them—once formed, we term "filter categories."

Following from these premises, then, attitude may be defined as a person's conception of the relationship between the filter cate-

gories of which he sees himself to be a member and the filter categories of which he sees the object to be a member.

It follows, then, that the process whereby attitudes are formed and changed is the same as the process by which filter categories are formed and changed. The inclusion of a set of distinct objects into a ctaegory is basically a classification based on perceived similarity, and conversely, exclusion of an object from a category is a classification based on a perceived difference. Classification is thus a cognitive act based on the *information* one has about objects and self. Information, therefore, is the basis of filter categories and, hence, attitudes as we define them here. Three sources of such information are assumed to be central to filter category formation:

Interpersonal Influences. Perhaps the broadest distinction between types of interpersonal influence noted in the field is that between others who hold expectations for ego and those who serve as models for ego's behavior (Kelly, 1952). According to the theory outlined above, those who hold expectations for ego may do so by (1) communicating definitions of ego's self-filter categories (and thus one's self), (2) communicating definitions of the object filter categories, and thus the object of the attitude, or (3) both. Probably both are involved in most expectations one person holds for another's behavior. For want of a better term, these others are here called *definers.* By the same reasoning, models may exert influence by serving as (1) examples for ego (insofar as ego considers the others to be a member of the same category as himself, the other's actions help define that category and consequently his conception of himself), (2) examples of the object or the object filter categories (as a doctor *defines* medicine for ego simply by practicing medicine where ego can see him), or (3) both. We shall call these two basic types "models for self" and "models for objects."

This is an unorthodox formulation. It makes no assumptions about affect, about any emotional ties that may (or may not) exist between ego and other. *It assumes that others are significant in direct proportion to the amount of information they convey to an ego about the categories he uses to define objects and self, either by word (definers) or examples (models), affective factors notwithstanding.*

Self-Reflexive Activity. Self-reflexive activity, as Mead (1934) defined it, refers to behavior in which an individual confronts himself in responding to some object and makes an inference about himself as an active self on the basis of that confrontation. We here take the term in the broadest sense to refer to any definition a person makes about his relationship to an object on the basis of his own observations. We might hypothesize that self-reflexive activity is more influential (compared to interpersonal influences and the effect of previous related attitudes) in the formation of attitudes when the object of the attitude is unambiguous and observable; in the event of ambiguous or nonobservable objects, reliance on interpersonal influence and other related attitudes should increase.

The Effect of Other Attitudes. In the abstract, the two sources mentioned above are probably exhaustive. In any ongoing personality, however, new information which a person receives from whatever source is at least partly evaluated in terms of its agreement with what ego already believes (Festinger, 1957). Without making any specific hypotheses about modes of resolution of conflicts or other specific results, we here refer to the more general hypothesis that other relevant attitudes which ego already holds exert some influence on the formation or change of an attitude. Thus, in setting his occupational aspirations, ego is very likely influenced by his educational aspirations— he would be unlikely to aspire to be a doctor without aspiring to be a college graduate as well.

Essentially, the theory presented here is an information theory, with attitudes defined as an individual's conception of relations to objects. Structural factors influence the kinds of significant others to which ego is exposed and the kinds of information that those significant others communicate to ego, and that information, along with what ego can observe from his own activities, provides the basic corpus out of which he sets his attitudes. That information is evaluated in terms of its consistency with previously accumulated information (i.e., other related attitudes)

and results in the new attitude. Thus, the theory delimits five critical variables: (1) the dependent attitude; (2) the information provided by significant others; (3) those elements of phenomenal reality relevant to the dependent attitude which ego directly observes as self-reflexive activity; (4) the prior attitudes of the individual; (5) the individuals' position in the social structure. *Although a hypothetical model of the causal ordering of these variables will be presented later, the main emphasis of this paper is on the definition and measurement of these variables, particularly the second.*

THE VARIABLES

1. *The dependent variables*—educational and occupational aspirations.

Since the theory assumes significant others to be influential over attitudes, attitudes are the true dependent variables in this study. The attitudes chosen for study here are levels of educational and occupational aspiration. The concept of level of aspiration is derived from the work of Lewin (1944), and refers to behaviors which may be graded into levels of difficulty. The level of achievement to which an individual aspires within this continuum of difficulty is referred to as his level of aspiration. In this research, the number of years of education to which an individual aspires is considered his level of educational aspiration (LEA); the level of occupational prestige to which an individual aspires is considered his level of occupational aspiration (LOA). Levels of educational and occupational aspirations are virtually ideal attitudes for this research, since they are relatively stable, long range, important to the individual who holds them, virtually universal in the subject population (high school students), noncontroversial, and both are easily measurable with instruments of known validity and reliability.

Level of occupational aspiration (LOA) was measured in this research with the Occupational Aspiration Scale (Haller and Miller, 1963). Briefly, the Occupational Aspiration Scale assumes that LOA is multidimensional, including both realistic (best job you are sure you can get) and idealistic (job you would most like to have), short range (after your schooling is over) and

long range (when you are thirty years old) dimensions. The eight-item test measures each dimension twice, and the score (ranging from 0 to 80) represents a composite of all the dimensions. A fairly elaborate discussion of validity and reliability of this scale is presented in Haller and Miller (1963).

Level of educational aspiration (LEA) is more simply measured with a two-item scale measuring idealistic (supposing you had the necessary abilities, grades, money, etc., how far would you really like to go in school?) and realistic (considering your abilities, grades, financial resources, etc., how far do you actually expect to go in school?) dimensions of the aspiration. Both items were followed by the response alternatives—quit school; finish high school; go to a trade, business, secretarial or nursing school; go to a college or university (one that gives credit toward a bachelor's degree), get an advanced degree (Masters, Ph.D. or professional such as law or medicine). The two items were summed to yield a 10-point scale (Haller and Woelfel, 1969).

2. *Significant Others' Influence.*

The most tedious variable to be measured in this study is the influence of significant others. A two-stage procedure is clearly implied: (1) those persons who are influential for each individual in the sample must be identified, and (2) whatever it is that they do or are that renders them influential must be measured. The process of measurement used follows directly out of the theory presented earlier, and the reader is referred to the theory for a fuller understanding of the process involved.

A. Identifying significant others. Significant others have been defined as those persons who, by word or example, convey substantial information to an individual about the filter categories that individual uses to define himself and/or the objects of his experience. Since the objects of the attitudes in question here are education and occupation, the following procedure was adopted.

Intensive interviews were conducted with 30 high school students in various high schools in Wisconsin. Although the sampling procedure is described in detail elsewhere (Haller and Woelfel, 1968), generally it tried to locate at least one individual with each

possible combination of race (black and white); SES (farm, blue-collar, white-collar, professional, executive); rural-urban; proper age in grade versus over-age in grade; and male-female. Some of the combinations make no sense (e.g., urban-farm), and some are not easily found in Wisconsin (e.g., rural negro professional), and so the total does not equal the 64 possible combinations.

These youth were asked to define education and occupation, and their orientation toward each. The resulting list of definitions were then classified into four generic "filter categories."

The original purpose of eliciting filter categories at all was to use them as cues to remind the subject to think of people who have indirectly influenced his thinking about occupation. If an individual did not influence the subject's definition of *working,* or of *being a doctor,* perhaps he *did* influence his thinking about *money* or how much money a person should earn. This would influence the individual's occupational choice; income would be a filter category for occupation. But after all the filters were coded from the occupational section of the protocol, there were far too many to include on a reasonable questionnaire. Typical responses were "working with people," "good pay," "service to humanity," "high status," "work around animals," "a way to make a living," etc. Although there were many individual responses, a striking characteristic of the list was the great similarity of most of the items to each other. The following actual filters—livelihood, means to support, to buy necessities, $1.00–$1.70 per hour (or other actual salary figures) means to support family, make money, compensation, survive—all involve earning money, for example. Because the number of interviews was too small for any meaningful statistical analysis, all occupational filters were intuitively classified on the basis of similarities like those listed above. Four categories emerged into which almost all the filter categories seemed easily placeable: Intrinsic Nature, Extrinsic Nature, Intrinsic Function, and Extrinsic Function.

Instrinsic Nature—this category is made up of all those responses indicating activities contributing directly to the work of a particular kind of job; for example, *installing*

pipe is part of the work called "plumbing." Some of the more frequent items included in this class were managing people, selling, farming, designing houses, singing, writing theories, etc.

Extrinsic Nature—this category is made up of all those responses which describe the environments in which the direct activities occur; perhaps the best synonym is *working conditions,* such as *heavy work, work outdoors, work around animals, work with my hands, leave free time for travel, not too strenuous, fun,* etc.

Intrinsic Function—this category describes the purpose of a job; the actual reason for the job's existing; e.g., *healing people, manufacturing houses, bettering humanity.* It is distinguished from Intrinsic Nature in that it refers to the *reason* the job is done rather than the actual activity being done.

Extrinsic Function—this category refers to those functions which are not inherently part of a job, but which can be served by almost any job, e.g., *earn money, advancement, high prestige, buy a house, earn the things you need, support family,* etc.

This, of course, is by no means the only classification schema that could be imposed on this data. Its usefulness hinges on the assumption that the mentioning (on a questionnaire instrument) of these four categories, along with several sample items of each, may cue the individual to think of the actual filter categories he has used to define occupation and, hopefully, help him remember who he talks to or sees as examples of each of them.

Although occupational filter categories are used as an example, educational filters are exactly parallel. *The initial assumption of the theory is that persons who provide information about these filter categories are significant others for education and occupation.* A questionnaire was then constructed which (1) listed each filter category; (2) asked the individual who had talked to him about each filter category; and (3) asked the individual who he knew was an *example* of each filter category. Those whom ego named as *talking about* the filter categories are considered *definers;* those listed as *examples* of the filter categories are considered *models.* Both models and definers together provide our operational definition of "significant

other." Thus, the individual is *never* asked who influenced him or whom he likes, or to whom he refers himself for definitions, etc. The operations conform very closely to the theory. Because of the complexity of the process, the reader is referred to Haller and Woelfel (1969) for a much fuller discussion of these instruments.

B. Measuring the expectations of significant others. Once the significant others for each individual had been identified by the above procedure, they were sent by direct mail a questionnaire which measured the expectations they held for their focal individual. These instruments are exact duplicates of the instruments used to measure the aspirations of the youth themselves, with only changes in appropriate personal pronouns; e.g., "How much education are you really sure you will get?" is changed to read "How much education are you really sure he/she will get?" Educational forms, of course, were sent to educational significant others and occupational forms to occupational significant others. The reader must be cautioned here, however, that only the *expectations of definers are reported in this article*. Although plausible operationalizations for the information conveyed by models are included in the data, not all egos have models, it turns out, although all have definers. The statistical problems caused by this inherently "missing data" require more elaborate treatment than can be offered here, and must await a later article.

The fact that, on the average, each focal individual had an average of 13.5 significant others led to another difficulty.

For any individual i, there were N significant others, each holding expectations relevant to i's behavior. We hypothesized that there should be a relationship between the *aggregate value* of the expectations of others and the aspirations of ego, although the precise nature of that aggregate was (and is) a matter for conjecture. For simplicity, the arithmetic mean of the expectations of all the N significant others for any individual i was computed (Mettlin, see References). Thus for any individual i, four scores directly bearing an interpersonal influence are available: (1) his educational aspirations (X_3); (2) the mean educational expectations of his significant others (X_5); (3) his own occupa-

tional aspirations (X_4); and (4) the mean occupational expectations of his significant others (X_6). Test-retest reliability correlations (over a three-month interval) for unfamiliar variables are as follows: mean expectations of significant others who are *definers:* $r_{t1 \, t2} = .87$; mean occupational expectations of significant others who are definers: $r_{t1 \, t2} = .91$.

C. Self-reflexive activity. This variable refers to those elements of phenomenal reality which ego may use as a basis to judge his own relationship to the object of the attitude under study. In relation to educational and occupational aspirations, we believe this set of variables certainly includes ego's relative performance level in his academic context. To get a broad picture of ego's relative performance in his school setting, an equally weighted index of (a) ego's grade point average in high school to date, (b) the number of extracurricular activities in which ego participates, and (c) the extent to which ego considers himself a "leader" in those activities was constructed.

However, the effect of this variable is not assumed to be completely direct, since these performances may be observed not only by ego but also by his significant others. Thus, this variable is presumed to have both a direct effect on ego's attitude in a self-reflexive fashion and an indirect effect through its impact on the expectations of his significant others.

D. Other related attitudes. The theory prevading this paper assumes that the influence of attitudes ego holds toward objects related to the attitude under study will exercise independent influence on that dependent attitude. Since there are two principal dependent attitudes measured in this research (educational and occupational aspirations) and since these two attitudes are known to be related to each other (in this research their zero-order correlation is .70), we assume that each attitude exerts reciprocal influence on the other, independently of the other main variables. Thus, the level of educational aspiration constitutes our operationalization of "other related attitudes" when dealing with the level of occupational aspiration, and *vice versus*.

E. Social structural position. We assume that different locations in the social structure
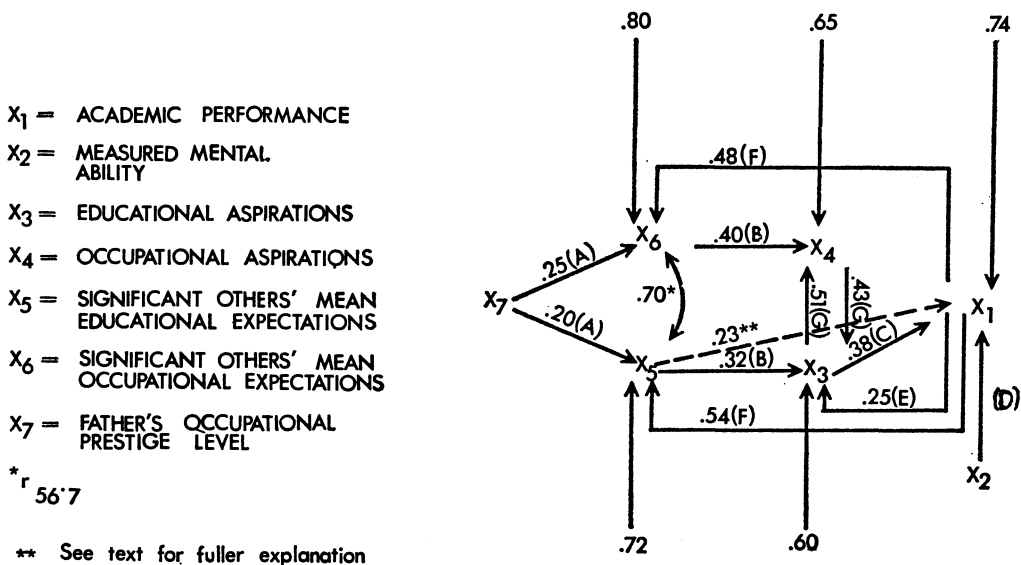
differentially expose their incumbents to various kinds of significant others who take the structural location of ego into account when setting their expectations for him. In this research, structural location is measured by the SES of ego's family. This is measured by the prestige level of ego's father's occupation, rated by the Duncan revision of the NORC scale (Duncan, 1961).

F. IQ. Although the previous variables exhaust those thought to be theoretically interesting, the genetic ability of the student may intrude on the model at the performance stage. We thus control for the IQ of the student as measured by the Otis Quick scoring test of mental ability (Otis, 1954).

Data we collected from 100 high school seniors—the entire senior class—from a small Wisconsin city high school. The Wisconsin city was selected (a) because its size (13,000) is about as large as most Wisconsin cities may be, with only one school; so all the city's students could be located in one place, and (b) because the city itself is based on a fairly mixed economy and a reasonably wide SES range might be obtained. More specific data about the sample is available in Haller and Woelfel (1969). The instruments identified 1,358 significant others for this group of students. A 68% return of questionnaires mailed to those others yielded usable data from 950 significant others. Figure 1 represents what seems a plausible ordering of these variables in this context. X_7 (SES of the family) is one of the social structural factors which may exert influence over significant others and their expectations. X_6 and X_5 are, respectively, the mean occupational and educational expectations of the student's significant others, and represent the interpersonal influence variables of the theory. X_4 and X_3 are respectively the occupational and educational aspirations of the student representing the attitude variables (Haller and Woelfel, 1969: Chapt. 2). X_2 is measured mental ability, here presumed to be one of the outside (nonsocial-psychological) factors which intrude on the theory. X_1 is the academic performance of the student. The arrows marked (A) represent the influence of structural characteristics over the expectations others have for ego. Arrows marked (B) represent the influence the expectations of others have on the attitudes (educational and occupational aspirations) of ego. Arrow (C) represents the influence of ego's attitude on his behavior. Arrow (D) represents the influence of an outside factor (measured mental ability) on the behavior. Arrows (E) and (F) are feedback arrows. Arrow (E) represents self-reflexive activity, or the effect on ego's attitudes of his observations of his own behavior. Arrow (F) represents the effect on the expectations others hold for ego of

FIGURE 1. SCHEMATIC REPRESENTATION OF A MODEL FOR THE FORMATION OF EDUCATIONAL AND OCCUPATIONAL ASPIRATIONS. STRENGTHS OF THE VARIOUS CAUSAL PATHS ARE ESTIMATED BY BETA COEFFICENTS

X_1 = ACADEMIC PERFORMANCE

X_2 = MEASURED MENTAL ABILITY

X_3 = EDUCATIONAL ASPIRATIONS

X_4 = OCCUPATIONAL ASPIRATIONS

X_5 = SIGNIFICANT OTHERS' MEAN EDUCATIONAL EXPECTATIONS

X_6 = SIGNIFICANT OTHERS' MEAN OCCUPATIONAL EXPECTATIONS

X_7 = FATHER'S OCCUPATIONAL PRESTIGE LEVEL

* $r_{56 \cdot 7}$

** See text for fuller explanation

their observation of his behavior. The reciprocal arrows (G) between X_3 and X_4 represent the influence of related attitudes on each other. It should be emphasized that no arrow is drawn between X_4 and X_6 since it is assumed that the influence of occupational aspirations on academic performance is indirect. We hypothesize that the role of high occupational aspirations is to cause a person to set high educational aspirations, which result in high academic performance. Similarly, no feedback arrow is hypothesized between academic performance and occupational aspiration, since we assume that influence to be indirect; i.e., the academic performance of the student influences his judgment of his probable academic achievement and thus his *educational aspirations,* which consequently influence his *occupational aspirations.*

Statistics. Beta coefficients are used to provide rough indications of the degree of influence of each hypothesized causal variable, including those in the fedback loops, on each hypothesized effect variable. This technique does not provide an exactly accurate estimate of the amount of causal influence exerted by each variable. For in a model which posits "feedback loops" or simultaneous variables (two or more variables exerting reciprocal influence at any given point in time) as this model does, simply reversing the positions of the two simultaneous variables in the regression equations (that is, allowing each to act as an independent variable on the other in the same regression equation) does not take into account the reciprocal influence of the dependent on the independent variable when estimating the effect of the independent variable on the dependent (Duncan *et al.,* 1968:121–124).

No truly satisfactory method other than actual physical control of the variables has yet been devised for the solution of these nonrecursive models. Rather than halting analysis at this point, we have opted to *estimate* solutions for the equations by the simple expedient of treating the variables involved in such reciprocal loops as if they were exogenous (i.e., wholly determined outside the system) and reading their values from the data. The result of such a procedure is that the presence of substantial beta coefficients between two such reciprocal variables yielded by our procedure is clear cut evidence that a net relationship between the variables does exist, but the estimates of *how much* of that influence travels in *each direction* is inaccurate.

RESULTS

As the zero-order correlation matrix presented in Table 1 shows, the interrelationships among the variables in the system are quite substantial. Of more interest, however, is the degree to which the hypothesized rela-

Table 1. Observed Correlations for 100 High School Seniors, Their Significant Others' Expectations and Structural and Personal Variables.[*]

Independent Variable		X_1	X_2	X_3	X_4	X_5	X_6	X_7
Academic Performance (AP)	X_1	--	.37	.62	.49	.58	.51	.59
Mental Ability (MA)	X_2		--	.33	.32	.39	.42	.14[**]
Students' Educational Aspirations (EdAsp)	X_3			--	.70	.66	.59	.31
Students' Occupational Aspirations (OccAsp)	X_4				--	.55	.64	.33
Significant Others' Educational Expectations (EdExp)	X_5					--	.76	.35
Significant Others' Occupational Expectations (OccExp)	X_6						--	.32
Fathers' Occupational Prestige Level (SES)	X_7							--

[*]All correlations except (**) are significant at the .05 level.

tionships are borne out by the beta coefficients in Figure 1. Not all the possible arrows have been drawn, although most have been calculated. Of those calculated, none of those not presented in Figure 1 is higher than .13 (all the beta coefficients are presented in Table 2). Occupational expectation and educational expectation have not been allowed to regress on one another, for example, since (a) the educational and occupational significant others represent to some extent different persons (the conditional probability of one significant other being both educational and occupational is .70), and so the interpretation of such a relationship would be problematic; (b) doing so obscures the relationship between both variables and SES; and (c) because SES has been an important variable involved in the educational and occupational aspiration process, there is some reason to regress significant other influence on it, but our major emphasis here is not on the causal determinants of significant other expectations, even though such a study would be a valuable one. For similar theoretical reasons, neither occupational expectations nor educational expectations have been allowed to regress on educational aspirations or occupational aspirations. Mental ability and SES are treated as given and are not regressed on any of the variables. Specifically, the equations used were:

$$X_1 = \beta_1 X_2 + \beta_2 X_3 + \beta_3 X_4 + \beta_4 X_5 + \beta_5 X_5 + \beta_6 X_7$$

$$X_3 = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_4 + \beta_4 X_5 + \beta_5 X_6 + \beta_6 X_7$$

$$X_4 = \beta_1 X_1 + \beta_2 X_3 + \beta_3 X_4 + \beta_4 X_5 + \beta_5 X_6 + \beta_6 X_7$$

$$X_5 = \beta_1 X_1 + \beta_2 X_7$$

$$X_6 = \beta_1 X_1 + \beta_2 X_7$$

Where:

X_1 = Academic Performance

X_2 = Mental Ability

X_3 = Student's Educational Aspirations

X_4 = Student's Occupational Aspirations

X_5 = Significant Others' Educational Expectations

X_6 = Significant Others' Occupational Expectations

X_7 = Father's Occupational Prestige Level

The main finding is that where substantial relationships were predicted by the theory, they were found; and where they were not predicted, they were not found. In addition, the present operationalization of the theory explains 64% of the variance in educational aspirations and 59% of the variance in occupational aspirations, which are its true dependent variables. These explained variances are important, first because they are higher than the best previously reported (Sewell et al., 1969), and secondly because they utilize the direct measure of exact significant other expectation rather than ego's perception of these expectations.

The model hypothesized that structural characteristics (in this instance represented by father's occupational level) exercised their effect on the individual through the mediation of significant others. The beta coefficients of .25 between father's occupational level and occupational expectations, and .20 between father's occupational level and educational expectations support the notion that structural characteristics influence the expectations of others; the absence of any substantial direct links between SES and any subsequent variable (even though there are zero-order relationships) supports the contention that significant other influence is the mechanism of mediation (this is consistent with Sewell et al., 1969). The beta weights between occupational expectations and occupational aspirations (.32) are consistent with net effect of the expectations of significant others on the aspirations of youth. The strong reciprocal arrows between occupational aspirations and educational aspirations (.43 and .51) support but do not necesarily confirm the hypothesized influence of related attitudes on each other (i.e., students take into account their occupational plans when setting educational goals and vice versa). The arrow from educational aspirations to academic performance is consistent with the hypothesis that the attitude variable, educational aspiration, exercises substantial influence over the behavioral variable appropriate to it, academic performance. No direct link was posited between occupational aspiration and academic performance, since it was assumed that whatever effect the occupational aspirations of students may have on their academic performance would operate indi

Table 2. Multiple Correlations and Standardized Partial Regression Coefficients for Equations Represented in Figure 1.

Independent Variables		X_1		X_3		X_4		X_5		X_6	
		β	t	β	t	β	t	β	t	β	t
Academic Performance (AP)	X_1	--	----	.25*	3.14	.02	.22	.48*	5.62	.54*	6.64
Mental Ability (MA)	X_2	.13	1.53	.00	.05	.03	.34	--	----	--	----
Students' Educational Aspirations (EdAsp)	X_3	.38*	3.15	--	----	.52*	5.19	--	----	--	----
Students' Occupational Aspirations (OccAsp)	X_4	.02	.22	.43*	5.19	--	----	--	----	--	----
Significant Others' Educational Expectations (EdExp)	X_5	.23	1.77	.32*	3.15	-.13	1.16	--	----	--	----
Significant Others' Occupational Expectations (OccExp)	X_6	.03	.20	.07	.65	.40*	3.62	--	----	--	----
Fathers' Occupational Prestige Level (SES)	X_7	.04	.45	.03	.48	.04	.55	.25*	2.88	.20*	2.46
R		.68*		.80*		.76*		.60*		.63*	
R^2		.46		.64		.57		.36		.40	
df		93		93		93		97		97	

* Significant at .05, two-tailed test.

rectly, by raising or lowering their educational aspirations. The actual beta weight for that path is only .025, supportive of the hypothesis of no direct effect.

The arrow from academic performance to educational aspiration represents the direct feedback of academic performance on educational aspirations. The beta weight of .25 is consistent with the theoretical hypothesis that the individual's own observation of his academic performance (self-reflexive act) influences his educational aspirations. No direct link from academic performance to occupational aspirations had been hypothesized since we assumed that high or low academic performance would effect the student's occupational aspirations indirectly by raising or lowering his educational aspirations. In fact, the actual direct link has a beta coefficient of only .02, supporting the hypothesis of no direct effect.

It had further been hypothesized that significant others would observe the student's academic performance and raise or lower their expectations accordingly. These links are represented by the direct arrows from academic performance to educational expectations and occupational expectations. The hypothesis would predict high beta values here, and their respective beta values of .54 and .48 are indeed quite high. We also hypothesized that, of the three modes of influence on attitude, the individual's reliance on the self-reflexive act would inrcease as the object of the attitude in question became more observable, and conversely the influence of significant others and related attitudes would increase where the object of the attitude is less observable. The data bear this out. Education should be more of an observable object to a student than occupation, since he participates in education day by day, whereas he participates in the occupational structure only imaginatively if at all. Accordingly, both significant others and related attitudes exert more influence over occupational than educational aspirations (occupational expectations to occupational aspirations = .40 versus educational expectations to educational aspirations = .32; educational aspirations to occupational aspirations = .51 versus occupational aspirations to educational aspirations = .43).

Two apparently surprising findings (not inconsistent with the theory) also emerge from the diagram. First, there is a substantial beta weight from the educational expectations of significant others to the academic performance of the student (represented by the dotted arrow between educational expectations and academic performance) which had not been anticipated in the model. A plausible explanation may be as follows: academic performance is not the behavioral variable ideally to be predicted by educational aspiration—the variable which the theory would argue directly depends on educational aspirations is *educational attainment,* or number of years of education attained. It may be, then, that in some cases students feel that their significant others expect high educational attainment from them and, to satisfy those others, perform better in school but do not raise their educational aspirations accordingly—this is potentially possible since educational aspirations are responsive to variables other than the expectations of significant others.

The second anomaly is the surprisingly low path from mental ability to academic performance. This would seem to indicate that mental ability has little to do with academic performance. This low coefficient is misleading because the academic performance variable includes not only grade point average but also extracurricular activities not so likely to be affected by mental ability. That this is the case is illustrated by the following: (1) the zero-order correlation between mental ability and academic performance is .37, while that between mental ability and grade point average is .60, and (2) when the weighting of grade point average in the measure is doubled the beta coefficient increases to .21.

DISCUSSION

Of first concern are the limitations imposed on inference by the present research design. Although the model bears a resemblance to path analysis, it clearly does not meet the requirements of such analyses (Blau and Duncan, 1967:165–172; Wright, 1934, 1960; Heise, 1968), and we have refrained from calling it such. It is, and should be regarded as, simply a graphic representation of a series of mathematically independent regression equations. The presence of a substantial beta

coefficient where one was hypothesized is not an unquestioned confirmation of that hypothesis. Nevertheless, the *absence* of substantial paths where they had been predicted, or the *presence* of substantial paths where they had *not* been predicted would have constituted a clear refutation of theory. In all, substantial beta coefficients were predicted in ten cases and all were found; the absence of substantial beta coefficients was predicted in five cases, and all were confirmed. Thus, 15 distinct hypotheses were supported by the data, while none were disconfirmed.

Bearing these considerations in mind, this research has nonetheless provided considerable evidence consistent with the proposition that all three of the modes of influence hypothesized by the theory— interpersonal influence, self-reflexive activity, and related attitudes—exercise strong causal influence over the formation of attitudes, and that once formed, these attitudes exert independent causal influence over behavior. Perhaps more important is the recognition that all three modes are underlain by the same basic dimension. Both interpersonal influences and self-reflexive activities, in spite of obvious differences in dynamics, are essentially processes whereby the individual receives information about himself—and more precisely about his relationship to objects. That information is filtered through past appropriate information and results in a conception of an *appropriate* relationship to the object in question. There is a strong suspicion that *this information itself is a motor toward behavior*. Although this is not the only interpretation the data will bear, it is an attractive one deserving further research. Based on such psychology, the well-known effects of social structural factors on behaviors are plausibly explained by suggesting that structural characteristics at least partially determine the persons with whom one will principally interact and what information they will principally transmit, and further that structural factors exercise control over the situations in which one will (reflexively) view himself acting. Although other interpretations are possible, the research will support this construction quite well.

With specific regard to mobility theory, several implications should be drawn. First, the research lends credence to the multi-stage nature of the mobility process: social structural factors determine the expectations of an individual's significant others, which in turn exert causal influence over the person's attitudes. These attitudes themselves then exert directive forces over both academic performance and later educational and occupational attainments (see particularly, for the latter, Sewell *et al.*, 1969). But the process is not simply recursive; feedback from academic performance (and by implication attainments) exerts influence over both significant other expectations and individual attitudes.

The technique used in this research for detecting significant others and their expectations (the Wisconsin Significant Other Battery; Haller and Woelfel, 1969) has implications of its own. Insofar as it enables the researcher to determine the exact educational and occupational significant others for any person as well as their expectations for him, it opens the possibility of experimentally varying either the actual significant others or their expectations for any person or group of persons. Insofar as the Wisconsin Significant Other Battery is fairly easy to modify, its use is not restricted to only educational and occupational attitudes, but may be directed to other long standing, nonsituational attitudes such as prejudice, religious attitudes, consumptive and productive attitudes, etc.

Finally, the statistical difficulties encountered in this study have important methodological implications of their own. The problem of reciprocal influence among variables has been approached from several perspectives before. Duncan *et al.* (1968) have attempted to solve path models involving two reciprocal variables (educational and occupational aspirations) by an ingenious blend of multiple regression and factor analytic techniques whereby those two reciprocals were treated as separate manifestations of a latent substructure (ambition). This new variable is then treated as a single variable in a simple recursive model. While there is reason for argument about the degree to which educational and occupational aspirations are separate attitudes or merely separate manifestations of underlying ambition, such a technique would seem clearly

inappropriate in the case of obviously distinct reciprocal variables, such as the academic performance of a student and the student's educational aspirations.

Sewell *et al.* (1969) have resorted to the simple expedient of measuring reciprocal variables at different points in time. Thus, they measure academic performance at T_1 and aspirations at T_2. Since it is manifestly impossible for aspirations at T_2 to affect performance at T_1, Sewell *et al.* do not posit a reciprocal path. The use of time-lagged variables, however, in no way alters the theoretical presumption that *at any given point in time,* aspirations and performances are mutually interdependent. Such interactions are not taken into account in the Sewell *et al.* models, and their path coefficients are correspondingly misleading, insofar as they are the mathematically exact solutions for theoretically inexact statements. The resolution presented in this paper is technically the least sophisticated of all, but it has the advantage of preserving the theory intact rather than modifying it to meet the exigencies of method.

It has become increasingly clear that numerical manipulation of nonexperimental data is insufficient. Fortunately, the theory lends itself well to physical controls. What is clearly needed at his stage of theoretical development is an experimental design in which the variables are physically manipulated rather than statistically controlled. Such a design is not only possible but feasible since the key variables, the educational and occupational expectations of significant others, are themselves amenable to at least some physical manipulation. Although Wisconsin Significant Other Battery does not guarantee such research to be successful, yet without the capacity to detect significant others, one cannot manipulate these expectations in a direct fashion. While much research of all kinds can be performed fruitfully in this area, the understanding of the educational and occupational attainment process and of the attendent level of measurement devices has increased to the point where field experiments have become a distinct possibility.

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DISABILITY AND DEVIANCE: NORMATIVE ADAPTATIONS OF ROLE BEHAVIOR *

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*This paper examines disability as a social process. The designation of some forms of excep-
tional behavior as disability provides a means for the normalization of incapacity in terms of
existing role relationships. The requirements for long-term or permanent exemption from
role obligations involve legitimation and adjustment to role maintenance. Behavioral rewards
and punishments are not effective for regulating behavior recognized as beyond the control
of the individual. Agents of social control may, however, influence or regulate behavior
through their ability to provide or withhold alternative sources of gratification. Sanctions
may be applied in the process of recognition of inadequate role performance, the attribution
of responsibility, or the legitimation of performance failure. The accredited disabled individual
is excused from role performance by legitimation and may be provided with alternative
behavioral patterns for obtaining income, care, rehabilitation or other services. Legitimation
may stipulate the behavioral requirements to consolidate modified expectations into a coherent
pattern of adaptation—as normalization of the behavior of the incapacitated individual. This
conceptualization suggests a more concentrated focus on the elaboration of behavioral alterna-
tives within existing role relationships rather than the proliferation of specialized role reper-
toires.*

THIS paper is concerned with the con-
ceptualization of disability as a social
process. Although disability has re-
ceived relatively little theoretical considera-
tion, the general tendency has been to treat
disability as an extension of the sick role
or as a form of deviant behavior. This dis-
torts the nature of the normative prescrip-
tions for incapacity and obscures important
conceptual distinctions. We view disability
as a form of adaptive behavior provided for
by the norms of role relationships. As with
other forms of social behavior, the adaptive
enactment of disability may take deviant
forms or may follow the expectations for be-
havioral contingencies. This perspective has
ample precedent in the work of Lemert
(1951, 1967); Mechanic (1966a); Davis
(1961) and others (Cohen, 1959, 1966; Nagi
1969; Sykes and Matza, 1957; Levinson,
1959; Goode, 1967; DeLamater, 1968.) We
believe that the conceptual distinctions in-
volved have implications for role theory and