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The American Journal of Sociology, Vol. 87, No. 6 (May, 1982), 1257-1286.

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Job Conditions and Personality: A Longitudinal Assessment of Their Reciprocal Effects¹

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In earlier work, we assessed a longitudinal causal model of the reciprocal effects of the substantive complexity of work and intellectual flexibility. In this paper, we greatly expand the causal model to consider simultaneously several structural imperatives of the job and three major dimensions of personality—ideational flexibility, a self-directed orientation to self and society, and a sense of distress. The analysis demonstrates that the structural imperatives of the job affect personality. Self-directed work leads to ideational flexibility and to a self-directed orientation to self and society; oppressive working conditions lead to distress. These findings strongly support a learning-generalization model. Personality, in turn, has important consequences for an individual's place in the job structure and in the system of social stratification. In particular, both ideational flexibility and a self-directed orientation lead, over time, to more responsible jobs that allow greater latitude for occupational self-direction.

In this paper we assess the effects of men's working conditions on their personalities and the effects of their personalities on their working conditions. Our interest in this problem was aroused some years ago, when we tested the hypothesis (proposed in Kohn 1963) that the conditions of work associated with social class position are a principal mechanism by which class exerts its psychological impact (see Kohn and Schooler 1969; Kohn 1969, chaps. 9 and 10; Pearlin and Kohn 1966). Subsequently, Kohn (1971) similarly analyzed bureaucratization, attempting to specify which of the conditions characteristic of bureaucratic employment account for

¹ We are indebted to several people for essential help: to Ronald Schoenberg for repeatedly and ingeniously modifying the computer program to meet our ever-increasing needs and for advice on identifying complex reciprocal-effects models; to Carrie Schoenbach, Bruce Roberts, and Margaret Renfors for conscientious and thoughtful computer programming and data analysis; to Virginia Marbley for uncomplainingly and effectively transcribing innumerable revisions of this paper; and to Carrie Schoenbach, Ronald Schoenberg, Paul D. Allison, Jeffrey K. Liker, Jeylan T. Mortimer, Karen A. Miller, Kazimierz Slomczynski, and Joanne Miller for critical readings of earlier versions of this paper. The models in this paper were estimated by MLIS, an advanced version of LISREL (Jöreskog and van Thillo 1972) developed by Ronald Schoenberg. Requests for reprints should be sent to Melvin L. Kohn/Carmi Schooler, National Institutes of Health, Building 31, Room 4C-11, Bethesda, Maryland 20205.

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the correlations between personality and employment in bureaucracy. In those studies, we recognized explicitly that correlations between job and personality do not necessarily mean that conditions of work have a causal impact on personality. The correlations may reflect entirely processes of selective recruitment, selective retention, and the ongoing efforts of workers to mold their jobs to match their needs, values, and abilities.

Still using cross-sectional data, we next attempted to analyze empirically whether work affects or only reflects personality (Kohn and Schooler 1973; Kohn 1976). We used two-stage least squares as our method of estimating the reciprocal effects of one crucial condition of work—its substantive complexity—and several facets of psychological functioning. Those analyses yielded *prima facie* evidence that job conditions actually do affect psychological functioning, thus justifying the considerable investment of time, effort, and money needed to secure the longitudinal data necessary for a more definitive assessment.²

With longitudinal data, using confirmatory factor analysis and linear structural equations causal analysis, we did a prototypic longitudinal analysis of the reciprocal effects of the substantive complexity of work and intellectual flexibility (Kohn and Schooler 1978). That analysis provided convincing evidence that the substantive complexity of work both affects and is affected by this one, obviously important, facet of psychological functioning. In the present analysis, we enlarge the causal model to take into account not only a broader range of job conditions (as we did in Kohn and Schooler 1981) but also a broader range of psychological variables. The goal of this paper is to develop and assess a general model of the reciprocal effects of job conditions and major dimensions of personality.

DATA

The baseline data come from interviews conducted in 1964 with a sample of 3,101 men, representative of all men employed in civilian occupations in the United States. (For more specific information on sample and research design, see Kohn [1969], pp. 235–64.) In 1974 the National Opinion Research Center (NORC) carried out a follow-up survey for us, interviewing a representative subsample of approximately one-fourth of those men who were still under 65 years of age. (For an assessment of the rep-

² Further evidence of job conditions affecting critical aspects of personality is provided by subsequent studies. Many of these studies are reviewed in Kohn (1977, 1981). The most pertinent are the longitudinal studies by Mortimer and Lorence (1979a, 1979b). Also pertinent are the longitudinal studies by Andrisani and Abeles (1976), Andrisani and Nestel (1976), and Brousseau (1978), and the cross-sectional studies by Coburn and Edwards (1976), Grabb (1981), Hoff and Grüneisen (1977), St. Peter (1975), and our colleagues' and our study of women's job conditions and psychological functioning (Miller et al. 1979).

representativeness of the original sample, see Kohn [1969], appendix C. For an assessment of the follow-up sample, see Kohn and Schooler 1978.)

JOB CONDITIONS

The present analysis focuses on 14 job conditions that have been shown to have substantial impact on men's psychological functioning, independent of other pertinent job conditions and of education (see Kohn and Schooler 1973). Together they identify a man's place in the organizational structure, his opportunities for occupational self-direction, the principal job pressures to which he is subject, and the principal extrinsic risks and rewards built into his job.

Specifically, we consider these aspects of an individual's place in the organizational structure: ownership, bureaucratization, and hierarchical position. The facets of occupational self-direction that we measure are the substantive complexity of the work, the closeness of supervision, and the degree of routinization. The job pressures are time pressure, heaviness, dirtiness, and the number of hours worked in the average week. The extrinsic risks and rewards are the probability of being held responsible for things outside one's control, the risk of losing one's job or business, job protections, and job income. We call these conditions *structural imperatives* of the job.³ They are "structural" in two senses: they are built into the structure of the job, and they are functions of the job's location in the structures of the economy and the society. These job conditions are "imperatives" in that they define the occupational realities that every worker must face.

A Measurement Model of Occupational Self-Direction

We begin with a measurement model of *occupational self-direction*, by which we mean the use of initiative, thought, and independent judgment in work. Since the three job conditions that facilitate or inhibit the exercise of occupational self-direction—substantive complexity, closeness of supervision, and routinization—reflect one overarching concept, and since we have multiple indicators of two of them, we have developed a combined model, presented in figure 1, that encompasses all three.⁴

³ In an earlier analysis (Kohn and Schooler 1973) we used the term "structural imperatives of the job" to describe a similar but not identical set of job conditions. For an explanation of the changes, see Kohn and Schooler (1981).

⁴ In fig. 1, in all subsequent figures, and in the text, all paths and correlations are expressed in standardized form. Standardized values are more easily comprehended than are metric values when the metric is not inherently meaningful. All computations have been based on unstandardized variance-covariance matrices.

We define the *substantive complexity of work* as the degree to which performance of the work requires thought and independent judgment. Substantively complex work by its very nature requires making many decisions that must take into account ill-defined or apparently conflicting contingencies. Detailed questioning of each respondent in 1964 and again in 1974 (see Kohn 1969, pp. 153-55, 271-76; or Kohn and Schooler 1978) provides the basis for seven ratings of the substantive complexity of each job: appraisals of the complexity of the man's work in that job with things, with data, and with people; an overall appraisal of the complexity of his work; and estimates of the amount of time he spends working at each type of activity. The ratings are treated in figure 1 as indicators of the underlying but not directly measured concept, the substantive complexity of that job. We have information also about the complexity of each man's work in two earlier jobs, based on extrapolations from job history information (see Kohn and Schooler 1973, pp. 111-12 and n. 21), extrapolations that we use as indicators of a single concept, earlier (pre-1964) substantive complexity.

Closeness of supervision limits one's opportunities for occupational self-direction: a worker cannot exercise occupational self-direction if he is closely supervised, although not being closely supervised does not necessarily mean that he is required or even free to use initiative, thought, and independent judgment. Closeness of supervision is measured by a worker's subjective appraisals of his freedom to disagree with his supervisor, how closely he is supervised, the extent to which his supervisor tells him what to do instead of discussing it with him, and the importance in his job of doing what one is told to do.

Routinization is the final facet of occupational self-direction; highly routinized (repetitive and predictable) jobs restrict possibilities for exercising initiative, thought, and judgment, while jobs with a variety of unpredictable tasks may facilitate or even require self-direction. Respondents' work was coded from most variable (the work involves doing different things in different ways and one cannot predict what may come up) to least variable (the work is unvaryingly repetitive).

The measurement model for occupational self-direction, including the error correlations depicted in figure 1, provides a good fit to the variance-covariance matrix of the indicators. The $\chi^2 = 588.54$, with 245 degrees of freedom (df), for a ratio of 2.40.

A Model of Job Structure

Now we expand the measurement model of occupational self-direction into a causal model of job structure. As shown in figure 2, this model includes

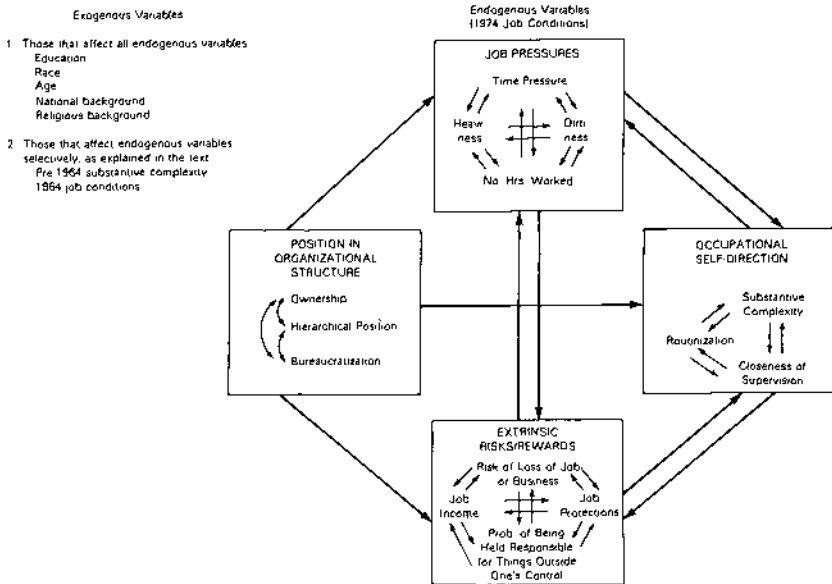


FIG. 2.—A priori model: job structure

several other structural imperatives of the job.⁵ Since we do not have multiple indicators of any of these job conditions, it is not possible to develop measurement models for any of them.⁶ We therefore use single-indicator measures of these job conditions, recognizing that each is subject to some unknown degree of measurement error, which may result in our under-

⁵ Of the three aspects of a man's position in the organizational structure that we measure, bureaucratization of the firm or organization in which he is employed is indexed on the basis of the number of formal levels of supervision and the size of the organization (see Kohn 1971), ownership/nonownership is based on his self-report, and position in the supervisory hierarchy is measured in terms of the number of people over whom he says he has direct or indirect supervisory authority. Of the four job pressures, three are measured by the respondent's appraisals—frequency of time pressure, how dirty he gets in his work, and the number of hours he works in an average week. The fourth, heaviness of work, is our appraisal, based on his description of his work with things. Extrinsic risks and rewards are measured by the individual's perceptions of the likelihood of being held responsible for things outside his control and of the risk of losing his job or business, his reported income, and a simple additive index of whether his job provides such benefits as job security and sick leave. These measures are described more fully in Kohn and Schooler (1973).

⁶ Nor do we wish to incorporate the specific job conditions into more general measurement models of organizational structure, job pressures, or extrinsic risks and rewards, because to do so would take away our ability to assess the separate effects of particular job conditions. For example, if we used time pressure, heaviness, dirtiness, and number of hours worked as indicators in a measurement model of job pressure, we would no longer be able to examine the separate effects of each of the four types of job pressures.

estimating the effects of these job conditions on each other, on other job conditions, and, in later models, on personality.

The causal model includes as potentially pertinent exogenous variables not only the pre-1974 job conditions but also those social characteristics that the research literature and our own earlier analyses give us reason to believe might have affected the job placement of men who are at least 10 years into their occupational careers. These are the respondent's level of education, race, age, national background, and religious background.⁷ Our model should therefore be thought of as a depiction of men-in-jobs rather than as an abstract picture of job structure per se. We deliberately omit other social characteristics (e.g., parental socioeconomic characteristics) that might have affected job placement at earlier career stages but should not directly affect job placement once men are well into their careers.

With some exceptions, to be discussed below, there is no reason in principle why the 14 job conditions might not affect each other both contemporaneously (albeit not necessarily instantaneously) and over time. Therefore we should prefer to assess causal models that simultaneously allow both "contemporaneous" effects, that is, the effects of present job conditions on each other, and "lagged" effects, that is, the effects of the conditions of work in the job held 10 years earlier on present job conditions. (There are two types of lagged effects: "stabilities," i.e., the effects of job conditions in 1964 on the same job conditions in 1974, and "cross-lagged" effects, i.e., the effects of job conditions in 1964 on other job conditions in 1974.) Unfortunately, if our model were to allow both contemporaneous and cross-lagged effects, the number of parameters to be estimated would surpass what is possible with the information available.

To identify the equations, we must assume that some effects cannot be direct but only indirect. (A variable that identifies an equation by not being allowed to have a direct effect on the dependent variable of that equation is called an instrument.) If we had pre-1964 measures of all structural imperatives of the job—as we have for substantive complexity—those measures would provide the instrumentation for simultaneous assessment of the contemporaneous and cross-lagged effects of job conditions on one another. Lacking such instrumentation, we must give priority to testing either contemporaneous or cross-lagged effects. Our choice is to give priority to contemporaneous effects, using the 1964 job conditions as instruments to identify the effects of 1974 job conditions on one another.

We give priority to contemporaneous effects for two reasons. First, we must take seriously the structural integrity of the job. It would deny the

⁷ The indices of national background and religious background are linear approximations to these concepts (see Schooler 1972, 1976; Kohn and Schooler 1978).

reality of job structure to assume, for example, that the likelihood of being held responsible for things outside one's control depends more on the time pressure experienced in some past job than on the time pressure experienced in the present job. Second, the simultaneous assessment of contemporaneous effects provides a straightforward way of accomplishing our principal intent—to decompose the correlation between, for example, the substantive complexity of men's current jobs and the closeness with which men are supervised in these jobs. Testing the effects of 1964 substantive complexity on 1974 closeness of supervision and of 1964 closeness of supervision on 1974 substantive complexity—while clearly pertinent—does not deal as directly with the critical correlation. If the interval between measurements were 10 days or even 10 weeks, giving priority to lagged effects might very well be justified. But with a 10-year interval between measurements, an unequivocal test of reciprocity can be accomplished only by allowing reciprocal contemporaneous effects.

When in a model that tests only contemporaneous effects we find that some job condition (say, closeness of supervision) significantly affects some other job condition (say, substantive complexity), we can reasonably assume that the effect is real, although we do not know whether it is entirely contemporaneous. When, however, that effect proves not to be statistically significant in such a model, we have no basis for concluding that supervision really has no impact on substantive complexity. A full model, depicting both contemporaneous and lagged effects, might show that 1964 closeness of supervision has had a significant lagged effect on 1974 substantive complexity; a full model might even reveal a significant contemporaneous effect that was not previously apparent.

Being unable to test a full model, we search now for effects that we may have missed, by fixing at zero the paths that were nonsignificant in the contemporaneous-only model and estimating the corresponding lagged paths.⁸ If we were again to find that closeness of supervision has no statistically significant effect on substantive complexity, we could conclude that closeness of supervision would not affect substantive complexity even in a full model. However, if we were now to find a significant lagged effect, we could be reasonably confident that closeness of supervision does affect substantive complexity. We could not, however, be certain that this effect is entirely lagged, for in a model that does not simultaneously allow a contemporaneous effect, a lagged effect has two components. One is the truly lagged effect of 1964 closeness of supervision on 1974 substantive

⁸ Fixing the nonsignificant contemporaneous paths at zero in no way distorts the models presented here. In all instances, those paths are so small that removing them from the models does not change the magnitudes of the remaining parameters to more than a trivial extent. Nor does adding lagged paths affect the magnitudes of the contemporaneous paths in any of our models.

complexity. The other is the combination of the lagged effect of 1964 closeness of supervision on 1974 closeness of supervision and the contemporaneous effect of 1974 closeness of supervision on 1974 substantive complexity. Thus we cannot be confident that what appear to be lagged effects of job conditions on one another are truly lagged, but, whether they are in fact lagged, contemporaneous, or both, they are real.

In assessing the model of job structure, we must recognize that the individual's place in the organizational structure—as defined by ownership, bureaucratization, and hierarchical position—cannot be contemporaneously affected by any other job condition. This is definitionally true, for a change from ownership to nonownership or the reverse, or from a more bureaucratic to a less bureaucratic firm or organization, or the reverse, or from a higher to a lower position in the supervisory hierarchy, or the reverse, signifies a change in job. It is not even possible for the three aspects of organizational structure to affect each other without the job becoming a different job.⁹ But if there can be no contemporaneous effects of job conditions on ownership, bureaucratization, or hierarchical position, then all lagged effects on ownership, bureaucratization, and hierarchical position are identified and can be tested.

The model, thus identified, is presented in table 1. From this table, we learn the following.

1. On the most general level: job conditions are intricately linked; all structural imperatives of the job affect and are affected by one or more of the others.

2. Position in the organizational structure has a widespread impact on other conditions of work. Ownership results in doing substantively more complex work, at higher levels of income, but with a greater risk of losing one's job or business. Bureaucratic firms and organizations provide substantively more complex work, more extensive job protections, higher income, physically lighter work, and fewer hours of work. Higher position in the supervisory hierarchy results in substantively more complex, less routine, less closely supervised, and physically lighter work; higher levels of pay; and more hours of work per week. In short, the three facets of position in the organizational structure have similar effects on substantive complexity and job income but decidedly different effects on the number of hours worked and on job protections and job risks, with ownership maximizing risk and bureaucratization maximizing job protections.

3. The substantive complexity of work stands out as the keystone of the entire job structure—affected by and, in turn, affecting many other job conditions. Not only do ownership, bureaucratization, and hierarchical

⁹ Because we do not allow ownership, bureaucratization, or hierarchical position to affect each other, we allow their residuals to correlate.

TABLE 1—A MODEL OF JOB STRUCTURE

		STATISTICALLY SIGNIFICANT EFFECTS OF:											
On 1974	Substantive Complexity	Routinization	Closeness of Supervision	Ownership	Bureaucratization	Position in Hierarchy	Time Pressure	Heaviness	Hours of Work	"Held Responsible"	Risk of Less of Job	Job Protections	Job Income
	Substantive complexity	.36(L)	-.11(C)	-.24(C)	.09(C)	.13(C)	.06(C)	.0	.0	.0	.0	.18(C)	.06(C)
	Routinization	.0	.27(L)	.08(L)	.0	.0	-.09(C)	.0	.0	.0	.0	-.09(C)	.0
	Closeness of supervision	-.31(L)	.0	.0	.55(L)	.0	-.15(C)	.0	.0	.0	.0	.0	.0
	Ownership	.08(L)	.0	.0	.13(L)	.48(L)	.0	.0	.0	.0	.0	.0	.0
	Bureaucratization	.0	.0	.0	.0	.0	.30(L)	.0	.0	.0	.0	.0	.0
	Position in hierarchy	.20(L)	.0	.0	.0	.0	.0	.0	.0	.0	.0	.10(L)	.10(L)
	Time pressure	.11(C)	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.30(L)
	Heaviness	.0	-.12(C)	.0	.0	-.09(C)	.0	.0	.0	.0	.0	-.10(C)	.0
	Hours of work	-.40(C)	-.11(C)	.0	.0	-.23(C)	.06(C)	.0	.0	.0	.0	.0	.0
	"Held responsible"	.10(C)	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.17(C)
	Risk of loss of job	.17(C)	-.08(L)	.0	.32(C)	.0	.0	.0	.0	.0	.0	.0	.0
	Job protections	.0	.11(L)	.0	.0	.35(C)	.0	.0	.0	.0	.0	.0	.0
	Job income	.17(C)	.0	.0	.20(C)	.18(C)	.15(C)	.0	.0	.0	.0	.0	.0
	Substantive complexity	.0	.0	.0	.0	.0	.08(L)	.0	.0	.0	.0	.0	.0
	Routinization	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	-.10(L)
	Closeness of supervision	-.11(C)	.10(L)	.0	.11(C)	.19(C)	.06(C)	.0	.0	.0	.0	.0	-.12(L)
	Ownership	.0	.0	.0	.0	.0	-.09(L)	.0	.0	.0	.0	.0	.0
	Bureaucratization	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	Position in hierarchy	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	Time pressure	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.14(C)
	Heaviness	.21(L)	.26(C)	.09(L)	.07(C)	.0	.0	.0	.0	.0	.0	.0	.0
	Hours of work	.0	.39(L)	.15(C)	.0	.0	.0	.0	.0	.0	.0	.0	.0
	"Held responsible"	.0	.15(L)	.16(L)	.24(L)	.0	.0	.0	.0	.0	.0	.0	.24(C)
	Risk of loss of job	.0	.0	.08(C)	.0	.21(L)	.0	.0	.0	.0	.0	.0	.0
	Job protections	.13(C)	.0	.0	.0	.0	.34(L)	.0	.0	.0	.0	.0	.0
	Job income	.0	-.11(C)	.0	.0	.0	.0	.0	.0	.0	.0	.0	.34(L)

NOTE.—Paths from pre-1964 substantive complexity and from social background characteristics are not shown in this table. L = a lagged effect (e.g., of 1964 substantive complexity on 1974 substantive complexity; C = a contemporaneous effect (e.g., of 1974 substantive complexity on 1974 time pressure); 0 means a nonsignificant effect that has subsequently been fixed at zero.

position increase the substantive complexity of work, but so, too, do non-routinized working conditions, freedom from close supervision, greater time pressure, and, over time, job protections. The substantive complexity of work, in turn, affects several other aspects of work: doing substantively more complex work results in doing work that is less dirty and increases the probability of being held responsible for things outside one's control, of receiving higher income, working under greater time pressure, and working longer hours. Over time, doing substantively more complex work results also in being less closely supervised, rising in the supervisory hierarchy, and becoming an owner. In short, substantively complex work lies at the core of highly placed, responsible, demanding but rewarding jobs. It is the key link between the position of a job in the organizational structure and the other, more proximate, conditions of work. No other job condition is as intricately bound to the entire set of structural imperatives of the job as is substantive complexity.

4. Finally, with only one possible exception, all the statistically significant effects of job conditions on one another are consonant with past knowledge about the organization of work. They can be seen as the outcomes either of direct processes (e.g., close supervision decreasing substantive complexity) or of well-known indirect processes (e.g., routinization decreasing heaviness and dirtiness through mechanization). The only finding that may contradict expectations is that heavy work results in more freedom from supervision; but, then, the expectation may be stereotypic, based perhaps on our not distinguishing heavy from dirty work. It is pertinent that jobs requiring heavy work tend to be performed out of sight of supervisors—jobs such as farming, construction carpentry, and long-haul trucking (see Kohn and Schooler 1973, table 2).

Overall, then, the model demonstrates that job conditions are linked intricately and meaningfully, with position in the organizational structure having widespread effects on other job conditions, and with the substantive complexity of work pivotal to the entire job structure.

JOB CONDITIONS AND IDEATIONAL FLEXIBILITY

By enlarging the model of job structure to include one or another facet of personality, we can assess the reciprocal effects of job conditions and each facet of personality. We begin by assessing the reciprocal effects of job conditions and ideational flexibility.

In our surveys, intellectual flexibility is evidenced by performance in handling cognitive problems that require weighing both sides of an economic or a social issue, in differentiating figure from ground in complex color designs, and in drawing a recognizably human figure whose parts fit together in a meaningful whole. We also include the interviewers' evalua-

tions of the respondents' "intelligence" and a simple count of the respondents' propensity to agree with agree-disagree questions. All these we take to reflect, in some substantial part, intellectual flexibility. We use the measurement model for intellectual flexibility that was developed in Kohn and Schooler (1978). There are two components to intellectual flexibility, one ideational, the other perceptual. The ideational aspect concerns us here.

Identifying the effects of job conditions on ideational flexibility poses the same problems that we faced in the model of job structure, and we follow the same procedures. Identifying the effects of ideational flexibility on job conditions, however, is greatly facilitated if we posit that social characteristics that employers (even discriminatory ones) would not interpret as job credentials do not directly affect the job conditions of men who are at least 10 years into their work careers. The rationale is that maternal and paternal education, paternal occupational status, maternal and paternal grandfathers' occupational status, urbanness and region of origin, and number of children in the parental family may have affected job placements earlier in the men's careers, but that by the time of the follow-up study these noncredentialing social characteristics would no longer have any direct bearing on job placement. Thus they can be used as instruments to identify the contemporaneous effects of ideational flexibility on job conditions, a procedure that permits us to test the lagged effects of ideational flexibility even when its contemporaneous effects are statistically significant. We can therefore be much more confident about distinguishing the contemporaneous from the lagged effects of ideational flexibility on job conditions than we can about distinguishing the contemporaneous from the lagged effects of job conditions on other job conditions or on ideational flexibility.

As in the model of job structure, we must recognize that ownership, bureaucratization, and hierarchical position cannot be contemporaneously affected by anything else. This poses a dilemma: how best to model the effects of ownership, bureaucratization, and hierarchical position on ideational flexibility? On the one hand, the logic of assessing the directions of effects in the relationships between job conditions and ideational flexibility requires the simultaneous testing of pairs of reciprocal paths—from some job condition to ideational flexibility and from ideational flexibility to that same job condition. Since ideational flexibility cannot have direct contemporaneous effects on ownership, bureaucratization, and hierarchical position, allowing these job conditions to have direct contemporaneous effects on ideational flexibility would assume the very unidirectionality of effects that our entire analysis is designed to transcend. We would be prejudging the issue we are trying to evaluate. Fortunately, there is nothing to preclude our allowing ownership, bureaucratization, and hierarchical

position to have either direct lagged effects or indirect contemporaneous effects on ideational flexibility. On the other hand, to say that ownership, bureaucratization, and hierarchical position may have direct lagged or indirect contemporaneous effects on ideational flexibility does not necessarily prove that, in reality, they do not have direct contemporaneous effects. We deal with the dilemma by testing and comparing two alternative models—initially, a model that allows position in the organizational structure to have only indirect contemporaneous and direct lagged effects, later a model that allows organizational position to have direct contemporaneous effects on ideational flexibility.

The initial model of job conditions and ideational flexibility is presented in table 2. Since the effects of job conditions on one another are essentially unchanged by adding ideational flexibility (or any other facet of personality) to the model of job structure, we do not repeat in table 2 that part of the model already presented in the previous table.¹⁰ Three things stand out in this model.

1. Several conditions of the current job have statistically significant effects on current ideational flexibility, even with earlier ideational flexibility, pertinent social characteristics, and other job conditions statistically controlled. Doing substantively complex work, receiving higher income, and being at risk of losing one's job or business all increase ideational flexibility, whereas being closely supervised, doing heavy work, and thinking that one may be held responsible for things outside one's control tend to decrease ideational flexibility. In addition, time pressure in the job one held 10 years ago increases current ideational flexibility, while routinization and job protections in the earlier job decrease current ideational flexibility. The magnitudes of these effects are only small to moderate (ranging from 0.03 to 0.13), but it is nevertheless impressive that so many of the structural imperatives of the job significantly affect ideational flexibility, even under such stringent statistical controls. Overall, job conditions that facilitate or require intellectual alertness seem to increase ideational flexibility as measured in a nonwork situation; job conditions that minimize the necessity or desirability of intellectual alertness seem to decrease ideational flexibility. It is noteworthy that the substantive complexity of work, which we found to be central to the entire job struc-

¹⁰ Although adding ideational flexibility or any other facet of personality to the model of job structure never greatly affects the estimates of job effects on one another or the effects of social characteristics on job conditions, in a few instances an effect does become statistically nonsignificant. When this happens, we follow a practice used throughout this paper, fixing the nonsignificant effect at zero. We do so primarily to keep the number of estimated parameters within the capacity of the computer program. With an N of 687 and a robust model, statistically nonsignificant paths are ordinarily so small that it makes no difference to the remainder of the model whether they are left in or fixed at zero.

ture, has the strongest direct effect on ideational flexibility of any job condition.

2. Although this model does not permit ownership, bureaucratization, and hierarchical position to have direct contemporaneous effects on ideational flexibility, and although we find that they do not have statistically significant lagged effects, they do have modest indirect effects. All three aspects of position in the organizational structure affect conditions of work that bear on ideational flexibility; in particular, all three affect the substantive complexity of work. The alternative model—which permits po-

TABLE 2
RECIPROCAL EFFECTS OF JOB CONDITIONS AND IDEATIONAL FLEXIBILITY

	STATISTICALLY SIGNIFICANT EFFECTS OF:	
	Job Conditions (and Background Variables) on Ideational Flexibility	Ideational Flexibility on Job Conditions*
Job conditions:		
Substantive complexity . . . . .	.13(C)	.31(L)
Routinization	-.04(L)	.0
Closeness of supervision	-.03(C)	-.17(L)
Ownership . . . . .	.0	.07(L)
Bureaucratization . . . . .	.0	.07(L)
Position in hierarchy . . . . .	.0	.0
Time pressure . . . . .	.10(L)	.0
Heaviness	-.07(C)	.0
Dirtiness . . . . .	.0	.0
Hours of work . . . . .	.0	-.23(L)
"Held responsible"	-.06(C)	.0
Risk of loss of job or business . . . . .	.03(C)	.0
Job protections	-.09(L)	-.14(L)
Job income . . . . .	.06(C)	.0
Background variables:		
Education . . . . .	.0	...
Race . . . . .	.0	...
Age	-.14	...
National background . . . . .	.04	...
Religious background . . . . .	.0	...
Number of siblings . . . . .	.0	...
Region of origin . . . . .	.08	...
Urbanness of place raised	-.03	...
Mother's education	-.03	...
Father's education . . . . .	.07	...
Father's occupational status . . . . .	.0	...
Maternal grandfather's occupational status	-.03	...
Paternal grandfather's occupational status . . . . .	.0	...
Stability of ideational flexibility . . . . .	.70(L)	...

NOTE.—C = a contemporaneous effect; L = a lagged effect; .0 means a nonsignificant effect that has subsequently been fixed at zero.

* Effects of background variables and other job conditions on job conditions are not shown in this table.

sition in the organizational structure to have direct, unidirectional effects on ideational flexibility—sets upper limits for our estimates of the direct effects on ideational flexibility of ownership, bureaucratization, and hierarchical position and lower limits for our estimates of the direct effects on ideational flexibility of all other job conditions. Such a model shows that neither ownership nor bureaucratization would have a statistically significant direct effect on ideational flexibility. Hierarchical position would have a statistically significant direct effect, a path of 0.09. The direct contemporaneous effects of other job conditions would be somewhat reduced; in particular, the direct effect of substantive complexity on ideational flexibility would be reduced from 0.13 to 0.10. Juxtaposing the two models, we conclude that hierarchical position has a direct contemporaneous effect on ideational flexibility of no more than 0.09, while substantive complexity has a direct contemporaneous effect on ideational flexibility of no less than 0.10 and no more than 0.13. The unresolved issue is simply the degree to which the effect of hierarchical position is mediated through substantive complexity. In any case, both substantive complexity and hierarchical position are clearly pertinent to ideational flexibility.

3. The effects of ideational flexibility on job conditions are impressive, albeit entirely lagged, suggesting that the process by which ideational flexibility affects conditions of work is primarily one of selective recruitment and retention, not one of job molding, which we would expect to be more contemporaneous. Greater ideational flexibility in 1964 is conducive to working at jobs of greater substantive complexity in 1974, with less supervision, fewer hours of work, and fewer job protections. Greater ideational flexibility also increases the probability of becoming an owner or working in a bureaucratic firm or organization. In sum, the long-term consequence of greater ideational flexibility is the increased likelihood of attaining a self-directed position. Although this process occurs only gradually, over the course of time its cumulative impact is far from negligible.

SELF-CONCEPTION AND SOCIAL ORIENTATION

Do job conditions affect, and are they affected by, other facets of personality in the same way that they affect and are affected by ideational flexibility? Does the substantive complexity of work play a pivotal role vis-à-vis self-conception and social orientation? Alternatively, might time pressure or job protections or dirtiness be more important than substantive complexity for such facets of personality as anxiety or self-esteem? To answer these questions, we substitute for ideational flexibility each of several aspects of self-conception and social orientation that a priori logic and our past research give us reason to think might influence job recruit-

ment and retention or might be affected by job experience. Specifically, we consider authoritarian conservatism, anxiety, trust, self-confidence, self-deprecation, idea conformity, fatalism, and standards of morality. The measurement models for these concepts are summarized in the Appendix.

The findings derived from the causal models for self-conception and social orientation are presented in table 3, which shows the following.

1. All of the proximate conditions of work except heaviness affect directly one or more aspects of self-conception and social orientation. With only a few exceptions (to be discussed below), the effects of job conditions on personality are readily interpretable as a learning-generalization process—learning from the job and generalizing the lessons to off-the-job realities. In particular, occupational self-direction leads to self-directed orientations to self and society: men who are self-directed in their work are consistently more likely to become nonauthoritarian, to develop personally more responsible standards of morality, to become self-confident and not self-deprecatory, to become less fatalistic, less anxious, and less conformist in their ideas. Job pressures are much less consistent in their impact on self-conception and social orientation. Heaviness has no statistically significant effects; dirtiness is demoralizing; time pressure is in the main self-enhancing; and working longer hours tends, in the long run, to be reassuring. Certainly, one cannot conclude that job pressures, as we have measured them, are uniform in their psychological import. Extrinsic risks and rewards have mainly predictable consequences—risks are threatening, rewards are reassuring. But here we encounter the few real anomalies: higher income leads over time to less self-confidence and to greater self-deprecation; job protections are conducive to authoritarian conservatism and to distrustfulness. It is noteworthy that the anomalies involve risks and rewards attached to the job, instead of the actual conditions of work.¹¹ Overall, the results are most clear-cut for those job conditions that are most central to the work itself; in particular, they demonstrate the importance for self-conception and social orientation of occupational self-direction.

2. Ownership, bureaucratization, and position in the supervisory hier-

¹¹ We have resolved a few other minor anomalies that we think are based on inadequate identification. In particular, when the reciprocal paths between some job condition and some facet of self-conception or social orientation were both statistically significant but of opposite sign, we tested each path alone, fixing the other path at zero. The tested path was generally reduced in magnitude, usually to statistical non-significance, in which case it, too, was fixed at zero. In a few instances, one or the other path (never both) remained statistically significant, and we kept it. This procedure may have resulted in our losing some real, opposite-signed effects, but since the identification on which the model is based is not strong enough to ensure that such effects are not simply a statistical artifact, we prefer to lose them rather than claim effects that may not be real and risk distorting the rest of the model.

TABLE 3 (Continued)

	Substantive Complexity	Routinization	Closeness of Supervision	Ownership†	Bureau- cratization†	Position in Hierarchy†	Time Pressure	Heaviness
Authoritarian conservatism.....	...	...	.09(L)	-.09(L)	...	...	...	...
Personally responsible criteria of morality.....	.05(L)	...	-.09(L)	...	...	...	...	...
Trustfulness.....	...	...	...	...	...	...	...	...
Self-confidence.....	...	...	...	...	...	...	...	...
Self-deprecation.....	...	...	...	...	...	...	...	...
Fatalism.....	...	...	.18(L)	...	...	-.07(L)	...	.10(C)§
Anxiety.....	...	...	...	...	...	...	.09(C)	...
Idea conformity.....	-.05(L)	...	.12(C)	...	...	...	...	...
	Dirtyness	Hours of Work	"Held Responsible"	Risk of Loss of Job	Job Protections	Job Income		
Authoritarian conservatism.....	...	...	...	...	...	...	...	...
Personally responsible criteria of morality.....	...	...	-.09(L)	...	...	...	...	...
Trustfulness.....	...	-.15(L)	-.13(C)	...	.10(C)	...	...	...
Self-confidence.....	-.06(L)	.10(L)	...	...	...	...	...	...
Self-deprecation.....	...	...	...	...	...	...	...	...
Fatalism.....	...	.12(L)	...	...	...	...	...	...
Anxiety.....	...	...	.10(C)	...	...	...	...	...
Idea conformity.....	...	...	-.15(C)	...	...	...	...	...

† Other job conditions, including the 1964 analog of that particular job condition, and "credentialing" background variables are controlled.

§ There is also a lagged effect of .08.

TABLE 3

RECIPROCAL EFFECTS OF JOB CONDITIONS AND EACH OF SEVERAL FACETS OF SELF-CONCEPTION AND SOCIAL ORIENTATION
 A. STATISTICALLY SIGNIFICANT EFFECTS OF JOB CONDITIONS ON SELF-CONCEPTION AND SOCIAL ORIENTATION*

	Substantive Complexity	Routinization	Closeness of Supervision	Ownership†	Bureau-cratization†	Position in Hierarchy†	Time Pressure	Heaviness
Authoritarian conservatism	-.11(C)	..	..	..	..	..	..	..
Personally responsible criteria of morality . . . . .	.27(C)	..	..	..	..	..	..	..
Trustfulness . . . . .	..	-.08(C)	-.07(C)	..	..	..	-.05(C)	..
Self-confidence . . . . .	..	..	-.14(L)	..	..	..	-.10(C)	..
Self-deprecation	-.25(C)	..	..	..	-.07(L)	..	..	..
Fatalism	-.12(L)	..	..	..	..	..	..	..
Anxiety . . . . .	..	..	.18(C)	..	..	..	..	..
Idea conformity . . . . .	..	.10(C)	.12(C)	..	..	..	-.10(L)	..
	Hours of Work	"Held Responsible"	Risk of Loss of Job	Job Protections	Job Income	Stability Over Time		
Authoritarian conservatism . . . . .	..	.07(C)	..	.06(C)	..	(.59)		
Personally responsible criteria of morality . . . . .	..	-.08(L)	..	..	..	(.53)		
Trustfulness	-.05(C)	..	-.08(L)	-.09(C)	.11(C)	(.70)		
Self-confidence . . . . .	..	..	..	.13(C)	-.08(L)	(.50)		
Self-deprecation . . . . .	..	-.11(L)	..	..	.07(L)	(.54)		
Fatalism . . . . .	..	..	..	..	-.09(C)	(.57)		
Anxiety . . . . .	.12(C)	..	..	-.13(C)	..	(.51)		
Idea conformity . . . . .	..	..	..	-.10(C)	..	(.35)		

* Other job conditions, the 1964 level of that facet of self-conception or social orientation, and all background variables are controlled.

† The effects on and of ownership, bureaucratization, and position in the supervisory hierarchy can only be lagged in these models.

archy affect the job conditions that have the most widespread effects on self-conception and social orientation—substantive complexity, closeness of supervision, job protections, and job income. Alternative models that allow position in the organizational structure to affect directly the several facets of self-conception and social orientation show that both ownership and bureaucratization would affect trustfulness negatively. Bureaucratization would have a contemporaneous, instead of a lagged, negative effect on self-deprecation. Nevertheless, the effects of proximate job conditions depicted in table 3 would be unchanged.

3. Almost every facet of self-conception and social orientation we have examined affects at least one job condition. These effects appear to be preponderantly lagged. Although there are a few contemporaneous effects of self-conception and social orientation on job conditions, we cannot be altogether sure of their meaning, because some of them may reflect, not personality affecting actual conditions of work, but personality affecting one's perceptions of those conditions. Thus, for example, seeing oneself as being held responsible for things outside one's control is a highly subjective appraisal. Similarly, although anxious people may behave in ways that result in greater pressure of time, perhaps they simply feel more time pressured. Still, some of the affected job conditions—notably, the heaviness of work, job protections, and closeness of supervision—are based on more objective indices. In any case, there is no reason to doubt the validity of the lagged effects, which pertain primarily to more objectively measured characteristics of the job, such as hours of work, the substantive complexity of work, and closeness of supervision. These lagged effects are not dramatic in magnitude, but they demonstrate that the personalities of workers sooner or later do affect their conditions of work. In particular, men who have self-directed orientations—who take personal responsibility for their own moral standards, who do not have authoritarian conservative beliefs, who are not fatalistic, who are not conformist in their ideas—are more likely over the course of time to attain responsible, self-directed positions.

TOWARD AN OVERALL MODEL OF JOB CONDITIONS AND PERSONALITY

An obvious limitation of the analysis thus far is that, while we have considered a number of job conditions simultaneously, we have dealt with ideational flexibility and the several facets of self-conception and social orientation only in separate models. A full assessment requires a model of several job conditions and several dimensions of personality. Such a model would permit us to consider such questions as whether some aspects of personality play a mediating role between job conditions and other aspects of personality (as is hypothesized about intellectual flexibility in Kohn

1980), whether job conditions continue to affect particular aspects of personality even when other aspects of personality are controlled statistically, and whether particular aspects of personality continue to affect job conditions even with other aspects of personality controlled statistically.

Attempting to deal with all eight facets of self-conception and social orientation in one causal model would not only be unduly complex but would also result in serious problems of linear dependency. Instead, we have performed a "second-order" confirmatory factor analysis, based on the hypothesis that there are two principal underlying dimensions: self-directedness versus conformity to external authority and a sense of distress versus a sense of well-being.

Self-directedness implies the beliefs that one has the personal capacity to take responsibility for one's actions and that society is so constituted as to make self-direction possible. In our earlier work (Kohn and Schooler 1969; Kohn 1969, chaps. 5 and 11), we interpreted the relationships of social class with self-conception and social orientation as reflecting the propensity of men in higher social class positions to believe that their own capacities and the nature of the world around them make self-direction seem both possible and efficacious. Men of lower social position, on the contrary, are more likely to believe that conformity to external authority is all that their own capacities and the exigencies of the world allow. Implicit in these interpretations is the hypothesis that several of the facets of self-conception and social orientation measured in this study reflect self-directedness or conformity to external authority, albeit imperfectly and in varying degrees.

The hypothesis that a sense of well-being or of distress constitutes a second principal dimension underlying the several facets of self-conception and social orientation is based in the main on our original intent, to index all major aspects of psychological functioning that might affect job placement or be affected by job conditions. We strove to measure not only a man's assessment of personal efficacy but also his feelings of comfort or pain. Self-directedness and conformity may each have distinct psychic costs and rewards.

The second-order model, presented in figure 3, confirms our expectations. Self-directedness is reflected in not having authoritarian conservative beliefs, in having personally responsible standards of morality, in being trustful of others, in not being self-deprecatory, in not being conformist in one's ideas, and in not being fatalistic—all of which is certainly in accord with our premises. Distress is reflected in anxiety, self-deprecation, lack of self-confidence, nonconformity in one's ideas, and distrust—a combination which certainly appears valid. This model, which allows over-time correlations of the residuals of the first-order concepts but deliberately does not permit any intra-time correlated residuals, fits the data

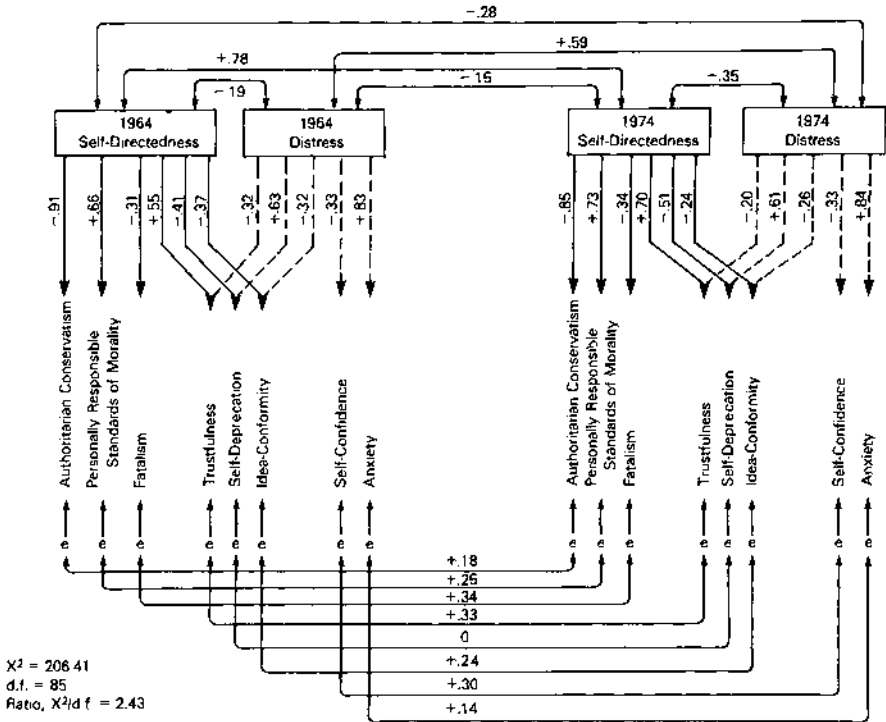


FIG. 3.—Second-order confirmatory factor analysis of self-conception and social orientation.

reasonably well: $\chi^2 = 206.41$, with 85 df, for a ratio of 2.43. Together with ideational flexibility, the model provides a partial but useful conceptualization of personality.

JOB CONDITIONS, IDEATIONAL FLEXIBILITY, SELF-DIRECTEDNESS, AND DISTRESS

Treating personality in terms of three basic dimensions—ideational flexibility, self-directedness, and distress—enables us to develop a general model of job conditions and some principal dimensions of personality.¹² In testing this model, we face a new problem of identification: how best to identify the effects of the three dimensions of personality on one an-

¹² One of the indicators of ideational flexibility is the respondent's propensity to agree with "agree-disagree" questions. Because such questions are built into the mode of inquiry used in assessing self-conception and social orientation, there is linear dependence between ideational flexibility and self-directedness. We solve the problem by using a modified measurement model of intellectual flexibility that does not include the "agree score" as an indicator. Factor scores of ideational flexibility based on the two models correlate .94.

other? We use the same procedure as for identifying the effects of job conditions on one another and on personality, namely, giving priority to contemporaneous effects and using the cross-lagged effects as instruments. As it turns out, there are two nonsignificant contemporaneous intrapsychic effects (those relating distress and ideational flexibility), and their lagged analogs are also nonsignificant (see table 4).

The causal model presented in table 4 depicts a dynamic system in which job conditions affect all three dimensions of personality, all three dimensions of personality affect job conditions, and the three dimensions of personality affect one another. More concretely: the effects of job conditions on personality are essentially the same as those we have seen in the separate analyses of the relationships of job conditions with ideational flexibility and with the eight facets of self-conception and social orientation. Thus ideational flexibility is increased by job conditions that facilitate intellectual alertness, with substantive complexity having the strongest effect of any proximate condition of work. The main job determinant of self-directedness, too, is substantive complexity. Job conditions that result sooner or later in feelings of distress are lack of job protections, dirty work, close supervision, a low position in the supervisory hierarchy, and fewer hours of work—all but the last suggesting oppressive working conditions, and the entire set typical of unskilled employment in the secondary labor market.¹³ These findings support a learning-generalization model: self-directed work leads to ideational flexibility and to a self-directed orientation to self and society; oppressive working conditions lead to distress.

The effects of personality on job conditions also are essentially the same as those found in the prior analyses. Ideationally more flexible men are more likely to achieve, in time, self-directed positions. A self-directed orientation results, over time, in being less closely supervised, having greater income, and doing physically lighter work, in short, in more advantageous jobs. Psychic distress results in working under greater time pressure and in a greater likelihood of being held responsible for things outside one's control. (Both of these subjective appraisals may, of course, be objectively inaccurate.) In time, distress leads also to doing physically lighter work. The only possible discrepancy between these findings and what we have seen before is that self-directedness does not have quite as wide a range of direct effects on job conditions as one might have expected. The reason becomes clear when we examine intrapsychic effects:

¹³ There is also an anomalous positive lagged path from 1964 job income to 1974 distress, a path opposite in sign to the zero-order correlation. This path may be artifactual; it is not statistically significant unless all the paths from current job conditions to distress present in the final model are allowed. Including or excluding this path does not affect the magnitudes of other paths in the model.

TABLE 4

RECIPROCAL EFFECTS OF JOB CONDITIONS, IDEATIONAL FLEXIBILITY,
 SELF-DIRECTEDNESS/CONFORMITY, AND DISTRESS/WELL-BEING

	STATISTICALLY SIGNIFICANT EFFECTS OF:					
	Job Conditions and Dimensions of Personality on:		Personality on:			
	Ideational Flexibility	Self-directedness	Distress	Ideational Flexibility on Job Conditions	Self-directedness on Job Conditions	Distress on Job Conditions
Job conditions:						
Substantive complexity.....	.11(C)	.12(C)	.0	.26(L)	.0	.0
Routinization.....	-.03(L)	.0	.0	.0	.0	.0
Closeness of supervision.....	.0	.0	.09(C)	.0	-.13(L)	.0
Ownership.....	.0	.0	.0	.06(L)	.0	.0
Bureaucratization.....	.0	.0	.0	.07(L)	.0	.0
Position in hierarchy.....	.0	.0	-.10(L)	.0	.0	.0
Time pressure.....	.05(C)	.0	.0	.0	.0	.11(C)
Heaviness.....	.07(C)	.0	.0	.0	-.11(L)	-.07(L)
Dirtyness.....	.0	.0	.10(C)	.0	.0	.0
Hours of work.....	.0	.0	-.08(C)	-.22(L)	.0	.0
"Held responsible".....	-.04(C)	-.06(C)	.0	.0	.0	.11(C)
Risk of loss of job or business.....	.0	-.04(L)	.0	.0	.0	.0
Job protections.....	-.08(L)	-.05(C)	-.16(C)	-.14(L)	.0	.0
Job income.....	.07(C)	.0	.11(L)	.0	.08(L)	.0
Dimensions of personality:						
Ideational flexibility.....	.57(L)	.13(C)	.0	....	....	....
Self-directedness.....	.24(C)	.43(L)	-.25(C)	....	....	....
Distress.....	.0	-.08(C)	.54(L)	....	....	....

NOTE.—Pertinent background variables are controlled. C = a contemporaneous effect; L = a lagged effect; .0 means a nonsignificant effect that has subsequently been fixed at zero.

self-directedness affects some job conditions, not directly, but indirectly through ideational flexibility.

The intrapsychic effects, the heretofore-missing component of the job-personality system, are impressive. Ideational flexibility both positively affects and is positively affected by self-directedness. Self-directedness both negatively affects and is negatively affected by distress. Noteworthy among these intrapsychic effects are the strong effects of self-directedness on both ideational flexibility and distress. Self-directedness affects both ideational flexibility and distress decidedly more strongly than they affect self-directedness or than they affect each other. If one of the three dimensions of personality is pivotal, it is self-directedness.¹⁴

DISCUSSION

Before summarizing the findings of these analyses and discussing their theoretical and practical import, it is necessary to point out the principal limitations of our data and of our methods of analysis.

The most important limitation of the analysis is one that we did not fully comprehend before actually doing longitudinal analysis—namely, that we have measurements at only two times and that there is a long interval between them. Both aspects pose serious problems. Identifying the models would be simpler and more certain with measurements at three times, for three measurements would provide instruments for assessing contemporaneous and lagged effects simultaneously. The 10-year time interval poses related yet different problems. Even in determining the effects of personality on job conditions, a process in which we could test contemporaneous and lagged effects simultaneously, we had to hedge the meaning of “contemporaneous” and “lagged.” To appraise the actual timing of effects, we should ideally have measurements taken at frequent intervals (for this purpose, three is probably not enough). Only then would we be able sharply to differentiate truly contemporaneous from truly lagged effects.

Another limitation of our analysis is the inadequacy, particularly the subjectivity, of several of our indices of job conditions. We are fearful, for example, that we may have given short shrift to routinization, which

¹⁴ We must ask again, What would be the consequence of allowing ownership, hierarchical position, and bureaucratization to affect directly the three dimensions of personality? Their effects on ideational flexibility would be as shown earlier. None of them would significantly affect self-directedness. Bureaucratization would increase distress and hierarchical position would decrease it, neither to any great extent; and the direct effect of bureaucratization would be opposite to its indirect effect through job protections. Most important, the effects of other job conditions on personality would not be greatly affected, the principal difference (as before) being a diminished, but still substantial, effect of substantive complexity on ideational flexibility.

is measured by a single, rather subjective indicator, in contrast to the substantive complexity of work, the best indexed of the job conditions we have studied. Clearly, multiple-indicator measures of job conditions are needed. As for the issue of subjectivity, the solution is not readily apparent. What is the best way to measure time pressure? Should the ideal index of time pressure include a subjective component or should it be, insofar as possible, a measure solely of the external requirements of the job?

There are other limitations, some of them discussed at sufficient length in our earlier papers (in particular, Kohn and Schooler 1973, 1978) that they need only be enumerated here: we have not been able to measure the organizational, technological, and interpersonal contexts of work as well as we have the actual conditions of work; we have done no systematic analysis of career patterns; we do not know whether the effects we have found are essentially the same for all age cohorts and for all segments of the work force; and we have not taken into account other important events that may have occurred in the lives of these men during the 10-year interval between the baseline and the follow-up interviews. A limitation emphasized in earlier papers no longer applies: our colleagues and we now have done an analysis of women's job conditions and psychological functioning (Miller et al. 1979), with findings strikingly consistent with those for men. There is a final issue that seems to us even more important than we had earlier recognized it to be—the desirability of validating our interview-based methods and findings with observation-based studies.

These limitations notwithstanding, this analysis does take us considerably beyond our original approach (Kohn and Schooler 1969; Kohn 1969), which allowed us only to assume that class-associated conditions of life affect the psychological functioning of individuals. We now have strong evidence that job conditions actually do affect personality, and also that personality affects job conditions. Moreover, these reciprocal processes are embedded in an intricate and complex web in which job conditions also affect each other and some aspects of personality affect others.

Our longitudinal analysis repeatedly demonstrates the importance for personality of occupational self-direction—especially the substantive complexity of work, the job condition most strongly related to social class in our earlier analyses. Jobs that facilitate occupational self-direction increase men's ideational flexibility and promote a self-directed orientation to self and to society; jobs that limit occupational self-direction decrease men's ideational flexibility and promote a conformist orientation to self and to society. The analysis further demonstrates that opportunities for exercising occupational self-direction—especially for doing substantively complex

work—are to a substantial extent determined by the job's location in the organizational structure, with ownership, bureaucratization, and a high position in the supervisory hierarchy all facilitating the exercise of occupational self-direction. These findings provide strong empirical support for the interpretation that class-associated conditions of work actually do affect personality. The longitudinal analysis also provides evidence of other job-to-personality effects, the most important being that oppressive working conditions produce a sense of distress. Implicit in all these findings is the consistent implication that the principal process by which a job affects personality is one of straightforward generalization from the lessons of the job to life off the job, instead of such less direct processes as compensation and reaction formation.

The longitudinal analysis demonstrates also that, over time, personality has important consequences for the individual's place in the job structure. Both ideational flexibility and a self-directed orientation lead, in time, to more responsible jobs that allow greater latitude for occupational self-direction. Feelings of distress lead to actual or perceived time pressure and uncertainty. We think it noteworthy that so many of the personality-to-job effects—particularly the effects of personality on the most objectively measured conditions of work—are lagged rather than contemporaneous. The implication is that job conditions are not readily modified to suit the needs or capacities of the individual worker. Over a long enough time, though, many men either modify their jobs or move to other jobs more consonant with their personalities. Thus the long-term effects of personality on job conditions are considerable. The process of job affecting man and man affecting job is truly reciprocal throughout adult life.

Finally, this analysis depicts a set of intrapsychic effects which contribute to the dynamic impact of the entire system. Ideational flexibility increases and is increased by a self-directed orientation; a self-directed orientation decreases and is decreased by distress. Self-directedness has particularly strong effects on the other two dimensions of personality.

However complex the system and however diverse the effects, the findings highlight the centrality for job and personality of a mutually reinforcing triumvirate—ideational flexibility, a self-directed orientation to self and society, and occupational self-direction. Ideational flexibility is both responsive to and productive of occupational self-direction. A self-directed orientation increases ideational flexibility and decreases a sense of distress. Occupational self-direction—especially substantive complexity, the keystone of the job structure—decidedly affects both ideational flexibility and a self-directed orientation.

The interrelationship of ideational flexibility, a self-directed orientation, and occupational self-direction is integral to the stratification system of

the society.¹⁵ Occupational self-direction is substantially determined by such class-linked aspects of organizational position as ownership and hierarchical level; ideational flexibility and a self-directed orientation, in turn, affect the likelihood of an individual's achieving a highly placed organizational and social position. In short, occupational self-direction, ideational flexibility, and a self-directed orientation are intertwined in a dynamic process through which the individual's place in the stratification system both affects and is affected by his personality.

¹⁵ All three are highly correlated with social stratification position. Using a confirmatory factor-analytic model similar to those employed in this paper (see Kohn and Schoenbach 1980), we find social stratification position to be correlated .85 with ideational flexibility, .70 with self-directedness/conformity, and .90 with occupational self-direction.

APPENDIX

MEASUREMENT MODELS OF SELF-CONCEPTION AND SOCIAL ORIENTATION

CONCEPT/INDICATORS	STANDARDIZED PATH FROM CONCEPT TO INDICATOR	
	1964	1974
Authoritarian conservatism ($\chi^2=120.98$, $df=111$, ratio=1.09):		
The most important thing to teach children is absolute obedience to their parents . . . . .	.61	.68
Young people should not be allowed to read books that are likely to confuse them . . . . .	.50	.46
There are two kinds of people in the world: the weak and the strong . . . . .	.57	.62
People who question the old and accepted ways of doing things usually just end up causing trouble . . . . .	.51	.47
In this complicated world, the only way to know what to do is to rely on leaders and experts . . . . .	.58	.54
No decent man can respect a woman who has had sex relations before marriage . . . . .	.43	.51
Prison is too good for sex criminals; they should be publicly whipped or worse . . . . .	.46	.50
Any good leader should be strict with people under him in order to gain their respect . . . . .	.41	.54
It's wrong to do things differently from the way our forefathers did . . . . .	.45	.52
Personally responsible criteria of morality ($\chi^2=12.92$, $df=15$, ratio=.86):		
It's all right to do anything you want as long as you stay out of trouble	-.59	-.64
If something works, it doesn't matter whether it's right or wrong	-.44	-.30
It's all right to get around the law as long as you don't actually break it	-.58	-.61
Do you believe that it's all right to do whatever the law allows, or are there some things that are wrong even if they are legal?	-.33	-.26
Trustfulness ($\chi^2=5.29$, $df=5$, ratio=1.06):		
Do you think that most people can be trusted? . . . . .	.51	.53
If you don't watch out, people will take advantage of you	-.52	-.61
Human nature is really cooperative . . . . .	.20	.11
Self-esteem two-factor model ($\chi^2=166.77$, $df=112$, ratio=1.49):		
Self-confidence:		
I take a positive attitude toward myself . . . . .	.60	.71
I feel that I'm a person of worth, at least on an equal plane with others . . . . .	.47	.45
I am able to do most things as well as other people can . . . . .	.43	.34
I generally have confidence that when I make plans I will be able to carry them out . . . . .	.54	.45
Self-deprecation:		
I wish I could have more respect for myself . . . . .	.76	.71
At times I think I am no good at all . . . . .	.49	.51
I feel useless at times . . . . .	.43	.40
I wish I could be as happy as others seem to be . . . . .	.58	.59
There are very few things about which I'm absolutely certain . . . . .	.29	.43
(Correlation: self-confidence/self-deprecation)	(-.29)	(-.28)
Fatalism ($\chi^2=2.15$, $df=5$, ratio=.43):		
When things go wrong for you, how often would you say it is your own fault?	-.65	-.57
To what extent would you say you are to blame for the problems you have—would you say that you are mostly to blame, partly to blame, or hardly at all to blame?	-.59	-.70
Do you feel that most of the things that happen to you are the result of your own decisions or of things over which you have no control?	-.37	-.38

APPENDIX (Continued)

CONCEPT/INDICATORS	STANDARDIZED PATH FROM CONCEPT TO INDICATOR	
	1964	1974
Anxiety ($\chi^2=213.94$, $df=159$, $ratio=1.35$):		
How often do you feel that you are about to go to pieces?...	.55	.58
How often do you feel downcast and dejected?.....	.68	.68
How frequently do you find yourself anxious and worrying about something?.....	.49	.47
How often do you feel uneasy about something without know- ing why?.....	.45	.50
How often do you feel so restless that you cannot sit still?...	.47	.39
How often do you find that you can't get rid of some thought or idea that keeps running through your mind?.....	.41	.44
How often do you feel bored with everything?.....	.58	.57
How often do you feel powerless to get what you want out of life?.....	.54	.52
How often do you feel guilty for having done something wrong?	.36	.36
How often do you feel that the world just isn't very under- standable?.....	.48	.44
How often do you feel that there isn't much purpose to being alive?.....	.45	.37
Idea conformity ($\chi^2=15.43$, $df=13$, $ratio=1.19$):		
According to your general impression, how often do your ideas and opinions about important matters differ from those of your relatives?.....	-.69	-.64
How often do your ideas and opinions differ from those of your friends?.....	-.63	-.51
How about from those of other people with your religious background?.....	-.50	-.44
Those of most people in the country?.....	-.68	-.35

NOTE.—(1) A high score on the indicator generally implies agreement or frequent occurrence; where alternatives are posed, the first alternative is scored high. (2) In all models, the error (or residual) of each 1964 indicator is allowed to correlate with the error of the same indicator in 1974. In several models, some intra-time error correlations are also allowed. (Error correlations are not shown in the table.) (3) The correlations of the concepts over time (1964-74) are: authoritarian conservatism, .78; criteria of morality, .65; trustfulness, .81; self-confidence, .52; self-deprecation, .55; fatalism, .61; anxiety, .53; and idea conformity, .39.

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