Einar Hardin, Michigan State University

Many psychological characteristics of employees may have an impact on job performance: openmindedness, adaptability to new conditions, interpersonal competence, achievement motivation, trustworthiness, intelligence, knowledge, and so forth. Because the mix of psychological characteristics is likely to differ between the demand and supply sides of the labor market, pay differentials associated with these characteristics will tend to arise. Persons having bundles of characteristics generally desired by employers will tend to be paid more, given their other pay-determining attributes.

The voluminous research of the last decade on interpersonal differences in pay^{l} gives little attention to psychological variables, and empirical analyses have made virtually no use of such variables other than intelligence. The present study is an attempt to reduce the gap. The roles of two psychological variables, dogmatism and readiness for change, are explored as additions to a human capital model - and alternately a demographic model - of pay, and the potential social economic benefits from alterations in dogmatism and readiness for change are calculated.

Psychological Variables

Dogmatism was defined by Rokeach in 1954 as "(a) a relatively closed cognitive organization of beliefs and disbeliefs about reality, (b) organized around a central set of beliefs about absolute authority which, in turn, (c) provide a framework of patterns of intolerance and qualified tolerance toward others." This concept was originally offered as a generalization of authoritarianism, because Rokeach believed the latter, especially when operationalized in test form, referred to fascist or right wing authoritarianism, although there was nothing to preclude the existence of an authoritarianism of the political left. A large pool of statements sampling the three basic aspects of dogmatism and useful in measurement was also presented.²

The subsequent twenty years have seen much analysis and use of the Rokeach concept and scale. Reliability appears to be reasonably high, as illustrated by r=.55 between test results separated by a five-year period, and seems fairly insensitive to the number of items. Dogmatism seems to have only a slight negative relationship to various intelligence test scores, including ACT, SAT, and CQT scores.³ Persons differing in dogmatism have been compared on other characteristics, such as scores on standardized personality tests, interpersonal and group behavior, psychological disorders, perceptual functioning, time perspective, and problem solving. The emerging general picture of a dogmatic person is one who is not receptive to new ideas and beliefs, is intolerant, inflexible, and insecure, and does not function easily in unstructured settings, and whose parents had closed minds.⁴

It is evident that persons differing in dogmatism may differ in productivity and worth to an employer. Highly dogmatic employees can be expected to be less quick than others to offer or even accept proposals for problem solution and organizational change adequate to the needs of the firm, and they may be substantially less able to cooperate with other employees. Very high levels of dogmatism are likely to be strongly disabling. Being less valuable than otherwise similar persons, more dogmatic employees would be paid less.

The productivity effects of dogmatism may vary with the knowledge and skills of the employee. When the job is routine and predetermined and when careful and close compliance with rules and instructions is important, moderate dogmatism is perhaps of little consequence. In complex and relatively unstructured jobs which require personal initiative and a sensitive response to actions of others, dogmatism may impair productivity greatly and cause a severe economic penalty. Since those who hold complex jobs are likely to be the better educated, longer-service, male employees, any decline in pay which accompanies growing dogmatism may vary with education, length of service, and sex.

Whether an individual willingly accepts - or positively seeks - a change from one to another state of affairs depends in part on how the characteristics of the two states meet the needs of the individual, in part on the economic cost the individual incurs in going from one to the other. As economists have long argued in analysis of educational, occupational, and geographic mobility, the individual may be viewed as responding to change by weighing the difference in flows of benefits from the two states of affairs against the economic cost of the change. Readiness for change, the second psychological variable covered by the study, is not involved in this economic concept of response to change.

However, the change from one state of affairs to another may also entail a requirement to adjust to new circumstances, and the individual may not know with certainty that he will be able to make the required adjustment. As recognized in the concept of resistance to change, many persons may view the adjustment requirement and the self-doubts with distaste. Economists might say that the individual has a psychological cost of transition which must be outweighed by the difference between the net flow of benefits and the economic cost of transition, before a positive response occurs. Such a psychological cost represents low readiness for change.⁵

It is important to recognize, furthermore, that some persons may not view the change process with distaste or indifference but may welcome it. First, the change process may temporarily break up the monotony associated with any state of affairs. Second, it affords some persons a welcome opportunity to test their ability to overcome hazards and ambiguities and generally cope with change. For such persons, the process of change may have a positive value which in part or in whole offsets the economic cost, if any, of the transition. This positive psychological value represents high readiness for change.

The concept of readiness for change may be used in extending the economic analysis of change. In brief, given the usefulness of the potential as compared with the actual states of affairs and the economic cost of the transition, increased readiness means increased probability of a favorable response to a particular change.

Unfortunately, there is very much less empirical research on readiness for change than on dogmatism. Almost all is based on questionnaire data covering two insurance companies, one of which furnished the material for the present study. Trumbo reported a corrected odd-even reliability coefficient of .79 for the original nine-item scale of readiness for change and a .28 correlation with scores on the Wonderlich Personnel Test used in estimating the mental ability of job applicants; showed that high readiness for change was associated with positive attitudes toward past and prospective changes in technology and work environment but was virtually independent of job satisfaction; and demonstrated that high readiness for change among supervisors was associated with high readiness and low group cohesiveness among their direct subordinates. Using nine-item data from the second company, Nangle verified Trumbo's finding of a positive relationship with favorability toward changes in technology and work environment, and Faunce found higher readiness for change among employees who identified with high social class and had fathers with high occupation or income. After eliminating three items on the basis of logical heterogeneity and low item intercorrelations, Hardin showed that desire for changes in specific job aspects was associated not only with low satisfaction as to these job aspects but also with high readiness for change.⁶ These findings suggest that the readiness for change scale does measure with some reliability an attitude which is reflected in observable behavior, is different from job dissatisfaction, has a bearing on response to particular technological and work changes, and does not merely summarize the comparative attractiveness of two states of affairs.

Readiness for change, as defined here, derives its economic importance from incessant changes in product and resource markets and in company technology, all of which call for continual and swift adaptation of the firm and its internal activities. Adaptation is swifter and more effortless, when the work force favors the very process of change, apart from the characteristics of the initial and terminal states of affairs, than when it takes a negative or hostile view of the change process. Other things being equal, high readiness for change among employees has a positive economic value for the employer, and he will pay a premium to secure and retain the services of highly ready employees.

The productivity effects and, hence, the pay premium of high readiness for change may vary with circumstances. Where much adjustment to change is needed, the pay premium is likely to be especially large. One may plausibly think that persons with much seniority and formal education are especially likely to hold complex jobs where opportunities for cooperation or obstruction are great; accordingly, the readiness for change premium would be higher among employees with much seniority and education. However, an interaction with education and seniority may be negative instead of positive, since adjustment to change originated by other persons, which is what the scale seems to measure, may be more needed in routine than complex jobs. This would make the pay premium for readiness for change larger among women, who tend to hold the routine and simple jobs, than among men.

Economic-Demographic Variables and Models

Many other variables are commonly thought to influence the rate of pay. According to human capital theory the pay of an individual depends not only on his basic ability and industry but also on the amount of human capital he has acquired through investment in formal schooling, in vocational training, in on-the-job training, and in learning by doing. When specific information is lacking concerning on-the-job training and learning by doing, research workers often substitute length of service with present and past employers. Following the general approach of Malkiel and Malkiel we use this basic model:

(1)
$$\log_{e} PAY_{i} = \alpha_{o} + \alpha_{1}ED_{i} + \alpha_{2}SEN_{i} + \alpha_{3}SEN_{i}^{2} + \alpha_{1}WORK_{i} + \alpha_{5}WORK_{i}^{2} + \varepsilon_{i}$$

where ED = years of formal schooling completed, SEN = years of service with present employer, WORK = years of service with prior employers, and α_0 expresses the combined effect of all unspecified variables.

According to a demographic and theoretically less rigorous interpretation, pay depends on formal schooling, length of service with present employer, and chronological age. A distinct ageearnings profile having a maximum at some intermediate age is explained eclectically by reference to work experience with other employers, special training, obsolescence, degenerative phenomena, etc.⁷

From this interpretation we distill the following demographic alternate model of pay:

(2)
$$PAY_{i} = \alpha_{0} + \alpha_{1}ED_{i} + \alpha_{2}ED_{i}AGE_{i} + \alpha_{3}ED_{i}AGE_{i}^{2} + \alpha_{4}\log_{e}SEN_{i} + \alpha_{5}ED_{i}\log_{e}SEN_{i} + \varepsilon_{i}$$

in which AGE = years of age at pay date. Years of work experience with other employers, WORK, is excluded because, among men more than women, it is highly correlated with AGE, once ED and SEN are held constant. If $\alpha_2>0$ and $\alpha_3 < 0$, as expected, the age-earnings profile reaches a maximum at AGE = $-\alpha_2/2\alpha_3$, regardless of the years of formal schooling, but the profile is at a higher level, especially in years close to those of maximum earnings, the higher is the level of formal schooling. Finally, the model concedes that education and seniority may have an interaction effect upon pay in addition to their main effects.

Two variables normally associated with pronounced pay differences are absent from both models: sex and occupation. The sex differential in pay may not be merely a level or scale factor but may vary with personal characteristics, and even the disturbance term may have different variance. Therefore, it seemed preferable to analyze the data for men and women separately instead of building interaction terms for sex into a single model.

The exclusion of the occupation variable is based on different reasons. According to economic theory for a nonunion market, such as the one

in which the present study was conducted, occupational pay differences reflect (a) the nonwage disadvantages (noise, dirt, hazard, work load, etc.) inherent in each of the occupations and (b) the prices payable for the grades of labor optimally suited to each occupation. When pay differences arise exclusively from nonwage disadvantages (so-called equalizing differentials), the model of pay should include variables explicitly representing these disadvantages. In the present study no reliable information was available about the presumably limited differences in nonwage disadvantages among occupations.

On the other hand, when pay differences reflect only differences in quality of labor, the model of pay used in estimating the prices paid for labor quality should give no recognition at all to occupation. This can be seen clearly when there is no variation in tasks and remuneration within occupations but when employee characteristics determine fully who gets access to the various occupations. A regression equation that contains the occupation variable along with the personal characteristics variables is likely to assign all influence upon pay to the occupation variable, the coefficient of which will represent a hopelessly confounded effect of all the personal characteristics.

Models Augmented with the Psychological Variables

The human capital model and the alternative demographic model formed the core of the models incorporating the two psychological variables: dogmatism (DOGM) and readiness for change (RFC). In the main analysis these additional variables were included only in their main-effects form, giving the equations:

(3)
$$\log_{e} PAY_{i} = Z_{i}^{i} + \alpha_{6} DOGM_{i} + \alpha_{7} RFC_{i}$$

(4) PAY =
$$Z_{i}^{"} + \alpha_{\zeta} DOGM_{i} + \alpha_{T} RFC_{i}$$

(4) $\operatorname{rat}_{i} - 2_{i} + \alpha_{0}^{\text{LOUT}_{i}} + \alpha_{7}^{\text{LC}_{i}}$ where Z_{i}^{\prime} and Z_{i}^{\prime} represent the sums of all terms in equations (1) and (2). However, interactions of DOGM and RFC separately with ED and SEN in the human capital model and with ED and log_SEN in the alternative demographic model were also explored by inclusion of the corresponding terms in expanded versions of (3) and (4). Thus, the analysis was designed to show what effects, if any dogmatism and readiness for change exerted upon pay when several generally recognized pay determinants were held constant.

Procedure

While economic and demographic data sufficient for estimating the coefficients of models (1) and (2) can often be obtained from the files of employers, appropriate psychological data are seldom available. First, many organizations neither collect nor use psychological data on their employees, or they collect data on dimensions having little relevance for pay. Second, when such data have been collected and used and if they are found to have the expected statistical relationship to pay, they may be suspect in the eyes of some research workers on the premise that the relationship arose because the organization falsely thought the data had a bearing on the individual's worth as an employee and

because it placed and rewarded the person accordingly.9

Collection of primary data for studies of psychological influences upon pay may involve bringing all employees together in a company cafeteria or auditorium to fill out psychological questionnaires and to take tests, with substantial cost in money and interruption for the employing organization. Alternatively, it may require an interview project or a mail questionnaire survey, in which strict control against interference is difficult to attain and the nonresponse rate may become uncomfortably high. At an exploratory stage, there is much to be said, then, for secondary use of research files even if these were created for other purposes and perhaps in other times.

This study made use of data from an earlier research project.¹⁰ The files contained complete and usable information on sex, age, education, seniority, readiness for change, and dogmatism for 159 women and 49 men, who jointly represented about two-thirds of all office employment in a casualty insurance company and who included supervisory and nonsupervisory employees engaged in the various departments commonly found in such companies. Seniority (SEN) was calculated as years of employment with the company. Education (ED) represented years of formal schooling completed; "some college" and "college" were coded as 14 and 16 years of schooling. No usable direct information being available, years of work experience with previous employers was calculated as WORK = AGE - (ED + SEN + 6), in accordance with common usage among human capital researchers. This formula implies an assumption, more warranted for men than women, that each person is working from the end of formal schooling to the start of employment with the current employer.

Employee dogmatism was measured by a Likert score based on agreement-disagreement responses to these eleven statements: Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary to restrict the freedom of certain political groups; The worst crime a person could commit is to attack publicly the people who believe in the same thing he does; It is only natural that a person would have a much better acquaintance with ideas he believes in than with ideas he opposes; In this complicated world of ours the only way we can know what is going on is to rely on leaders or experts who can be trusted; The present is all too often full of unhappiness; it is only the future that counts; It is only when a person devotes himself to an ideal or cause that life becomes meaningful; There are two kinds of people in this world: those who are for the truth and those who are against the truth; Man on his own is a helpless and miserable creature; It is only natural for a person to be rather fearful of the future; It is better to be a dead hero than a live coward; and The main thing in life is for a person to want to do something important. Each statement had six responses with associated weights: 6 = I agree very much; 5 = I agree on the whole; 4 = I agree a little; 3 = I disagree a little; 2 = I disagree on the whole; and 1 = I disagree very much. A score with a possible range from 11 to 66 was computed as the sum of weights of the selected

responses; persons failing to respond to one or more items were removed from the study. The statements were chosen by Kamenske from the Rokeach pool. The criteria of selection were that all three basic aspects of dogmatism must be reflected among the items, that there should be a high item reliability and discrimination, and that the items should be plausible as part of a questionnaire on job attitudes of clerical employees. In data from another company Trumbo found strong positive association between responses to individual statements and the elevenitem total score.¹¹

Readiness for change was measured by a Likert score largely based on agreement-disagreement responses to six statements. Five of these were: One can never feel at ease on a job where the ways of doing things are always being changed; The trouble with most jobs is that you just get used to doing things in one way and then they want you to do them differently; I would prefer to stay with a job I know I can handle than to change to one where most things would be new to me; I like a job where I know that I will be doing my work about the same way from one week to the next; When I get used to doing things in one way, it is disturbing to have to change to a new method. Each of these statements had five response categories with associated weights: 1 = I strongly agree; 2 = I agree a little; 3 = I neither agree nor disagree; 4 = I disagree a little; and 5 = I strongly disagree. The sixth item was: The job that you would consider ideal for you would be one where the way you do your work: 1. is always the same; 2. changes very little; 3. changes somewhat; 4. changes quite a bit; and 5. changes a great deal. After persons not responding to all six items were dropped, a readiness-for-change score with a possible range from 6 to 30 was computed by summing the weights of the six selected responses. The items were selected from the nine-item scale on the basis of logical similarity and satisfactory item intercorrelations.12

The pay rates were fixed before the questionnaire survey was undertaken. Hence, any observed relationship of pay to dogmatism or readiness for change cannot be interpreted as a selfvalidation or artificial certification effect.

Data on weekly pay at survey time had been obtained from company records. A rate range existed for each job but permitted wide variation according to management judgment. No overtime or other premiums were paid. There existed no collective bargaining agreement and no union holding or seeking recognition as a bargaining agent.

Preliminary analysis showed that pay had different means and standard deviations for the two sexes. The two psychological variables, DOGM and RFC, were not strongly interrelated (r = -.38)among men and -.20 among women), and they were also rather weakly related to the constituent variables in the economic models (1) and (2), as shown by correlations up to .20 among women and .31 among men. However, interaction variables involving DOGM and RFC often were strongly correlated with some component variables. In particular, correlations between ED·PSY and PSY and between SEN·PSY and SEN (where PSY represents either DOGM or RFC) ranged from .76 to .93 among women and from .93 to .98 among men. Because the latter pattern made it difficult to distinguish between main-effects and interaction-effects models in sample data, the estimated coefficients are presented for main-effects models only.

The coefficients of models (3) and (4) as well as models expanded by interaction terms involving DOGM and RFC were estimated by the method of ordinary least squares. Errors in variables are likely to be fairly large in the case of psychological variables, such as Likert scores. The conservative nature of the estimates should be kept in mind when the results are interpreted.

Results

The regression equations corresponding to the human capital models (1) and (3) are shown in Table 1. In model (1), that is excluding the psychological variables, the coefficients had sensible signs and values, and they were statistically significant, except for SEN and SEN^2 among men, where P = .07 and .31, respectively. In all, the standard human-capital model covering ordinary economic variables appeared to be relevant to pay in this organization.

When DOGM and RFC were added as main effects and model (3) was estimated, the adjusted \mathbb{R}^2 rose; the increase was statistically significant in the women's sample (F = 5.04) and was near significance in the men's sample (F = 3.02). The coefficient of DOGM was clearly significant for both sexes, and that of RFC was of borderline significance (P = .06) for women. Inclusion of DOGM and RFC left most of the other coefficients unchanged, but it made the coefficient of ED nonsignificant (P = .10) among women and reduced and rendered clearly nonsignificant (P = .41) that of SEN among men.

According to the estimates of model (3) an increase in DOGM by one score point reduced the pay of women by about .3 per cent and that of men by about .9 per cent. Furthermore, an increase in RFC by one score point raised the pay of women by .3 per cent but left the pay of men unchanged.

In the terminal equations obtained when a stepwise deletion and addition procedure with a P = .05 stopping rule was applied, the estimated impacts of DOGM and RFC retained their signs and had almost the same values as in the preceding equation. Thus, the results were not unduly sensitive to the specification of the model.

Several analyses were conducted in a search for those interactions of DOGM and RFC with ED or SEN which seemed plausible in advance. Here, model (3) was augmented with terms representing either ED.DOGM and ED.RFC or SEN.DOGM and SEN.RFC. When added pairwise to the equation, the coefficients of these additional variables were found non-significant singly as well as jointly. However, because of the high correlations with certain interaction terms, the stepwise procedure as applied to the expanded equations frequently retained the interaction term while rejecting the corresponding main psychological variable. Nevertheless, the revised equations fit the data, in terms of \mathbb{R}^2 , only about as well as did the equations derived from model (3).

The coefficients of the alternative demographic model (4) were also estimated. When all the variables were included, the coefficient of

Table	1.	Estimates	for	the	Human	Capital	Model	of	loge	Weekly	Salary
-------	----	-----------	-----	-----	-------	---------	-------	----	------	--------	--------

Verieble	W	omen (n = 159)			Men (n = 49)				
Val labie	Model (1)	Model (3)	Terminal	Model (1)	Model (3)	Terminal			
Intercept	3.53 (.143)	3.67 (.157)	3.92 (.0706)	3.56 (.195)	4.07 (.284)	4.06 (.249)			
ED	.0262 (.0116)	.0191 ^ª (.0116)	N.S.	.0467 (.01 41)	.0411 (.0138)	.0410 (.0131)			
SEN	.0718 (.0119)	.0726 (.0116)	.0733 (.0111)	.0640 [°] (.0346)	.0297 ^e (.0359)	.0256 (.00789)			
sen ²	00318 (.00127)	00316 (.00124)	00323 (.00121)	 00346 ^d (.00334)	000400 ^f (.00344)	N.S. -			
WORK	.00770 (.00304)	.00610 (.00300)	N.S.	.0321 (.0112)	.0302 (.0108)	.0298 (.0103)			
work ²	000288 (.000108)	000217 (.000107)	N.S.	000978 (.000428)	000861 (.000415)	000842 (.000393)			
DOGM	-	00294 (.00133)	00339 (.00132)	-	00919 (.00362)	00912 (.00318)			
RFC	-	.00348 ^b (.00185)	.00435 (.00183)	-	000897 ^g (.00488)	N.S. -			
₹ ²	.4725	.5022	.4914	.4553	.5089	.5313			

 ${}^{a}P = .10, {}^{b}P = .06, {}^{c}P = .07, {}^{d}P = .31, {}^{e}P = .41, {}^{f}P = .91, {}^{g}P = .86$

N.S. indicates the variable did not survive in the stepwise regression procedure, P = .05.

DOGM was negative and significant for both women $(a_6 = -.161, s(a) = .0783, P = .042)$ and men $(a_6 = -.897, s(a) = .347, P = .013)$. The coefficient of RFC was positive for both sexes and significant for women $(a_7 = .237, s(a) = .110, P =$.033) but not for men (P = .466). Thus, the pay penalty for an additional score point of dogmatism was about 16¢ per week among women and about 90¢ per week among men, while a pay premium amounting to about 24¢ per week per score point of readiness for change was paid only to women. Very similar results were obtained, when the stepwise procedure was applied to model (4). Again, there was a substantial amount of exploration for interaction effects involving DOGM and RFC, and the results closely resembled those of the human capital model.

While no formal significance test was made, it seems obvious that the impact did differ between women and men. The evidence for the existence of interaction effects involving the two psychological variables with other variables was at best erratic and weak. It may be wise, at the current time, to regard dogmatism and readiness for change as having main effects impact upon pay and interaction effects with sex alone.

Social Economic Benefits from Psychological Change

The finding that dogmatism and readiness for change had an impact on the salaries of employees implies that these two psychological variables also affected the output of the nation. Indeed, one may estimate the output gains, often called social economic benefits, from decreased dogmatism and increased readiness for change on the basis of the results in Table 1. Three main assumptions are needed for such estimates. First, according to a premise commonly used by economists, the contribution of an employee to national output is assumed to be roughly equal to the employee's compensation, composed of direct salaries and the value of fringe benefits. Second, the value of fringe benefits is assumed to be unaffected by both dogmatism and readiness for change, because data were not collected. Third, although lowered dogmatism and increased readiness for change may alter the employee's behavior as a citizen, with attendant changes in government policy and actions, economic effects through other links than the person's employment are assumed to be absent.

Among women as well as men, the standard deviation of individual scores was about seven points of dogmatism and about five points of readiness for change. According to regression results, a decrease in dogmatism of both sexes by seven points and an increase in readiness for change of women by five points would raise the weekly pay, at 1957 levels, by \$2.16 for women and by \$6.31 for men. Expressed in annual rates at 1973 levels¹³ the social economic benefits would amount to about \$216 per woman and \$631 per man.

It is not known whether educational and training programs can be redesigned or the environment of children in their formative years can be modified to bring about such a change in the two psychological variables, nor are the costs and side effects known. However, if upheld by replication work in progress, the estimated annual social economic benefits are large enough to warrant serious analysis of the factors determining dogmatism and readiness for change, with special attention to the potentials of programs for deliberate psychological change.

Concluding Remarks

The influences of dogmatism and readiness for change upon white collar pay were estimated by including these two variables in widely accepted models of pay determination where sex, education, seniority, and prior work experience were held constant in one and sex, education, seniority, and age were held constant in the other model. Clearly, both dogmatism and readiness for change deserve recognition in their own right.

The findings support the general thesis that a number of psychological variables should be included in the economists' models of pay determination. In expanding the models, it is important to avoid those psychological variables, such as job satisfaction and many work attitudes, which cannot be regarded as causes of pay. Advice from psychologists is needed in the choice of promising variables and of measurement methods.

Footnotes

¹See Mincer, Jacob. "The Distribution of Labor Incomes: A Survey with Special Reference to the Human Capital Approach." <u>Journal of</u> <u>Economic Literature</u>, Vol. 8, No. 1 (March 1970), pp. 1-26.

²See Rokeach, Milton. "The Nature and Meaning of Dogmatism." <u>Psychological Review</u>, Vol. 63, No. 3 (May 1954), pp. 194-209, for concepts and his "Political and Religious Dogmatism: An Alternative to the Authoritarian Personality." <u>Psychological Monographs</u>, Vol. 70, No. 425 (1956) for item pool.

³See Rokeach, Milton. <u>The Open and Closed</u> <u>Mind</u> (New York: Basic Books, 1960), p. 190; Zagona, Salvatore V. and Zurcher, Louis A., Jr. "Notes on the Reliability and Validity of the Dogmatism Scale." <u>Psychological Reports</u>, Vol. 16, No. 3, Part 2, (June 1965), p. 1236; and Thompson, Robert C. and Michel, Jerry B. "Measuring Authoritarianism: A Comparison of the F and D Scales." <u>Journal of Personality</u>, Vol. 40, No. 2 (June 1972), p. 185.

⁴This account relies heavily on Vacchiano, Ralph B., Strauss, Paul S., and Hochman, Leonard. "The Open and Closed Mind: A Review of Dogmatism." <u>Psychological Bulletin</u>, Vol. 71, No. 4 (April 1968), pp. 261-273.

[>]Thus, resistance to change may be interpreted as low readiness for change, but in much of the literature there is a failure to distinguish between low readiness and either the basic unattractiveness of the potential as compared with the actual state of affairs or the individual's economic cost of going to a new state of affairs.

^bTrumbo, Don A. "Individual and Group Correlates of Attitude toward Work-Related Change." <u>Journal of Applied Psychology</u>, Vol. 45, No. 5 (October 1961), pp. 338-344; Nangle, John E. A Study of Certain Aspects of Organizational Communications within a Medium-Sized Insurance Company Undergoing Technological Change (unpublished doctoral dissertation, Department of Psychology, Michigan State University, 1961); Faunce, William A. "Social Stratification and Attitude toward Change in Job Content." <u>Social Forces</u>, Vol. 39, No. 2 (December 1960), pp. 140-148; and Hardin, Einar. "Job Satisfaction and the Desire for Change." <u>Journal of Applied Psychology</u>, Vol. 51, No. 1 (February 1967), pp. 20-27.

⁷Malkiel, Burton G. and Malkiel, Judith A. "Male-Female Pay Differentials in Professional Employment." <u>American Economic Review</u>, Vol. 63, No. 4 (September 1973), pp. 693-705. For illustrations of the demographic approach see Rees, Albert and Shultz, George P. <u>Workers and Wages</u> in an Urban Labor Market (Chicago: University of Chicago Press, 1970); and Johnson, George E. and Youmans, Kenwood C. "Union Relative Wage Effects by Age and Education." <u>Industrial and Labor Relations Review</u>, Vol. 24, No. 2 (January 1971), pp. 171-179.

⁸When translating cross-sectional ageearnings relationships into patterns of longitudinal behavior one must allow for general price change, technological change, and accumulation of tangible capital. A cross-sectional downturn may represent an increasingly severe retardation in growth of money or real pay, rather than an actual decline over the course of time.

⁹Such a cloud of suspicion also hovers over generally accepted variables, such as age, sex, education, and race. For one view in this regard, see Berg, Ivar. <u>Education and Jobs: The</u> <u>Great Training Robbery</u> (Boston: Beacon Press, 1971).

¹⁰For additional background information and some substantive findings see Hardin, Einar. "The Reactions of Employees to Office Automation." <u>Monthly Labor Review</u>, Vol. 83, No. 9 (September 1960), pp. 925-932.

¹¹See Kamenske, Gloria Cheek. Some Personality Factors in Attitude toward Technological Change in a Medium Sized Insurance Company (unpublished doctoral dissertation, Department of Psychology, Michigan State University, 1965); and Trumbo, "Individual and Group Correlates," <u>op. cit.</u>

¹²See Hardin, "Job Satisfaction," <u>op. cit.</u>, for a further discussion and for a distribution of item intercorrelations.

¹³By assuming 50 paid weeks per year and adjusting the 1957 salary level for a doubling of average weekly earnings (up 98.3%) and average hourly earnings (up 96.2%) of nonsupervisory workers in finance, insurance, and real estate from 1957 to 1973; see the <u>Manpower Report of the</u> <u>President</u>, April 1974 (Washington: U.S. Government Printing Office, 1974), p. 315.