WORKER DISCONTENT: WHERE IS THE PROBLEM?

by

Lloyd Ulman, Robert J. Flanagan, and George Strauss

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A Report to The Ford Foundation

Submitted by:

Lloyd Ulman
Professor of Economics
University of California, Berkeley

Robert J. Flanagan
Assistant Professor of Labor Economics
Graduate School of Business
University of Chicago

George Strauss
Professor of Business Administration
University of California, Berkeley

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SUMMARY

Worker Discontent: Where is the Problem?

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This paper deals with the general question of employee dissatisfaction, largely from the economist's point of view.

Chapter 1 is purely theoretical. It explains in economist's terms how rising real pecuniary incomes may lead workers to seek increases in non-pecuniary rewards as well -- nonpecuniary rewards including such items as job challenge, autonomy, and the like. It suggests that if employers fail to meet these demands a form of disequilibrium may be created. To some extent workers may be "bribed" to forego more meaningful work by means of paying them substantially higher wages; however, such bribes may become decreasingly effective and increasingly costly over time. In any case, disequilibrium may lead to expressions of discontent as well as employee efforts to improve their conditions through working less hard, being absent or going on strike, etc.

Chapter 2 seeks to determine whether employee behavior has changed in a way which suggests increasing job dissatisfaction. It looks at five behavioral measures -- indices of productivity, quit rates, absenteeism, accidents, and strikes -- and seeks to determine whether changes in such indices over time can be adequately explained by conventional economic determinants, such as unemployment and average hours of work, or whether there is some trend

left over which can reasonably be ascribed to worker attitudes and motivation. In other words, it asks whether we can find any changes in worker behavior which may have been caused by changes in worker attitudes (and concludes that by and large we can't).

There was some slowdown of productivity in the mid-sixties, but most of this can be explained by two factors: (a) the increasing proportion of women and young people in the labor force, and (2) the increasing proportion of gross national product which is represented by services and governmental expenditures. Women and younger people are less productive than older males, at least during their first years in the labor force, and productivity in the service and government sector has been growing less rapidly (if at all) than productivity in the manufacturing sector. These two factors explain much of the drop in productivity (though there was a sharp decline in 1969-70 which we cannot explain in this manner).

Quit rates have been increasing. Here too the changes are largely explained by variables such as unemployment, relative wages and hours, and the demographic composition of the labor force. After these factors are taken into account the time trend disappears or even becomes negative.

There have been some modest increases in absentee rates. Absenteeism seems to increase when hours of work grow longer. In any case, various indicators of absenteeism behave differently and no consistent trend is apparent.

Strike activity has also increased somewhat, but much of this can be explained by changes in prices and unemployment. Increases in

strike activity not explained by such factors occurred more noticeably outside large-scale manufacturing (yet it is in large-scale manufacturing that the greatest alienation is alleged to have occurred).

Accident frequency has also gone up but not accident severity (and severity, which measures lost time, not just the sheer number of accidents, seems to be the most important indicator). Furthermore, after suitable corrections are introduced for factors such as average hours of work, neither accident measure indicates any upward trend which may be ascribed to increased worker dissatisfaction.

Chapter 3 seeks to marshall the attitudinal evidence which corresponds to the behavioral evidence presented in Chapter 2. In addition, it attempts to product satisfaction trends into the future. Its findings (sometimes highly tentative) can be summarized as follows:

1. According to Michigan Survey Research Center data, there were no major trends in overall job satisfaction for the labor force as a whole or for any major demographic subcategories between 1969 and 1973 -- and less complete survey data indicate no significant change since 1964. The Gallup Poll presents a different picture, but these data are subject to some question.

2. The demographic variables discussed here -- age, education, sex, race, and occupation -- are statistically correlated with each other in a variety of ways, making analysis difficult. The very limited evidence suggests that age and occupation are prime determinants of satisfaction, with occupation possibly acting as a proxy for income. There is some relatively convincing evidence which suggests that when age and occupation are held constant race, sex, and education make very little difference (except perhaps for the troublesome group which has had "some college," for which dissatisfaction appears relatively high).

3. A likely downward pressure on job satisfaction during the late 1960's was the rapid increase in the number of young workers. While the average age of the work force will continue to decline, the relative size of the under-26 group has reached its peak.

The latest studies project that jobs will get "better" over the next few decades, that is, employment in "good" jobs will increase faster than employment in "bad" jobs. By "good" jobs here is meant jobs whose incombents report relatively high satisfaction and which also are relatively higher paid and employ people with relatively high degrees of education. Employee expectations will, of course, also rise, particularly as the average level of education goes up. The authors' hunch (or perhaps hope) is that on balance the net effects of these two opposing trends will also be to increase satisfaction.

Thus Chapter 3 strengthens the conclusions of Chapter 2. There is little support for the view that work place dissatisfaction has increased substantially recently -- or that it will do so in the immediate future.

Chapter 4 summarizes the findings and suggests some policy implications.

WORKER DISCONTENT: WHERE IS THE PROBLEM?

Introduction

The current debate over worker dissatisfaction has been conducted by psychologists, sociologists, and journalists, for the most part, with relatively little input from economists. And the arguments have been derived mostly from "micro" studies of individual plants. Of course, allegations have been made that worker alienation has affected aggregative indices, such as productivity, turnover, strikes, absenteeism, and the like, but the analysis of such data at the "macro" (industry- or economy-wide) level has been far from systematic. Quit rates in manufacturing, for example, increased from 1.1 in the recession year of 1958 to 2.7 in 1969, but turnover normally increases in periods of full employment, and it is far from clear whether there is any residual which needs to be explained by worker dissatisfaction.

This paper approaches the dissatisfaction debate from the economists' point of view. Our concern is with the relationship between dissatisfaction and economics and especially with questions of causation: To what extent might attitudinal changes have caused important economic problems? And, to reverse the question -- to what extent might economic and demographic changes cause attitudinal problems? If we find that attitudinal shifts have a negligible impact on economic variables, then the worker alienation debate largely loses economic interest, at least for the present.

The discussion which follows consists of three related parts. Chapter 1 is primarily theoretical. It sketches a rudimentary framework of economic analysis within which some aspects of worker discontent may be examined. Chapter 2 is more empirical. It looks at five measures of worker behavior --

indices of productivity, quit rates, absenteeism, accidents, and strikes -- and seeks to determine whether changes in such indices over time can be adequately explained by conventional economic determinants, such as unemployment and average hours of work, or whether there is some trend left over which can be reasonably ascribed to worker attitudes and motivation. Chapter 3, in turn, examines whether increased worker dissatisfaction can be explained (or predicted) by changes in labor force composition (e.g., younger workers are generally less satisfied than older ones) and the nature of work. Presumably if changes in average levels of work satisfaction (as measured, for example, by the Gallup Poll) can be explained by such factors there is less need to postulate a fundamental shift in the national "work ethic."

Thus our first chapter will be largely theoretical and analytical while the second and third chapters will be concerned with macroeconomic data (from the industry or the economy as a whole rather than the firm or individual). In addition to generally available macro data, such as those relating to quit or accident rates, we shall also present several analyses based on a relatively new source of data, the National Longitudinal Surveys.[1] We note at the outset, however, that the scope of our questions is broader than the answers we can provide. Although our analysis may be more comprehensive than most attempted to date, there are large areas in which definitive answers are not yet possible, given the paucity of the data available.

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[1]The National Longitudinal Surveys interviewed four random samples of approximately four thousand individuals each once a year for five years, gathering extensive work history data. We restrict our analysis to two cohorts: (1) males, 14-25 years of age in 1966, and (2) males, 45-59 years of age in 1966. Our analyses are based on special runs of the survey tapes.

CHAPTER 1

An Economic Approach to Discontent

Many psychologists and sociologists have been claiming that the contemporary blue-collar worker, younger and better educated than his predecessor, has been finding his working life increasingly unsatisfactory; and they have been predicting that the dissatisfaction of such workers would be reflected in increasing industrial unrest and lower productivity. And indeed during the years of growing concern with worker discontent the economy was characterized by upturns in strike activity and in quit rates and by a decline in the rate of growth of productivity.[1]

In the light of the foregoing, it may appear odd that economists, on the whole, have paid little attention to the worker discontent hypothesis. A group of younger, "radical political economists" constitutes an exception. While awaiting the arrival of a new Marx (like an earlier generation of radicals who had been portrayed as waiting for Lefty), they rummage in the attic of the original in search of a usable heritage. The doctrine of immiseration of the proletariat through a predicted tendency of real wages to be progressively ground down under capitalism is not salvageable. However, immiseration could also be caused by an intensified feeling of alienation from work. This phenomenon can readily be reconciled (as we shall note below) with the perverse tendency of real wages to increase; it would cast

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[1] The extent to which this has occurred should not be exaggerated. For example, man days idle (as a per cent of working time) due to strikes rose from .11 in 1961 to .37 in 1970 but dropped to .14 in 1972 and were running at .09 in early 1973. Though quit rates in manufacturing went up from 1.1 in 1958 to 2.7 in 1969, they dropped to 1.8 in 1971 and went up again to 2.2 in 1972. And productivity rose quite sharply in 1972.

the worker in the image of the student radical; it would translate Marx into the existentialist language in which so much of the postwar generation of radical intellectuals have expressed their views; it offers the corrective vision of socialism through "participation" rather than nationalist bureaucracy. Thus it is not surprising that young radical economists should concern themselves with worker discontent and its alleged manifestations.

Though conventional economists have been concerned with less global matters, such as the slowdown in productivity growth, they have generally ignored the question of worker discontent, even though scholars in other branches of the social sciences have suggested that discontent may be one cause for such low productivity. And yet economic analysis of the most traditional sort, using only the most primitive assumptions, can generate the prediction that workers should become increasingly dissatisfied with their job environment.

This analysis is rooted in Adam Smith's observation that "wages in different lines of work reflect, among other things, the agreeableness or disagreeableness of the employments themselves." Other things being the same -- and Smith identified such other things as "the difficulty and expense of learning," "the constancy or inconstancy of employment," "the small or great trust which must be reposed in those who exercise them (the employments)," and "the probability or improbability of success" -- a prospective employee will choose a job with less agreeable nonpecuniary attributes over a job with more agreeable aspects only if wages on the former are greater than wages on the latter and by a sufficient amount, in his estimation, to compensate for the differences.

Analysis under competitive assumptions. Following Smith's analysis, the individual might view each job as a particular bundle of those nonpecuniary conditions which determine its intrinsic agreeableness or disagreeableness to him relative to other jobs which he could obtain. In the accompanying diagram, each point on the horizontal axis can be taken to correspond to a particular job characterized by a given level of intrinsic agreeableness. The jobs (j_x, j_y, j_z, etc.) are arrayed from left to right in increasing order of their agreeableness (or in decreasing order of their disagreeableness).[1]

This chart (and the analysis which follows) is based on two assumptions. First, it is assumed that, while each of these jobs differs from the others in the degree of its disagreeableness to the individual, each of them could be made on balance equal in overall attractiveness if it were to pay what he would regard as an exactly compensatory pecuniary reward in terms of pay or leisure time. (It should be noted that the "wage," which is measured vertically in the diagram, can be changed by changing either the rate or the length of the working period.) Second, it is assumed that each individual reacts to an array of job alternatives as follows: the more intrinsically disagreeable the job, the greater the wage increase he must obtain in order to be persuaded to accept an even more disagreeable job. Alternatively, the lower the level of satisfaction and the higher the wage which the individual receives on a job, the more highly he will value the prospect of an increase in job satisfaction and the less highly he will regard an increase in wage income. This is known as the diminishing marginal rate of substitution of wage income

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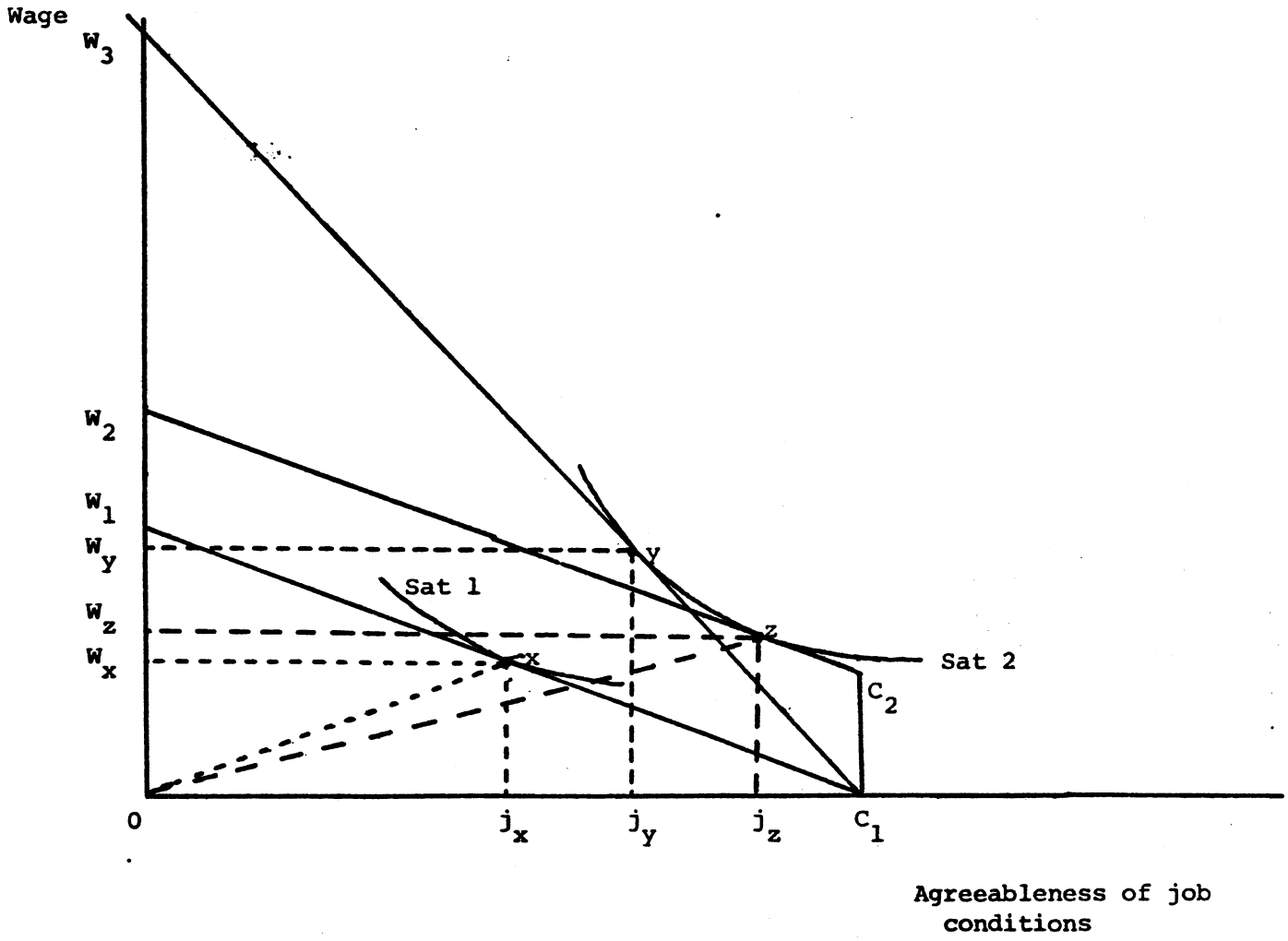
[1] It would be difficult to provide an exhaustive list of the components of job (dis)agreeableness, but these can include the quality of supervision, the extent of challenge, the hours schedule, risk, temperature, exertion, etc., which are associated with the job. They are commonly subsumed under the heading of "working conditions."


Wage
W_3
W_2
W_1
W_y
W_z
W_x
Sat 1
Sat 2
y
z
x
C_2
0
j_x
j_y
j_z
C_1
Agreeableness of job conditions

for nonpecuniary gratification. It is reflected in the convexity of the "Sat" (for satisfaction) curves in the diagram, each of which describes a set of jobs with combinations of wage rates (measured on the vertical axis) and job conditions (measured on the horizontal axis) which are equally attractive to an individual.[1] The higher the Sat curve the individual can locate on, the better off he is: for on Sat 2 each job commands a higher wage than it would on Sat 1.

His actual choice of job will be determined by the tradeoff he is willing to make between wages and job agreeableness (the Sat curve), taken in conjunction with the alternative combinations of wages and "conditions" actually available to him in the marketplace; and the set of available combinations is determined by both the average level of wages and the structure of wages (i.e., relative wages) prevailing at the time. (In the diagram, one such set of attainable combinations is depicted by the line W_1C_1 which portrays a wage structure in which the market wage for a given skill increases with the disagreeableness of the job.[2] Our individual will actually choose job conditions of j_x which pays w_x, or point x on W_1C_1. Point x leaves him on his highest attainable Sat (or indifference) curve: it is the point of tangency between W_1C_1 and an indifference curve (Sat 1).

Now suppose that general wage increases occur regularly and that, for the sake of expositional convenience, they are distributed among all jobs as

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[1] For example, each combination of wage rate and job agreeableness described by Sat 1 yields equal satisfaction to the individual. However, each point on Sat 2 yields a higher level of satisfaction than any point on Sat 1.

[2] W_1C_1 need not be a straight line; it could be a curve concave to the origin if employers are confronted by diminishing returns, or increasing costs, as they continue to improve the job environment.

equal absolute increases. After each such occurrence, our worker could, if he wished, remain on his job and take the full increase in wages. Or he could move to a less disagreeable job which now, since the general pay increase, pays as much as his former job did -- and so exchange his wage increase for a better job. Or he could combine parts of the two options and move to a job offering less of an improvement in working conditions but some increase in pay above the pre-raise level on his present job. Which course would he choose? With each succeeding increase in his wage income, the probability increases that he would prefer a job which would yield him more nonpecuniary gratification (or less displeasure) as well as more income. (In our diagram, a general wage increase would be represented by upward movement from the diagonal W_1C_1 to W_2C_2. Tangent to W_2C_2 is the indifference curve Sat 2, depicting a higher level of overall satisfaction than Sat 1. Tangency point z means that a job with conditions j_z is now preferred to a job with conditions j_x.)

Thus far labor market analysis accords quite well with psychological theories of need satisfaction, notably those advanced by Maslow, which hold that, as more material, lower-order wants become satisfied, less material wants receive priority. In the process, work comes less to be regarded as a distasteful means; it is increasingly expected to be a satisfying end in itself as the general level of want-satisfaction rises.[1] In terms of economic analysis, this is depicted by an increasing preference for nonpecuniary job gratifications over wage income as one's opportunity to obtain more of either

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[1]Our analysis, of course, greatly oversimplifies Maslow's work. Maslow spoke of five kinds of needs, physiological, safety, belongingness, esteem, and self-actualization. We have combined these into two, pecuniary (lower order) and nonpecuniary. We have also substituted an assumption of marginal substitution for his own well-known assumption that only one need will be prepotent at a time. (In economists' terms the prepotency assumption would require that the satisfaction curve be drawn with an L-shaped kink.)

or both increases. This can be illustrated on the diagram by a comparison between points x and z. Although the "terms of trade" between pecuniary and nonpecuniary conditions available to the individual are the same under C_1W_1 and C_2W_2, the worker would prefer a job combination z which is characterized by a higher agreeableness/wage ratio than job combination x. Thus, under these assumptions, the ray oz (the dashed line describing jobs with the same ratio of wages to job agreeableness but with different levels of satisfaction) is less steep than ox. This leads to the following prediction:

> Prediction 1. The higher the overall level of real wages, the greater is the worker demand for superior nonpecuniary conditions, and therefore, the more rapid the rate of increase in the general level of real wages, the greater the rate of increase in worker desire for better nonpecuniary conditions.

Now, to return to our diagram. Although the worker would prefer the mix of income and job agreeableness represented by point z, his present employer might initially leave job conditions unchanged, i.e., at j_x even though the rate of compensation may have increased. This might generate manifestations of discontent such as quits, strikes, or absenteeism (all of these being means by which workers may substitute leisure for money). However, from the economists' point of view these manifestations of discontent would set in motion corrective tendencies. In the first place, employers, confronted with this discontent might decide that investments in the amelioration of work environment would be more productive than across-the-board wage increases. Thus, through improving the work environment, they would move the job along the OC axis toward j_z, perhaps for less than the cost of an equivalent wage increase.

Alternatively, the employer can leave the nature of his jobs unchanged, but might wish to change the wage differentials between jobs so that workers in the more disagreeable jobs receive a relatively higher wage than previously. In terms of the diagram, an employer would offer employment on the terms described by C_1W_3, rather than C_1W_1. Comparing the two wage structures, it is clear that the wages are little changed for the most agreeable jobs (near C_1), but that the difference between the new and the old wage grows with the disagreeableness of the job. We have drawn the new wage schedule (C_1W_3) so that the maximum satisfaction available is Sat 2, the same satisfaction level achieved by a general increase in wages (for all jobs) or a general redesign of jobs to reduce their disagreeableness. However, with the revised pattern of wage differentials, the tangency point of maximum satisfaction, y, describes a job with a different mix of wages and job disagreeableness. When compared to the alternative of a general absolute wage increase in which wage w_z and job agreeableness j_z are chosen, the change in the wage structure results in a shift to higher-wage (w_y) but less agreeable jobs (j_y).

In other words, the changing wage structure makes the cost of accepting a relatively agreeable job, in terms of sacrificed wages, much greater to a worker than previously. This, incidentally, helps to explain why some labor disputes which seem to originate in grievances over working conditions are resolved by cash settlements. It is often assumed after the fact that the workers were really interested only in cash all along, but it could well be that they were literally seeking "compensation," either in improved nonpecuniary conditions or in more pay.

The employer's choice among these alternatives will depend on the relative cost of each. Under the conditions of perfect mobility which we

have been assuming, this analysis yields an additional inference:

> Prediction 2. The relative level of discontent with the nonpecuniary conditions in a particular industry at any given time is not related to that industry's wage ranking at that time. Under the assumed conditions of perfect mobility, interindustry differences in wages would just offset opposite differences in job agreeableness or disagreeableness.

Moreover, these propositions could be made operational, if one were to accept changes in the following measures as indicative of changes in worker dissatisfaction with nonpecuniary conditions: (1) Quits; (2) Strikes; (3) Accidents; (4) Absence from work; (5) Productivity (which is affected by changes in (1)-(4) and, in addition, reflects more subtle and less quantifiable changes in the level of worker satisfaction, e.g., slowdowns).

Analysis under noncompetitive assumptions. At this point, however, we must relax our assumption of perfect worker mobility which enables the wage structure to play as strong a compensatory role as we have assigned it (and which has enabled us to draw a tradeoff line of attainable wage-nonpecuniary bundles running in a southeasterly direction in the diagram). In fact, it is common knowledge that many jobs which are generally regarded as very agreeable, including many prestigious jobs, are also high-paying jobs, while many onerous, dreary, or otherwise distasteful jobs are not compensated for by correspondingly high wages. This is because it is not feasible for many employees to find employment in jobs which are good jobs all around. They might be prevented from doing so by lack of know-how (due to what Adam Smith called the "difficulty and expense of learning"), by other personal shortcomings (in terms of native capacity or even integrity) when measured against

job requirements, by discriminatory barriers, by institutionally determined wage levels which are high enough to restrict employment opportunities, or even by lack of motivation to seize upon opportunities for advancement where such opportunities do exist. As a result some job markets tend to become protected enclaves with wages which are higher than necessary to compensate for unattractive job characteristics; while others, being unprotected, find that their wages are forced below compensatory levels by a relative excess of labor which they are obliged to absorb. Therefore, Prediction 2 no longer necessarily holds; it would be replaced by the contrary

> Prediction 2a. The totality of overt manifestations of dissatisfaction with nonpecuniary conditions (such as quits, absenteeism, or strikes), in a particular industry at any given time, is inversely related to its wage ranking. Thus, the greater the "premium" of an industry's wage above its compensatory level, the more reluctant are employees to leave or to risk being fired. On the other hand, workers who find themselves crowded into low-wage, deadend jobs, often in decidedly dreary surroundings, are likely to be demoralized and to feel no strong attachment to any particular job.

The foregoing does not conform to the usual model of blue-collar dissatisfaction, which regards the relatively highly paid production worker in a large-scale impersonal organization as the stereotype of contemporary proletarian discontent. Prediction 1, however, would continue to hold as long as relative wages among and within protected and unprotected markets remain unchanged. On the other hand, the assumption of job market segmentation yields the following prediction.

Prediction 3. The greater the rate of wage increase in a particular industry relative to the average rate of wage increase in the economy, the fewer the overt manifestations of dissatisfaction in that industry. Thus, for example, if an industry's wage "premium" increases, its employees will rate alternative job opportunities less favorably.

Education. Thus far we have considered causes of increasing worker dissatisfaction originating in either changes in income or imperfections in the work environment. Increased dissatisfaction has also been attributed to the increased educational attainment of blue-collar wage earners. Can our analysis tell us anything about the impact of education? Education might have two sorts of effects:

1. It might change the slope of the Sat (indifference) curve so as to increase the employee's relative preference for nonpecuniary as against pecuniary rewards. There is some psychological evidence, for example, which suggests that even when job level is held constant, educated workers prefer greater discretion than do uneducated workers.

2. Education might also increase productivity and thus income. Therefore, through its impact on income, education might move the WC curve upwards -- and so, following our previous analysis, it might move the tangency point to the right.

Thus, whichever way we look at education, it might increase relative demand for nonpecuniary conditions and also increase the overt manifestations of discontent which might emerge if employers fail to make the appropriate adjustments in the jobs they provide.

Possibly, too, one way to look at "overeducation" is to say that the

overeducated person is one who, through increased education, has developed preferences to move to the right on the OC axis, but who has been frustrated in his desire by his employer's failure to offer the job which he might prefer (even at a lower wage).[1] Further, where a union is present, it may not be possible for an employer to adopt job enrichment as a method of raising total compensation. If union policy is biased towards cash rather than amelioration of nonpecuniary conditions -- which it may be when bargaining power is concentrated mainly in the hands of the national union which tends to specialize in the delivery of uniform monetary gain to a heterogeneous membership -- the employer might be unable to pay out the "extra" compensation in a form which would maximize employee efficiency and satisfaction (and, thereby, possibly hold down the total economic cost (in salary plus amenities) of the settlement).

To summarize this section, while the economist can find reasons for anticipating an increase in worker dissatisfaction due to a combination of increased income and increased education, he can also find reasons why such dissatisfaction should generate self-corrective tendencies. And if he posits the existence of imperfect labor markets, he would expect discontent to manifest itself in productivity-depressing activity (e.g., increased turnover) where and because wages are lowest, rather than where wages are high.

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[1] Note that despite some concern with possible "overeducation" most economists continue to believe that increasing educational attainment of the work force is required for the efficient performance of (changing) jobs and thus still tends to raise productivity rather than to lower it. Their belief derives from a theory which holds that the most powerful determinant of the growth of education has been economic motivation and that, if and as the rate of return to education -- measured by the increase in income which it yields relative to the cost of attaining it -- declines, the growth would slow down. It should be noted that this theory must assume that the demand for education is based on its true contribution to productivity, rather than a demand for educational credentials as a cheap screening device for employers confronted with an excess supply of applicants for admission to protected, high-wage markets.

While his theory might lead him to expect increasing dissatisfaction with the quality of working life as a function of secularly rising levels of income, it would also predict that such a phenomenon would develop gradually. If in fact it developed suddenly and dramatically, he would have to regard it as an exogenous "ad hoc" influence, and economists distrust "ad hoc" explanations. (Their victory only a decade ago over the Triple Revolutionaries, who predicted that the advent of automation would generate a quantum jump in productivity, only increases their suspicion of the new batch of claims that a sudden change in worker attitudes is now responsible for a precipitate decline in productivity growth.) Therefore, confronted with some (though mixed) evidence of declining productivity, as well as of increasing quit rates, strike activity, absenteeism, and accidents, they prefer to investigate the operation of more familiar determinants. If these determinants can satisfactorily explain the phenomena in question, increasing worker dissatisfaction might still exist, but its existence would not pose a problem in which the economist need be very interested. If, on the other hand, the explanatory power of the other variables proves insufficiently strong, economists would have to be concerned with dissatisfaction.

CHAPTER 2

The Possible Impact of Job Dissatisfaction on Workplace Variables

In this chapter we look at movements in five behavioral measures of workplace behavior -- productivity, quit rates, absenteeism, strikes, and accidents -- and consider whether such movements can be satisfactorily understood in terms of "conventional" explanations (those relating to such factors as business cycles or relative wages) or whether there is a residual leftover which perhaps can be explained only by increased job dissatisfaction.

Productivity

Increased dissatisfaction with work could adversely affect productivity (defined as output per manhour) in various subtle ways, even if it had no demonstrable effect on turnover, accidents, absenteeism, or strikes. Such less visible behavior could take the form of apathy, loss of motivation, inadvertent carelessness, more purposeful foot-dragging, or even petty sabotage, and especially resistance to the introduction of technological change. There is an obvious premium on such less overt behavior, since it involves less loss of income to its perpetrators than the more overt types of behavior such as quitting; in the case of time-workers, it need cause no immediate or direct loss of income at all.

Of course, well established unions have preferred to express discontent through more concerted and overt activities, such as strikes, even if these are more costly, in part because the more surreptitious activities are a less efficient means of communicating dissatisfaction to management. Nevertheless, decreased productivity, regardless of the form it takes, may eventually lead

management to suspect worker dissatisfaction as a possible cause. If so, according to the analysis in Chapter 1, management should find it increasingly profitable to act on this suspicion by diverting funds away from wage increases and towards various forms of job redesign, such as job enrichment. This course of action, which may raise productivity via improved morale, might also tend to dampen productivity by requiring the use of technically less efficient production techniques. In this way, dissatisfaction could have an adverse impact on productivity either directly (or psychologically), through reducing motivation, or indirectly (technically), as a consequence of changes in production methods which themselves have been introduced to reduce dissatisfaction.

Has productivity in fact declined to the extent required to need this kind of explanation -- or will conventional explanations suffice? Economists disagree as to whether a long-run or secular decline in the growth rate of productivity is actually occurring.

Edward Denison[1] takes the negative view. He argues not only against the proposition that productivity has decreased in the long run, but also against the view that saw the beginning of a short-run decrease since the first half of the 1960's. According to Denison, "potential output per manhour" (constructed on the assumption of a constant rate of utilization of capital and labor) grew at an average annual rate of 3.31 per cent in 1948-55, dipped to 2.66 per cent in 1955-65, and then rebounded to 2.81 per cent in 1965-69. A study by Perry,[2] on the other hand, suggests a decline in the rate of

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[1] Edward F. Denison, "Comments and Discussion," in A. M. Okun and G. L. Perry, eds., Brookings Papers on Economic Activity, 3, 1971, pp. 566-573.

[2] George L. Perry, "Labor Force Structure, Potential Output, and Productivity," in Okun and Perry, op. cit., pp. 533-565.

growth in potential output per manhour, not only between the first two periods (from 2.87 per cent annual rate to 2.71 per cent) but also between 1955-56 and 1965-70 (to 2.39 per cent). But he would agree that there has been no break in trend in the postwar periods. And Nordhaus[1] not only finds a slowdown in cyclically corrected aggregate productivity growth from one period to the other (from 3.20 per cent average in 1948-55 to 2.54 per cent in 1955-65 to 2.03 per cent in 1965-71), but he interprets his findings as a "slowing trend in output per manhour...over most of the postwar period."

Perry attributes the slowdown since the mid-sixties to shifts in the demographic composition of the work force, with sharp increases in the numbers of young people and women, who are regarded as relatively less productive labor, and relative declines in prime-age males. This explanation supports his contention that no break in trend has occurred, since he expects that these demographic shifts will be arrested; hence he forecasts a pick-up in the rate of growth of productivity in the 1970's. Nordhaus' explanation, on the other hand, implies secular decline in productivity growth because it runs in terms of shifts in output and employment (rather than in labor supply) away from industries where increases in producitivity are high (such as durable manufacturing) and towards sectors where productivity increases are difficult to attain (notably services and government).[2] And this phenomenon is projected into the future.

Thus, although Nordhaus interprets recent developments in terms of a secular decline, neither he nor Perry seeks or finds an explanation in terms

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[1] William D. Nordhaus, "The Recent Productivity Slowdown," in A. M. Okun and G. L. Perry, eds., Brookings Papers on Economic Activity, 3, 1972, pp. 493-536.

[2] The decline in the shift out of the low-productivity agricultural sector also contributed to this result.

of a growth in workers' dissatisfaction with their work. On the other hand, the two interpretations are in some respects inconsistent with each other, and they yield opposing forecasts. Moreover, neither explanation is complete in its own terms with respect to the period following 1965. Thus Perry finds that he can account for somewhat less than three-quarters of the shortfall of productivity growth in 1965-70 from the 1955-65 rate of increase in terms of demographic shifts and a slow growth in demand, leaving the remainder as an "unexpected shortfall." Similarly, Nordhaus accounts for somewhat over 70 per cent of the decline in cyclically corrected productivity growth between 1955-65 and 1965-71 by changed composition of output, attributing the remainder to "unexplained productivity deceleration in individual industries" -- a phenomenon, incidentally, to which economists in the Department of Commerce apparently assign more importance than does Nordhaus.[1] It should also be noted that the most puzzling phenomenon was the steep decline in private nonfarm productivity in 1969-1970; the unexplained residuals in both the Perry and Nordhaus studies were large in those years; and (as Perry indicated) the failure of Denison's reported work to cover 1970 might have affected the nature of his results.

Thus neither of the two most extensively researched theories of productivity slowdown offers a complete explanation of the phenomenon; and, even after allowing for serious deficiencies in the data and for conceptual difficulties in measurement, there might well be scope for the play of other influences. One such influence could conceivably be an adverse shift in worker attitudes. In this case, however, we would expect that 1969-70 is not a cyclical aberration -- as a similar sharp productivity slump in 1956-57

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[1] Nordhaus, op. cit.

proved to be -- but a break in trend.

In any event, productivity is a highly complex phenomenon and one not readily measured. Productivity is the resultant, not just of worker effort, but of many other factors, and the impact of these other factors may well swamp the impact of discontent alone. However, if discontent influences effort, it may well influence other forms of worker behavior which are more easily measured. Four forms of behavior for which we have nationally aggregated data are turnover, absenteeism, accidents, and strikes.[1]

Quit Behavior

Quit rates presumably reflect dissatisfaction: if a man is sufficiently unhappy with his job -- whether about wages, hours, conditions of work, or what have you -- he will leave it if he can. Excessively high quit rates will depress productivity and add to cost, since the employer must bear the expense of recruiting and training new employees.

But before discussing our data relating to quit rates, a caveat -- turnover is by no means all bad. Economists have traditionally viewed voluntary job changes positively as the means by which employees improve their lot through moving into jobs which offer them improved pecuniary and nonpecuniary returns. In a free market turnover should also lead to a better match between jobs and abilities. Hence some turnover is essential for increased efficiency in any economy undergoing normal structural change, and some frictional unemployment, particularly that associated with voluntary job changes and labor force entry, would always be expected in a normally functioning economy.

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[1]Note again our earlier suggestion that all these four forms of behavior are costly to the employee. A reduction in effort is a less overt means of expressing dissatisfaction than, say, quitting, and it involves much less risk to the employee.

Furthermore, quit rates reflect more than changes in job satisfaction. As mentioned earlier, turnover tends to vary inversely with unemployment. In addition, according to micro-studies it is much higher among recently hired employees than among those with long seniority. Changes in interindustry wage structure, such that one industry increases its wages more rapidly than another, should induce a shift out of lower paying industries (unless prevented by institutional barriers). Uncertain work hours might also lead to job changes as would excessive overtime.

Thus, this section will seek to abstract from the influence of these other factors to see whether turnover has increased on a long-term basis in a way which might be ascribed to increased dissatisfaction with work itself. Our analysis will consist of three parts. The first makes use of the National Longitudinal Surveys to examine expressed reasons for quitting and to relate actual quit behavior to expressed job dissatisfaction. The second section looks at changes in quit rates over time, holding constant for the moment only the influence of unemployment. Our last section takes a variety of other factors into account. It presents a regression analysis of a number of possible determinants of turnover, again looking for possible "residual" behavior which might be explained by basic changes in workers' attitudes toward their jobs.

Expressed job dissatisfaction and quit behavior. Previous macro-analyses of turnover at the industry level have usually obscured the variety of reasons for which individuals change their jobs, in part because of limitations in the available data. Thus it seems important at the outset to attempt to assess the relative importance of job dissatisfaction as a cause of turnover.

Table 1, taken from the National Longitudinal Surveys, gives percentage

Table 1

Reason for Quitting Job Held Previous Year, Per Cent Distribution by Race

	Males, 15-25 Years in 1967			Males, 45-59 Years in 1966		
	White	Black	Total	White	Black	Total
Disliked work	7.5	8.1	7.6	4.6	4.1	4.5
Unsatisfactory wages	17.9	24.1	19.6	8.6	12.4	9.7
Unsatisfactory hours, conditions	5.6	4.6	5.2	3.4	9.5	5.2
Unsatisfactory interpersonal relations	6.0	4.6	5.7	6.3	6.9	6.4
Found better job	39.4	29.6	36.6	25.7	11.0	21.3
Disliked location or community	5.6	8.5	6.3	2.9	2.8	2.8
Health	1.2	1.5	1.3	15.9	26.0	19.2
Family or personal	5.6	7.5	6.1	3.4	4.1	3.6
Schooling	10.5	8.5	9.9	--	--	--
Moved	--	--	--	2.2	1.4	2.1
Other (drafted, imprisoned, retirement)	1.0	3.0	1.5	26.9	21.9	25.3
Number of respondents:	508	199	707	175	73	248

Source: National Longitudinal Survey data tapes.

distributions of the reasons given by respondents explaining why a cohort of younger males was separated from its 1967 jobs and a cohort of older males was separated from its 1966 jobs. For each column the base is the number of males who (a) quit the job they held the previous year, and (b) explained why they quit. The data are presented by race (with the small number of non-whites other than blacks being excluded totally from the analysis).

Several of the reported motivations for quitting -- health, schooling, moved, family and personal reasons, "other" reasons, and disliked location and community -- can possibly be excluded at the outset as not germane to our interests.[1] Thus, as much as a quarter of the quits among the younger males and half of the quits in the older male cohort seem, at least superficially, not directly related to issues of job satisfaction.

The main problem encountered in interpreting the data is the interdependence among categories. Not only is health perhaps (and wages certainly) related to job satisfaction, but expressed dissatisfaction with wages suggests that wages do not compensate an individual sufficiently for unsatisfactory hours, foremen, conditions of work, etc. Thus, expressed dissatisfaction with hours, conditions, and personal relations may be understated -- but so may be expressed dissatisfaction with wages.

Of the specific reasons for quitting, it is striking that the largest proportion (particularly among younger employees) was made up by individuals who stated that they had found a better job elsewhere. The fact that an individual reports that he has found a better job can mean that almost any of the aspects of the old job were unsatisfactory (or undercompensated). Never-

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[1] On the other hand, the psychological literature on job dissatisfaction argues strongly that job dissatisfaction is closely related to such factors as mental and physical health, family solidarity, and the like.

theless, in their responses these individuals mentioned the "better" nature of the new jobs, not the unsatisfactory nature of the old one. Thus, active job dissatisfaction possibly may be a less important (or at least less manifest) reason for changing jobs in these cases than it is for those who specify particular causes for dissatisfaction.

These exclusions, if valid, greatly narrow the amount of quit behavior which is potentially related to job dissatisfaction. If we now assume that quits due to job discontent will be most commonly expressed reactions to unsatisfactory work, hours, conditions, personal relations and/or wages, then these data indicate that a maximum of 38 per cent of quits among younger employees and 25 per cent of quits among older workers are potentially related to job dissatisfaction. And if we follow the argument presented in much recent job satisfaction literature, and distinguish between dissatisfaction with the intrinsic aspects of the job itself (which is alleged to be the primary cause of recent worker unrest) and dissatisfaction with extrinsic aspects of the work environment (which include company policies, wages and fringe benefits, fellow workers, and working conditions), then we find that only 7.6 per cent of the younger workers and 4.5 per cent of the older ones say that their reasons for quitting are the ones postulated by this literature.

The racial dimension is also of interest. Blacks are less likely than whites to quit because of unsatisfactory hours, conditions, personal relations, or finding a better job, but significantly more likely to quit because of unsatisfactory wages. This finding with respect to wages can reflect the practice of discrimination or exclusion or, alternatively, the existence of systematically more unrealistic wage expectations among blacks. In turn, unrealistic wage expectations may be due to possible overestimation by black

workers of their abilities or possible underestimation of the extent of discrimination or exclusion. (In an earlier regression analysis of these same data, one of the authors found that quits among blacks increased with the magnitude of wage discrimination.)[1]

Our analysis so far has been ex-post; that is, we have looked at the reasons for quitting given by respondents after they quit. Fortunately, the National Longitudinal Surveys also permit us to compare the attitudes of those who subsequently quit with those who did not. Using these data, we conducted a regression analysis expressing the probability that an individual would quit his previous job as a function of his experience with the firm, past job instability, the industry of his job and his job attitude. To summarize the results, quitting was inversely related to years of experience with the firm, positively related to the number of jobs held in the year prior to quitting, and especially positively to expressed dislike of the job which was quit. It was high in construction and low in government. None of this is surprising, but it does confirm that commonsense notion that people who are unhappy with their jobs are more likely to leave them.

Roughly similar research was conducted as a portion of the University of Michigan Survey Research Center's 1969 Survey of Working Conditions.[2] A sample of male and female workers of all ages was asked questions regarding job satisfaction in an initial survey and then resurveyed two years later and

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[1] Robert J. Flanagan, "Discrimination, Turnover, and Racial Unemployment Differentials," mimeographed, 1973.

[2] Thomas W. Mangione, "Turnover -- Some Psychological and Demographic Correlates," in Robert P. Quinn and Thomas W. Mangione, eds., The 1969-1970 Survey of Working Conditions: Final Report to the Employment Standards Administration (Ann Arbor: Survey Research Center, University of Michigan, 1973).

asked whether they had changed jobs in the interim.[1]

As with our own NLS survey, the Michigan survey found that turnover was inversely related to both length of job tenure and job satisfaction. Moreover, the analysis indicated that younger workers and single workers were more likely to change jobs than older workers and married workers. Sex and education, however, had no significant influence. Going further, the Michigan survey broke down job satisfaction into various facets and examined the relationship between each facet and turnover for each of a variety of demographic variables. Two of the more significant findings are the following: "For men, the strongest reasons for turning over were low satisfaction with Challenge and Financial Rewards; for women, the strongest reasons were those involving Comfort...unmarried workers were more likely than married ones to turn over because of low satisfaction with Financial Rewards."[2] Overall felt lack of job Comfort and Challenge were better predictors of turnover than Financial Rewards. Thus this survey offers some support for the worker alienation hypothesis, although it provides no evidence as to whether alienation is increasing.

Quit rates over time (adjusted for unemployment). Since both the National Longitudinal and Michigan Surveys suggest that there is a strong positive correlation between expressed job dissatisfaction and subsequent quit behavior, it would seem to follow that an increase in job discontent nationally (or in specific industries). But have quit rates increased over

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[1]The sample (N=311) was designed for pretest of a later and much larger nationwide sample, and there it was not strictly representative. Note, too, that the study was concerned with total turnover, both voluntary and involuntary, rather than just voluntary quits alone, as in our study.

[2]Mangione, op. cit., p. 348.

time? A quick glance at the table below indeed shows a rather sharp increase beginning in 1965 and 1966 (note that since 1965 the rate fell below the 2.1 level only once, in 1971).

Quit Rates, Selected Years

1955	1.9	1960	1.3	1965	1.9	1970	2.1
1956	1.9	1961	1.2	1966	2.6	1971	1.8
1957	1.6	1962	1.4	1967	2.3	1972	2.2
1958	1.1	1963	1.4	1968	2.5		
1959	1.5	1964	1.5	1969	2.7		

Quick glances are often misleading. The low quit rates of the late 1950's and early 1960's may only reflect the high levels of unemployment during that period. Can the increase in quit rates be explained in terms of changes in unemployment rates alone, or must other factors (possibly including dissatisfaction) also be taken into account? We approached these questions first by using standard multiple regression techniques to estimate an extremely simple model of quit behavior in which the industry quit rate is postulated to be a function of the private nonagricultural unemployment rate (as an index of the tightness of the labor market) and a time trend. It is well known that quit rates rise in tight labor markets, and in the present context it is particularly desirable to control for the effects of the extremely low unemployment rates of the late 1960's before searching for evidence of a time trend. (In our next section we approach these questions by expanding the regression model to include other potential influences on quit behavior and observe the effect of the added variables on the time trend. If changes in the added variables are the source of uptrends in quit rates

observed in the first stage, the time trend will no longer be significant in the more complicated regression model.)

The results of the first stage of our analysis are presented in Table 2 for total manufacturing, durable manufacturing, nondurable manufacturing, and 19 more narrowly defined (2-digit SIC code) industries. The limited availability of turnover data restricts our analysis to manufacturing industries. For each sector estimates based on annual averages of the monthly quit and unemployment rates for the period 1958 (when quit rate data for most 2-digit sectors first were published) to 1972. Estimates based on quarterly data are also presented for total, durable, and nondurable manufacturing for the purposes of comparison with a later analysis.[1]

The results offer two dominant impressions: (1) The expected cyclical sensitivity of quit behavior is ubiquitous. The quit rate in all industries rises as labor markets tighten, although there is considerable interindustry variation in the magnitude of this relation, with the lowest cyclical sensitivity observed in the petroleum and apparel industries, and the highest in the lumber and furniture industries. (2) There is a significant, positive time trend in quits in most industries over the 1958-1972 period once cyclical influences are held constant. For example, the estimated coefficient on the TIME variable for total manufacturing implies that after controlling for cyclical influences, the quit rate increased 4.4 hundreths of a percentage point each year.

There are four exceptions to this statement. For three industries --

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[1] As an example of the interpretation of this table, the numbers in the top line indicate that (1) for a one percentage point increase in the private nonagricultural unemployment rate, the quit rate for all manufacturing falls by a quarter of a percentage point, and (2) given the influence of unemployment, there is a further increase in quit rates of .044 each year.

Table 2

Simple Quit Model Regression Results by Industry, 1958-1972

SIC Code		Regression Coefficients: Private nonagricultural Unemployment Rate	Time trends: Positive	Time trends: Negative	Time trends: Not sign.
00	Manufacturing (annual)	-.25	.044		
	Manufacturing (quart.)	-.28	.016		
01	Durable goods (annual)	-.27	.034		
	Durable goods (quart.)	-.31	.012		
19	Ordnance	-.24		-.032	
24	Lumber & wood	-.45	.070		
25	Furniture	-.44	.120		
32	Stone, clay, glass	-.27	.067		
33	Primary metals	-.29	.028		
34	Fabricated metals	-.39	.038		
35	Nonelect. mach.	-.25			.005
36	Elect. equip.	-.24			.007
37	Transpt. equip.	-.20			.011
38	Instruments	-.20	.015		
39	Misc. manuf.	-.32	.070		
02	Nondurable goods (annual)	-.23	.068		
	Nondurable goods (quart.)	-.25	.022		
20	Food	-.29	.091		
21	Tobacco	-.20	.051		
22	Textile	-.18	.175		
23	Apparel	-.12	.075		
26	Paper	-.33	.028		
27	Printing & publ.	-.19	.018		
28	Chemicals	-.17			.012
29	Petroleum	-.114	.026		
30	Rubber & plastic	-.37	.090		
31	Leather	-.29	.111		

nonelectrical machinery, electrical equipment, and transportation equipment -- there is no significant trend. Interestingly, these three industries seem to encompass many of the large-scale, assembly-line operations which are alleged to be the locus of increased worker dissatisfaction. The fourth industry, ordnance, shows a significant negative time trend.

There is considerable dispersion in the magnitude of the time trend, ranging from highs in textiles (where a continuation in the estimated trend would add one percentage point to the industry quit rate every six years), furniture, and leather to slow increases in printing and instruments (where a continuation would increase the industry quit rate by one percentage point every 50 years). Also among the more rapid trends are lumber, stone, clay and glass, food, apparel, and rubber.

A more complex analysis. It would, of course, be naive to attribute the trends just mentioned to an imprecisely measured factor such as "job dissatisfaction" without first testing alternative explanations of quit behavior to see if they account for the trends reported in Table 2. In the expanded regression models reported in subsequent tables we have tested for the following potential influences.

(1) Relative average hourly earnings defined as relative to the average for all manufacturing (and labeled RELWAGE). For the total manufacturing regressions, the variable is defined relative to average hourly earnings in all private, nonagricultural industry. Several studies of interindustry quit rate differentials have reported a negative relationship between wage levels and quit rates and have variously interpreted this result as evidence of (a) irrationality or (more likely) imperfections in the wage structure, as argued in Proposition 2a on p. 11, or (b) specific training investments by

employers.[1] (According to the latter theory, employer investments in training increase a worker's productivity in the firm but not in the market at large; a worker is then paid a wage which is higher than could be earned at another firm, to minimize the capital loss associated with post-training quits, but lower than the total value of the trained worker to the firm.) Over time, an industry quit rate is also expected to be inversely related to relative hourly earnings, although this relationship may reflect interindustry differences in the timing of union contracts, changing supply-demand conditions in labor and product markets, and employer recruitment policies. Whatever the source of a change in the wage ranking of an industry, a greater flow of workers from low to high relative wage industries is expected as long as employment opportunity is the same in each sector.

(2) Hours of work. Workers' quit behavior may be motivated in part by an effort to find a relatively congenial hours schedule. In our work with the variable we tested two alternative hypotheses concerning workers' hours preferences. The first specification of hours -- average weekly hours in an industry relative to average weekly hours in all manufacturing -- involves the implicit assumption that workers generally prefer shorter hours schedules during periods of rising real earnings. Given the relative wage, we expect that an increase in the relative hours schedule renders jobs in the industry less agreeable. (In terms of Figure 1 on p. 5a, this results in a shift of the opportunities facing employees in the industry from W_2C_2 to W_1C_1, and a reduction in the level of worker satisfaction.) By this argument, the quit rate should be positively related to relative weekly hours

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[1] See Lloyd Ulman, "Labor Mobility and the Industrial Wage Structure in the Postwar United States," Quarterly Journal of Economics, February 1965; Donald Parsons, "Specific Human Capital: An Application to Quit Rates and Layoff Rates," Journal of Political Economy, November/December 1972.

(which is labeled RELHOUR in the reported results). We also tried relative overtime hours (OT) as an alternative specification of this same effect.[1]

Our second hypothesis is that workers have a preferred hours schedule and will tend to quit when offered either longer or shorter schedules. This implies a U-shaped relation between the quit rate and weekly hours (ceteris paribus) as shown in Figure 2 with the minimum point, $\bar{H}$, at the preferred hours schedule. We tested for this form of a relation in some regressions by specifying weekly hours as a quadratic (reported as HOURS and HOURS^2 in the results). Of course, this specification presumes a symmetric relationship around $\bar{H}$, as drawn in Figure 2, although workers may in fact respond differently in their quit behavior to relatively long and relatively short hours schedules.

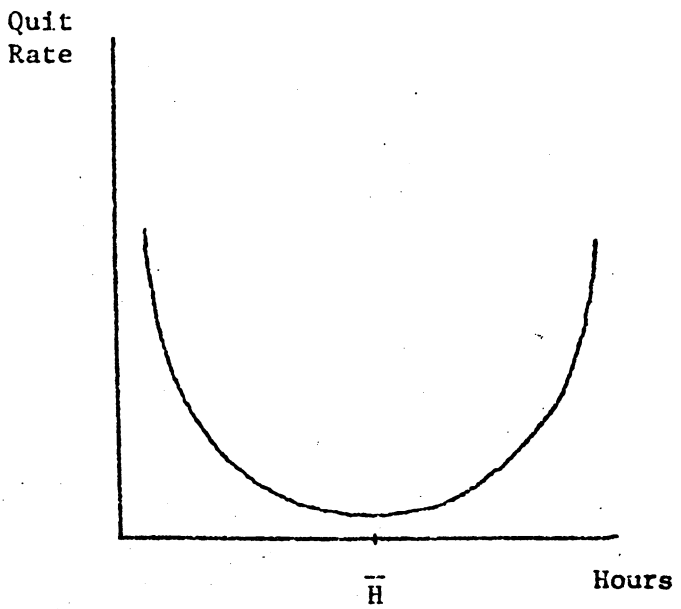

Figure 2

[1] Weekly overtime in manufacturing rose from an average of 2.7 hours for 1960-64 to 3.5 hours for 1965-70. Although some of this reflects the tighter labor markets of the late sixties, overtime remained higher during the recession of the early seventies than would have been expected on the basis of past experience.

(3) Length of service. Previous studies of quit behavior found consistently that a quit is most likely during the early months or years of a job. Since most low seniority workers are young, age becomes a viable proxy for length of service. Unfortunately, the age distribution of employment is not available on an annual basis at the 2-digit level. It is, however, available for total, durable, and nondurable manufacturing and a variable labeled YOUTH, the proportion of the work force under 24 years of age is used in regressions for these sectors reported in Table 3.[1]

(4) Investment per manhour. The value of investment in machinery and equipment per manhour was used as a proxy for capital intensity which in turn may be related to working conditions in an industry. The net effect of investment on quits cannot be predicted a priori since it could exert both a positive and a negative influence. On the one hand, an industry with a high rate of investment might be making work less onerous by the introduction of labor-saving machinery, thereby reducing the quit rate; on the other hand, it might create more worker uncertainty and discomfort as a result of the rapid and widespread introduction of change, thus increasing the frequency of quits.

(5) Demographic composition of work force. Some of the recent anecdotal evidence on worker discontent suggests that dissatisfaction is voiced particularly among groups of black workers. As indicated earlier, blacks could be expected to quit more frequently as a reaction to wage discrimination and occupational segregation, and there is some cross-section evidence supporting this relation. It is also true that by these measures discrimina-

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[1]The new hire rate was tried as a proxy for short-service in unreported regressions at the 2-digit level, but the variable is so closely correlated with the unemployment rate (and to some extent hours) that it introduced severe multicollinearity into the regressions and was dropped.

tion has been lessening during the period under study. Nevertheless, to the extent that discrimination remains, black quit rates will tend to exceed white quit rates. Some observers also argue that relatively high black quit rates may reflect the present effects of past discrimination and housing segregation which resulted in unstable work habits.

Furthermore, for reasons that are more closely connected with labor force withdrawal for family formation and care than job dissatisfaction, women are alleged to quit more frequently than men, although this effect is presumably strongest in the younger age groups. Since both groups have become proportionately more important in the labor force over the past decade, the per cent nonwhite (NONWHITE) and the per cent female (FEMALE) should appear as independent variables in the regressions. Our attempts to incorporate these variables in the analysis were partially frustrated by the limited availability of data needed to construct the YOUTH, NONWHITE, and FEMALE variables. Nevertheless, we were able to develop these variables for total, durable, and nondurable manufacturing.

(6) YOUTH as an education proxy. Finally, there is an additional reason for inclusion of the YOUTH variable. It was hypothesized in Chapter 1 that more highly educated workers are likely to express a stronger preference for nonpecuniary compensations relative to pay than less well educated workers. Data on the educational distributions of the work force within our industrial categories and for the time period covered by this analysis are lacking. However, since the average level of educational attainment has risen in the postwar period, it might be argued that younger workers, being better educated, would also be more prone to quit over dissatisfaction with working conditions. Hence the YOUTH variable might also serve as a proxy for an unobtainable measure of relative education.

Results of the extended time series analysis. We shall report first on the regressions for total, durable, and nondurable manufacturing. The addition of several variables to the simple model estimated in Table 2 necessitated a shift to quarterly data in estimating the regressions for these sectors in order to enhance statistical reliability of the estimates. However, the use of quarterly data introduces a further problem of seasonality which is obviously not present with annual data. We have tried to minimize this problem by including seasonal "dummy" variables, Q2, Q3, Q4, which capture the residual variation in the quit rate in each quarter (relative to the first quarter), after the other economic and demographic influences specified in the regressions have been held constant.

The results of these regressions are reported in Table 3. To provide a guide to the information in these regressions, we shall discuss the results for the durable goods sector -- the focus of much alienation discussion -- in detail and follow with a summary of the results and salient differences observed in other sectors. The first important result from this more complex model concerns the time trend. When the influence of changes in relative hours, relative earnings rates, and the age, sex, and racial composition of the work force over the 1958-72 period is explicitly considered, the time trend of the quit rate for durable goods manufacturing is reversed. When these factors are controlled for in the regression the quit rate declines at the rate of .01 per quarter (.04 per year), indicating that the positive trend in quits observed in the simple model is an artifact of movements in the additional variables.

What is the nature and force of these influences? Consider first the influence of weekly hours schedules. Our first hypothesis was that, during a

period of advancing real incomes, workers would quit jobs with relatively long hours schedules, given their relative wage and the composition of the work force. In Table 3, we observe a strong positive influence of relative weekly hours on quits in the durable goods sector. The regression coefficient implies that on average a 2.8 per cent increase in the weekly hours schedule in durable goods manufacturing relative to total manufacturing will raise the quit rate by one percentage point.[1] (This would amount to little more than an increase of one hour at schedules prevailing in the early seventies.)

The second hypothesis tested is that workers have a preferred weekly hours schedule, and the probability that they will quit grows with the divergence between the length of schedules offered by employers and the preferences of workers. Rather than assume a preferred hours schedule and impose it on the data, the level of weekly hours in an industry was specified as a quadratic (HOURS and $HOURS^2$) to allow the data to determine the minimum point in Figure 2. If the relation between quits and hours actually assumes the U-shape suggested by this hypothesis, we should observe a negative sign on the linear hours term and a positive sign on the squared term. For the durable goods sector we do observe this sign pattern, but it is not measured

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[1] With other variables held constant, $\Delta Q = 36.03\ \Delta$RELHOURS. Thus, when $\Delta Q = 1$, ΔRELHOURS = .028.

Table 3

Quarterly Quit Rate Regressions, 1958-1972

	Manufacturing		Durable Manuf.		Nondurable Manuf.	
Constant	-6.64 (-1.02)	200.23 (1.82)	-39.47 (-3.09)*	102.50 (1.48)	24.07 (2.42)*	604.17 (2.66)*
Unemp. Rate	-.11 (-2.41)*	-.077 (-1.59)	-.12 (-2.80)*	-.067 (-1.68)	-.13 (-3.04)*	-.15 (-3.99)*
RELHOURS	11.36 (1.40)		36.03 (3.03)*		-20.65 (-1.70)	
RELWAGE	-5.73 (-.84)	-3.78 (-.63)	.21 (.32)	.30 (.55)	-6.04 (-.65)	-14.18 (-1.57)
YOUTH	8.81 (3.14)*	6.45 (2.48)*	5.64 (2.98)*	4.72 (2.86)*	8.34 (2.08)*	9.03 (2.30)*
FEMALE	3.28 (1.06)	7.40 (2.57)*	14.51 (2.32)*	21.18 (3.84)*	2.06 (.51)	5.01 (1.27)
NONWHITE	15.76 (2.02)*	27.51 (3.33)*	17.94 (2.03)*	16.70 (2.18)*	24.29 (2.74)*	15.62 (2.29)*
TIME	-.012 (-1.50)	-.013 (-1.49)	-.011 (-2.17)*	-.013 (-2.95)*	-.004 (-.47)	.003 (.50)
Q2	.12 (1.48)	.12 (1.65)	.12 (1.58)	.10 (1.65)	.18 (2.04)*	.20 (2.21)*
Q3	.80 (7.53)*	.71 (7.52)*	.89 (8.45)*	.75 (11.13)*	1.06 (7.68)*	.90 (6.67)*
Q4	-.28 (-3.20)*	-.34 (-4.17)*	-.12 (-1.62)	-.24 (-3.58)*	-.14 (-1.63)	-.18 (-1.81)
HOURS		-10.15 (-1.83)		-5.51 (-1.63)		-30.09 (-2.63)*
$(HOURS)^2$		.13 (1.89)		.07 (1.72)		.38 (2.63)*
R^2	.93	.94	.92	.94	.93	.94
durbin-watson statistic	1.55	1.83	1.57	2.06	1.34	1.62

t statistics in parentheses.

*regression coefficient significant at 5 per cent level.

within normal standards of statistical significance.[1] Thus the relative hours specification offers a better description of the relationship in durable goods manufacturing and emphasizes the importance of revised hours schedules as an alternative to changes in job design as an approach to reducing turnover.

We now turn to the remaining variables. Consistent with previous studies, the regression indicates that the quit rate also rises with the per cent of workers between 14 and 24 years of age (YOUTH). However, the FEMALE and NONWHITE variables exert more powerful influences on the quit rate in durable goods. For example, the regression implies that on average an increase of 5.6 percentage points in the nonwhite proportion of the durable goods work force yields a 1 percentage point increase in the quit rate.[2] (The same effect would require a 6.9 percentage point increase in the proportion of female workers or a 17.7 point increase in the proportion of younger workers.)

Most of these positive influences on the quit rate have increased over the period under study and thus account for the upward time trend observed in more casual models. Between 1958 and 1972, for example, the per cent of 14 to 24 year old workers in durable manufacturing rose from 11 to 17 per cent, the proportion female from 17 to 21 per cent, and the proportion nonwhite

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[1] One problem with our efforts to interpret this regression is raised by the apparent colinearity between the quadratic specification of weekly hours and the unemployment rate. (Notice that the size and significance of the coefficient on unemployment falls when the quadratic specification of weekly hours is used in both the durable goods and total manufacturing regressions.) This partially reflects the rise in hours that accompanies cyclical expansions and may also indicate a tendency for quits to continue rising in periods of particularly strong demand as unemployment approaches a frictional minimum, although vacancies continue to rise. Nevertheless, the colinearity is not evident in the nondurable goods sector, where the statistical significance of the unemployment rate increases with the use of the U-shaped (quadratic) hours specification.

[2] With other variables held constant, $\Delta Q = 17.94$ NONWHITE. Thus, when $\Delta Q = 1$, ΔNONWHITE = .056.

from 7 to 10 per cent. On the basis of these changes alone, the expected quit rate would be 1.46 points higher in 1972 than 1958, ceteris paribus.[1]

The overall performance of this model is quite good. With the exception of the relative wage variable,[2] the important explanatory variables all have the predicted effect on quits and attain normal standards of statistical significance. Moreover, the model as a whole explains over 92 per cent of the variance in the quit rate over the 1958-72 period, leaving relatively little scope for factors such as explicit measures of job content and job dissatisfaction, even if the latter were available.

On the other hand, if young, female, and nonwhite workers are among the most sensitive to job content, the growing importance of these groups in total employment could stimulate additional quits. Such a tendency would be enhanced if the extent of job dissatisfaction among young, female, and nonwhite workers actually grew over the period. We will discuss some of these issues in Chapter 3.

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[1]The total effect can be decomposed into a .34 rise in the quit rate attributable to a younger work force, a .58 rise due to increased female employment, and .54 due to increased nonwhite employment in this sector.

[2]It might be observed that in the manufacturing and nondurable categories, the relative wage coefficients have the negative signs consistent with Prediction 2a (on p. 11), although the values lack statistical significance. In the durable group, the sign is not negative, nor are the values significant. This could mean that year-to-year fluctuations in relative wages were somehow offset by opposite fluctuations in nonwage conditions, consistent with Prediction 2 on p. 10. But this is hardly probable. On the other hand, the absence of any indication of a negative relationship in the durable group might mean that the level of relative wages in this group has been consistently so high -- higher than required just to offset nonpecuniary drawbacks -- that quits would be substantially unaffected by short-term fluctuations in that level. Nevertheless, it should be noted that if our rough and ready model leaves little or no explanatory role to increased worker dissatisfaction with nonwage conditions, neither does it assign much of a role to relative wages in determining quits -- and in this respect it apparently differs from earlier cross-section (interindustry) studies.

Detailed time series results. Unfortunately, several of the demographic variables which played an important role in the regressions in Table 3 are not available for the more narrowly defined 2-digit manufacturing industries. However, the availability of the wage and hours variables for these industries suggests that further analysis at this level would be useful to determine whether these variables alone account for the time trends reported in Table 2. The strongest findings from these regressions are reported in Table 4.

As expected, in several industries movements in the relative hours and earnings variables accounted for changes in quit rates associated with time in the simple unemployment model of quit behavior discussed earlier. In these industries (which are listed in Table 5), the time trend lost its earlier statistical significance. On the other hand, significant positive time trends remain in about half of the 2-digit industries as well as the durable and nondurable aggregates. Industries in this list recording increases (+) and decreases (-) in the magnitude of the positive time trend with the shift in models are divided about evenly (see Table 5).[1] However, a comparison of the results reported in Tables 3 and 4 for total, durable, and nondurable manufacturing indicates that the remaining positive time trends ultimately reflect changes in work force composition. Although the time trends for durable and nondurable manufacturing are positive when the demographic variables are excluded (in Table 4) they are negative and insignificant respectively in

[1] In a few sectors, a dummy variable for the period 1966-72 provided a better specification than the time trend, and where this occurred the results for the dummy variable are included. In several other sectors, however, the dummy seemed highly colinear with the relative wage and/or hours variables. In these cases the dummy variable specification was rejected in order to preserve the role of the behavioral variables.

Table 4

Quit Rate Regressions, 1958-1972, 2-Digit Manufacturing Industries

	(Constant)	Unemp.	Rel AHE	Rel HRS.	Hours	Hours^2	Inv. m.h.	Time	Dum 1966-72	R^2	d
+ Manufact.	1.41 (3.02)	-.44 (4.47)*	-7.52 (1.55)	14.63 (2.80)*				-.055 (1.81)		.97	2.48
+ Durable (a)	1.12 (1.69)	-.78 (4.63)*	4.67 (.41)	1.03 (.08)				.033 (2.34)*		.93	1.84
+ (b)	.37 (.64)	-.51 (4.33)*	6.35 (.85)	22.10 (2.69)*					.35 (4.10)*	.96	2.62
+ Ordnance (a)	2.45 (8.17)	-1.03 (7.48)*	-2.12 (1.81)	3.22 (1.28)				-.049 (4.12)*		.89	1.77
(b)	3.79 (.87)	.27 (6.47)*	-3.82 (2.65)*	3.76 (1.05)				-.07 (4.31)*		.87	1.72
+ Lumber (a)	1.44 (2.46)	-.60 (3.72)*	-2.11 (1.21)	.21 (.02)				.038 (1.98)		.93	1.88
+ (b)	1.67 (3.07)	-.66 (4.32)*	-3.11 (1.52)	11.59 (2.33)*					.19 (1.69)	.92	2.18
+ Furniture (a)	1.17 (1.74)	-.76 (6.91)*	-3.43 (.78)	1.83 (.21)				.048 (2.45)*		.96	1.65
+ (b)	.04 (.10)	-.70 (5.86)*	-9.75 (4.29)*	-.76 (.10)					.34 (2.67)*	.96	2.02
+ Stone, Clay, Gl. (a)	1.92 (4.70)*	-1.05 (4.91)	9.90 (1.69)	2.32 (.37)				.024 (1.67)		.94	1.60
+ (b)	1.78 (6.90)*	-.91 (6.31)*	9.82 (2.64)*	.13 (.03)					.31 (3.96)*	.97	2.22
+ Primary Met.	2.00 (1.38)	-1.19 (2.23)*	-2.23 (.28)	5.55 (.52)				.029 (.61)		.81	1.96

Table 4 (continued)

	(Constant)	Unemp.	Rel AHE	Rel HRS.	Hours	Hours^2	Inv. m.h.	Time	Dum 1966-72	R^2	d
+ Fab. Metals (a)	1.76 (2.26)*	-1.01 (6.00)*	2.99 (.34)	-1.87 (.19)				.036 (2.08)		.95	2.15
+ (b)	6.87 (3.12)*	-.91 (6.12)*	10.71 (1.55)	-20.43 (1.55)			.90 (2.41)*	.021 (1.11)		.98	2.65
Non-Elect. Mach. (a)	1.44 (.23)	-.15 (3.47)*	-13.69 (1.53)	15.48 (2.53)*				.002 (.27)		.95	1.93
(b)	87.57 (2.32)*	-.18 (3.61)*	-10.05 (.88)		-3.67 (2.05)	.045 (2.13)*		.003 (.26)		.96	2.28
Elect. Equip.	-14.87 (.92)	-.30 (4.84)*	-12.32 (1.46)	30.40 (2.39)*				-.019 (.70)		.90	2.31
Transpt. Equip. (a)	5.45 (1.28)	-.18 (5.06)*	-4.87 (1.27)	2.51 (.47)					.33 (2.74)*	.92	1.71
(b)	10.15 (1.82)	-.23 (6.02)*	-2.44 (.39)	-4.65 (.76)				.014 (.76)		.87	1.57
Auto	6.62 (3.71)	-.22 (9.21)*	.70 (.33)	-5.28 (2.92)*				.008 (.47)		.95	1.68
Instruments	3.14 (.65)	-.19 (8.89)*	-11.48 (1.80)	16.95 (3.13)*				.002 (.12)		.95	2.41
Misc. Manuf.	-35.87 (1.69)	-.55 (4.50)*	-18.59 (1.81)	56.98 (2.11)				.135 (3.69)*		.92	2.26
Nondurable	-12.32 (.94)	-.31 (6.04)*	-34.10 (1.42)	47.16 (2.17)				.103 (3.92)*		.94	2.38
Food	14.97 (1.32)	-.25 (4.33)*	-27.03* (2.88)	12.71 (2.24)*				.155 (7.86)*		.97	1.65
Tobacco	-9.47 (2.00)	-.30 (4.40)*	8.93 (1.70)	5.89 (2.38)*				-.023 (.37)		.92	1.98

Table 4 (continued)

	(Constant)	Unemp.	Rel AHE	Rel HRS.	Hours	Hours^2	Inv. m.h.	Time	Dum 1966-72	R^2	d
Textiles (a)	-8.01 (.41)	-.12 (1.38)	14.18 (1.19)	-.12 (.009)				.162 (5.16)*		.95	1.84
(b)	-21.78 (1.24)	-.092 (1.09)	-1.65 (.12)	25.30 (2.36)*					1.45 (5.18)*	.95	1.99
+ Apparel (a)	.80 (1.92)	-.48 (6.27)*	-5.00 (5.12)*	8.25 (2.55)*				.023 (5.31)*		.95	1.52
+ (b)	.12 (.39)	-.41 (6.80)*	-5.85 (8.59)*	5.20 (2.19)*					.21 (7.73)*	.97	2.43
Paper (a)	-9.14 (.36)	-.34 (5.02)*	-14.44 (.72)	25.17 (2.86)*				.080 (1.41)		.96	1.55
(b)	-.24 (.01)	-.23 (3.79(*	-26.27 (1.67)	26.67 (4.03)*			86.15 (3.15)*	.106 (2.43)*		.98	2.08
Printing	-.97 (.09)	-.18 (3.31)*	-5.70 (.77)	10.64 (2.11)				.033 (2.92)*		.93	2.08
Chemicals	.48 (.08)	-.19 (6.81)*	-4.66 (1.59)	6.45 (1.90)				.008 (1.08)		.95	2.33
Petroleum	-7.70 (1.92)	-.16 (4.11)*	1.42 (.55)	7.17 (3.49)*				.006 (.70)		.93	1.52
+ Rubber & Plastic (a)	1.47 (5.32)*	-.68 (5.89)*	-6.71 (1.26)	11.05 (2.37)*				.010 (.27)		.97	1.99
+ (b)	5.37 (3.04)*	-.55 (3.81)*	-9.65 (1.88)	12.99 (3.01)*			.71 (2.29)*	-.049 (1.03)		.98	2.28
+ Leather (a)	.82 (1.65)	-.59 (6.60)*	-3.52 (2.48)*	3.74 (1.37)				.038 (6.88)*		.96	1.82
(b)	856.49 (3.03)*	-.25 (3.94)*	-4.20 (.50)		-45.28 (3.02)*	.60 (3.03)*		.119 (6.99)*		.96	1.88

Note: Absolute value of t statistics in parentheses; log linear regressions denoted by +; * = coefficient significant at 5 per cent level.

Table 5

Summary of Time Trend Information in Table 4

Industries with time trends which are:

positive	negative	not significant
*Durable (+)	Manufacturing	*Stone, clay, glass[a]
*Lumber (+)	*Ordnance	*Primary metals[a]
*Furniture (-)		*Fabricated metals[a] (with Inv./m.h.)
Misc. Manuf. (+)		Nonelectrical machinery
Nondurable (+)		Electrical equipment
Food (+)		Transportation equipment
Textiles (-)		Automobiles
*Apparel (-)		Instruments[a]
Paper (with Inv./m.h.) (+)		Tobacco[a]
Printing (+)		Chemicals
*Leather (-)		Petroleum[a]
		*Rubber[a]

Notes:

(+) indicates that magnitude of positive time trend is larger than in simple model reported in Table 2.

(-) indicates that magnitude of positive time trend is smaller than in simple model reported in Table 2.

[a]indicates sectors in which a time trend was positive in the simple model and is now insignificant.

*Log-linear regression.

Table 3 when the influence of young, female, and nonwhite workers are explicitly considered.

In the regressions in Table 4, the impact of unemployment was significantly negative in all cases except textiles. The relative average hourly earnings variable usually had the expected negative sign, but the relationship was significant in only eight industries: ordnance, furniture, instruments, miscellaneous manufacturing, food, apparel, rubber, and leather. Only in the stone, clay, and glass sector was the variable both positive and significant.

The role of weekly hours was interesting. Our first test related the quit rate to the length of the weekly hours schedule relative to the manufacturing average. To the extent there is further empirical support for this relationship, it is of interest to know whether relatively high overtime or regular hours schedules are responsible. In experiments with alternative measures of relative hours, relative overtime hours usually was either insignificant or inferior to other measures. Therefore, the overtime results were not reported in Table 4. Nevertheless, the relative weekly hours worked was a powerful determinant of quit behavior, being significantly positive in 17 of the 2-digit sectors. The fact that this variable outperformed relative overtime indicates that the regular hours schedules (which presumably are less transitory than overtime schedules) are more influential on quit behavior.

We also tested for the U-shaped relationship between quit rates and hours suggested by the preferred-hours-schedule hypothesis at the 2-digit level. Although the required pattern of signs was observed in a majority of the 2-digit sectors, the specification was only significant in the two cases reported in Table 4 -- nonelectrical machinery and leather. The co-

efficients imply that (ceteris paribus) the quit rate will be at a minimum with a weekly schule of 40.8 hours in nonelectrical machinery and 37.7 hours in leather (i.e., the regressions imply that these are the preferred hours schedules).

The investment in machinery and equipment per manhour was significant in only three sectors: fabricated metals, paper, and rubber. The addition of this variable eliminated the significant time trend in fabricated metals but resulted in a significant trend in paper. As noted above, the sign of the coefficient of this variable cannot be predicted a priori, since the introduction of new plant and equipment resulting from investment activity could exert opposing influences on the level of employee satisfaction. The positive coefficients in fabricated metals, paper, and rubber could signify that the effect of greater uncertainty and change outweighed any tendency of newer equipment to make work less onerous or physically disagreeable. The absence of significance elsewhere might signify a cancelling-out of these opposing influences -- or simply that the variable fails to afford a relative measure of working conditions.

In summary, the findings for 2-digit industries appear to emphasize (1) the important role of hours schedules -- a factor ignored in previous quit rate studies but quite consistent with recent manifestations of labor unrest -- in determining quit behavior, and (2) the fact that time trends in about half the industries are explained by movements in relative hours and earnings. On the basis of results for durable and nondurable manufacturing, it seems likely that the positive time trends which remain in some 2-digit industries would be eliminated if it were possible to incorporate variables for age, sex, and race in the regressions.

We conclude with a brief review of our main findings regarding recent quit behavior in manufacturing. (1) the raw data indicate an increase in the quit rate beginning in 1965-66, and our regression analysis indicates that this cannot be solely attributable to the tighter labor markets indicated by the falling unemployment rate. (2) Much of the quit increase in the late sixties which is not explained by unemployment seems to be associated with changes in relative hours schedules and changes in the demographic composition of the work force. (3) Increases in the length of the regular weekly hours schedule (relative to other industries) are more apt to stimulate additional quits than increases in relative overtime hours. (4) Increases in the proportion of nonwhite, female, and young employees in an industry were all associated with increases in the industry quit rate, but the quit rate responded most rapidly to increases in the nonwhite work force. The relation of these findings to job dissatisfaction is discussed in Chapter 3. (5) Even in the simple unemployment model of quit behavior, there was little evidence of a trend increase in the quit rates in the heavy durable goods industries characterized by assembly line production and limited control by the worker over his environment.

Absenteeism

Recent concern with the nature of work, and allegations of rising job dissatisfaction has been somewhat heightened by increases in the rate of absence from work. In this section we explore the nature of rising absenteeism and the determinants of absence rates in an attempt to: (a) identify the impact of job discontent on absence behavior, and (b) infer methods for reducing absenteeism.

Among the potential manifestations of worker discontent, the relative advantage of absenteeism, from the point of view of the worker, is far from clear. It is certainly a less overt manifestation of discontent than either striking or quitting. If the motivating concern is the content of the job, absenteeism offers no direct mechanism for changing offending aspects of the job, and inflicts an income loss on the worker as well. On the other hand, it does offer some relief from the frustration of working on unsatisfactory jobs, and, in this sense, absenteeism is similar to and perhaps a superior substitute for quitting. Further, some workers absent themselves because they are looking for a better job. Such behavior might well be especially common during periods when unemployment is high, relative to job vacancies. (Of course, to the extent that workers are able to locate preferable jobs, absenteeism would ultimately be linked to a quit when a new job is found and accepted, and job discontent would ultimately be reflected in quit behavior.)

Moreover, if worker dissatisfaction is a result of the hours schedule of the firm rather than the specific tasks associated with the job, absenteeism is a cheaper method than bringing actual hours -- as well as average levels of nonpecuniary satisfaction -- into line with workers' preferences. Two types of dissatisfaction with hours schedules can be discerned: (1) workers may be dissatisfied with the total number of weekly hours, given their wage rate and other family income; (2) workers may object to the schedule or weekly pattern of hours. The former motivation implies that a reduction of hours will reduce absenteeism, while the latter suggests that repackaging the same total number of hours (e.g., into a four day-forty hour schedule) may reduce absenteeism. Indeed, many anecdotal reports of absenteeism suggest that it is bunched at the beginning and end of the work week

as workers find that the leisure activities they prefer at high income levels require larger blocks of time.

We have pursued some of these issues to the extent possible with recently published national data on absenteeism.[1] Possibly the most striking finding is that from 1967 through 1972, a period in which worker dissatisfaction with work is alleged to have grown, Bureau of Labor Statistics data show only a very slight increase in the rate of unscheduled absences from work. The per cent of workers on full-time schedules absent part of the week increased from 3.9 per cent in 1967 to 4.3 per cent in 1972, while for all workers, the rate of full-week absence increased only from 2.1 to 2.3 per cent. Moreover, although most anecdotal discussions of worker discontent focus on conditions in the durable goods manufacturing sector, the modest rise in full-week absenteeism in this sector (from 2.3 to 2.6 per cent) was close to the all-industry average and was exceeded by much larger increases in welfare and religious services, business and repair services, non-rail transportation, wholesale trade, and nondurable manufacturing. On the other hand, there was above-average increase among lower-skilled, blue-collar workers, who had relatively high absence rates in both 1967 and 1972, although even here the above-average increases (operatives from 2.7 to 3.1 per cent and laborers from 2.3 to 2.7 per cent) seem quite modest. And when attention is shifted to unscheduled part-week absences, the greatest increases are observed in skilled or white-collar occupations.[2]

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[1] Janice Neipert Hedges, "Absence from Work -- A Look at Some National Data," Monthly Labor Review, July 1973.

[2] For example, the rate among craftsmen rises from 3.1 to 3.6 and the rate for clerical from 4.2 to 4.8. Although at least half of the increase is due to absence which is allegedly due to illness, the distinction between these absences and other reasons is often arbitrary and influenced by the extent of sick leave and sickness benefits available to an individual.

If dissatisfaction were a motivating factor in absence behavior, one might postulate an increase in absence rates as labor markets tightened and workers sought preferable positions without severing ties with their current employer. In contrast to the marked cyclical pattern in quit rates, however, the BLS data show no evidence of a cyclical relationship. For example, the rate of part-week absence remained virtually unchanged throughout the period of rising unemployment rates in 1970.[1]

Because the absence data cover only six years, they are too limited to replicate the time series statistical tests applied earlier to the quit rate data. Thus we have adopted an alternative approach to consider further the potential scope for worker discontent on absence rates. Our approach begins with the observation that the interindustry variation in the rate of full-week absence among wage and salary workers is greater than the variation over time, as reported above. (In 1972, for example, the rate ranged from 1.8 per cent in printing and publishing to 4.1 per cent in tobacco and 3.8 per cent in automobiles.[2]) Recognizing that the determinants of unscheduled absence may also vary considerably more across industries at a point in time than over the limited 1967-1972 period for which time series data are available, we conducted an interindustry analysis of the determinants of unscheduled absence. Presumably, as those factors which are identified as significant influences in the interindustry analysis change over time <u>within</u> an industry, the absence rate will change accordingly.

In our analysis we applied a regression model of absence behavior to data for 2-digit manufacturing industries. Personnel specialists have long

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[1] See Hedges, <u>op. cit.</u>, p. 26.

[2] Hedges, <u>op. cit.</u>, p. 27.

argued that the demographic composition of the work force is an important determinant of employment stability and reliability. In particular, higher rates of absence are alleged to be associated with young workers, women, and nonwhites. Given the demographic composition of the work force, however, characteristics of the job or industry may exert a significant influence on absence. We indicated above that the hours schedule is potentially an even more important influence on absence from work than on quits and predicted that the absence rate would be positively related to relative weekly hours schedule. Although other sources of job dissatisfaction are less easily quantified for this type of analysis, the wage rate in an industry may compensate for these conditions and possibly serve as a proxy. If the wage in each industry just exactly offsets the perceived disadvantages of the job, there would be no relationship between absence rates and relative wage rates (or relative job disadvantages). However, if high wage industries tend to overcompensate for nonpecuniary disadvantages, as suggested in Prediction 2a of Chapter 1, a negative relation between absence rates and relative wages could emerge, although it need not do so, as we shall note below, if one or more relationships between relative wages and other manifestations of discontent are negative and sufficiently pronounced.

A regression of the 1972 rate of full-week absence among wage and salary workers in the sample industries on these variables yielded the following results:[1]

$$\underset{\quad}{\text{ABSENCE}} = \underset{(-2.03)}{-11.57} + \underset{(1.28)}{1.38}\,\text{RELWAGE} + \underset{(2.53)}{11.43}\,\text{RELHOUR} - \underset{(-.65)}{.039}\,\text{YOUNG} + \underset{(3.15)}{.041}\,\text{FEMALE} + \underset{(2.37)}{.095}\,\text{NONWHITE} \qquad R^2 = .62$$

[1] In the regression, RELWAGE is the relative hourly earnings, RELHOUR is the relative weekly hours, and FEMALE is women as a per cent of all production workers in the industry in 1972. The source of these variables is Employment

The results indicate that the absence rate tends to be higher in industries in which the weekly hours of work, per cent female and per cent nonwhite are relatively high. (Interestingly, the per cent under 24, an important determinant of quit behavior, is not significantly related to absence rates. The study by Hedges reported a similar finding but noted that the rate of part-week absence is relatively high among young workers.[1] The coefficient on RELHOURS implies that an industry with an hours schedule which is nine per cent higher than the average for manufacturing would have an absence rate which was one percentage point higher than the manufacturing average, ceteris paribus.[2] The coefficients also imply that a one per cent increase in the proportion of the work force that is nonwhite will have twice the impact on the absence rate of the same increase in the proportion female, but in both cases the impact is small. (For example, the proportion nonwhite would have to increase by over ten per cent to raise the absence rate by one percentage

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and Earnings. YOUNG and NONWHITE are the per cent of workers who are 14-24 years of age and nonwhite, respectively, in each industry in 1970. The source of these variables is the 1970 Census of the Population. t statistics are in parentheses.

[1]These findings contrast somewhat with those of previous microstudies of absenteeism. Gibson, for example, found a negative relationship between age and absenteeism. R. Oliver Gibson, "Toward a Conceptualization of Absence Behavior of Personnel in Organizations," Administrative Science Quarterly, June 1966, pp. 107-133. On the other hand, Heneman and Murphy found that once race and sex were held constant, age was not significantly related to absences. Women had a higher absenteeism rate than men but there was no difference between races. Herbert G. Heneman, III and Charles J. Murphy, "Corelates of Absenteeism Among Race-Sex Subgroups," Proceedings of the Thirty-Third Annual Convention of the Academy of Management, in press.

[2]As was the case with quit behavior, the results for the RELHOURS variable are stronger on statistical grounds than results for the alternative relative weekly overtime hours variable. Thus, regular hours schedules appear to have a more powerful influence on absence behavior than overtime requirements which may be transitory, and accompanied by a premium rate which offsets the disutility of longer hours.

point.)

It will be noted that, according to this study, an industry's relative rate of absenteeism is not significantly related to its wage standing. Other studies have found that relative quit rates vary inversely with relative wages. Thus it seems that workers in high-wage industries tend to quit less frequently but that they are just as prone (and possibly more so) as workers in lower-paying industries to absent themselves from work. It might appear that many workers in the former group like the high wages too much to quit but that they use some of their money to buy a better nonpecuniary life for themselves by working less, thus gaining the best of both possible worlds by a process of fine tuning. This impression is reinforced by the strong positive relationship between absence rates and relative hours which, when considered in conjunction with the nonsignificant wage-absence relationship, means that industries paying higher weekly wages experience more absenteeism. These particular cross-section results are consistent with our time series predictions in Chapter 1 that rising wage levels are likely to be associated with increasing worker demand for better nonpecuniary conditions. On the other hand, cutting down on work and income in favor of more time off the job does not necessarily connote dissatisfaction with conditions on the job. Translated "longitudinally," the cross-section association between absence and the length of the work week could mean simply that, as their incomes continue to rise, wage earners press for a reduction in working time. That is hardly news.

One might also seek evidence of the impact of job dissatisfaction on absenteeism with reference to the residual behavior of the latter, after the influence of the other variables is explicitly taken into account. However,

this model "explains" 62 per cent of interindustry variation in the full-week absentee rate; and, since that is a very high coefficient of determination for a cross-section regression, it would not appear to leave very much statistical room for other causal factors.

In concluding this section, we note that the cross-section evidence increases our skepticism that the data on unscheduled absence indicate changes in job dissatisfactions. Not only is the increase in absence rates slight and relatively large in sectors which are not characterized by monotonous, assembly line production conditions, but the small increase that is observed appears attributable to changes in the demographic composition of the work force -- particularly the increasing proportion of women. The extent to which this implies an increase of worker dissatisfaction is discussed in Chapter 3. However, we note here that nothing in the evidence reviewed above suggests that it is necessary to postulate a surge of worker discontent across all demographic groups in order to explain recent absence behavior.

Strike Activity

Foremost among potential on-the-job manifestations of worker discontent is strike activity, which, unlike the alternatives of absenteeism and slow-downs, provides a mechanism, collective bargaining, through which offending conditions of work may be ameliorated directly.

As in the case of quit and absence rates, we find an increase in strike activity during the late 1960's, coinciding with increased concern over job dissatisfactions. Through a review of econometric analyses of strike activity and an examination of the causes of strikes and the nature of recent wildcat strike activity, we shall attempt to determine whether the increase in strike

activity is a consequence of increased job dissatisfaction.

The relationship between job dissatisfaction and unstable industrial relations activity has also received considerable emphasis because of (1) the apparent importance of working conditions in a few, recent, well-publicized wildcat strikes (e.g., the Lordstown Vega plant in 1971) and (2) the fact that the upsurge of concern with worker dissatisfaction in the late sixties and early seventies coincided with the reversal of a slow secular decline in the general level of strike activity in the United States. Econometric analyses of new strike activity have discerned a slow secular decline in strike activity from the early fifties until the mid-sixties after controlling for important economic influences,[1] and for 1960-65 the number of new work stoppages remained under 4,000 per year. The decline has been attributed to the lagged impact of alternative procedures -- for example, the substitution of National Labor Relations Board elections for recognition strikes and third-party arbitration for strikes over contract interpretation -- as well as increased information and sophistication among union and management negotiators, and a possible decline in the number of negotiations per year following tendencies toward more centralized bargaining units and longer-term contracts.

For 1969 and 1970, however, there were at least 5,700 new stoppages each year, and although the subsequent two years showed a decline to 5,100 new strikes, this level was exceeded only in 1946 and 1952 in the postwar period. Since the increased strike incidence was accompanied by both a modest rise in strike duration and, in 1970, the largest number of workers involved in strikes since 1952, the per cent of working time lost due to work stoppages

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[1]For example, O. Ashenfelter and G. Johnson, "Bargaining Theory, Trade Unions, and Industrial Strike Activity," American Economic Review, March 1969.

also rose substantially in the late sixties.[1]

Can this phenomenon be explained in terms of "conventional" factors -- as changes in quit rates were? To begin with, several studies have documented an inverse relationship between the incidence of strikes and the unemployment rate, suggesting that the strategic interests of unions tend to dominate strike activity, since strikes are highest during periods when potential strike costs to an employer, in terms of lost market shares, are highest. Thus, the general tightening of labor markets through 1969 and into early 1970, reflected in the lowest unemployment rates experienced since the Korean War, undoubtedly accounts for some of the increase in work stoppages. Nor is it coincidental that the subsequent increase in unemployment since 1970 was associated with a fall in new work stoppages.

A second important influence on postwar strike activity has been the rate of growth of real wages. Increases in money wages tend to reduce new work stoppages while cost-of-living increases have the opposite effect. This suggests that the rapid inflation of the late sixties and early seventies may have been a stimulant to strike activity, which was no doubt reinforced by the rapid growth of nonunion wages during this period relative to the wages of unionized workers who had to await the expiration of long-term agreements before seeking compensation for purchasing power losses. Indeed, the general growth in real spendable weekly earnings in the private economy during 1960-1965 was halted in the late sixties, and by 1970 the weekly average was lower than in 1965.

The influence of real wage changes on the recent growth of work stop-

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[1]To maintain an appropriate sense of proportion, it should be noted that, at the 1970 peak, less than one-half of one per cent of estimated total working time was lost to strike activity. See Manpower Report of the President, March 1973, p. 244.

pages is clarified in a recent paper by Professor Myron Roomkin, which has come to our attention.[1] Roomkin finds that for 1965-1970 the real wage changes were positively related to strikes and interprets this as evidence that workers' wage expectations were running ahead of actual real wage changes. It is possible to read a worker discontent interpretation into this result. If concern with working conditions was growing during this period, workers could strike to obtain larger money wage increases as compensation for increasing job dissatisfaction. However, there is an alternative hypothesis that does not depend on job discontent: If the degree of "money illusion" -- the tendency of workers to view money wage increases as real increases in purchasing power -- declines with rising inflation, workers' forecasts of future inflation become more accurate, and the relation between real wages and strikes would change as Roomkin's results indicate.

Nevertheless, some sectors also display secular increases in work stoppages which are not associated with these economic influences. Presumably, if large-scale, impersonal, assembly-line production breeds discontent and strikes, then we would expect such residual secular strike increases to be greatest in the industries characterized by these conditions. In fact, the reverse occurs: in the private sector residual strike increases were found to be largest in construction, an industry with relatively small firms and relatively large individual control over work, while residual increases were generally small among durable goods manufacturing industries.

Public sector strikes have also increased considerably over the past eight years but this reflects private-public sector differences in public

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[1] Myron Roomkin, "Some Findings on the Performance of the Ashenfelter-Johnson Strike Model," University of Chicago Labor Workshop, January 1973 (mimeographed).

policy toward collective bargaining and a general lack of negotiating expertise in the public sector that seems to typify new union-management relationships. Another influence in the public sector case is an increasing number of bargaining units and negotiating situations. Note too that, in seeking symptoms of worker discontent, we are interested in changes in the number of strikes per negotiation, but data are only available for total strikes. Thus, any positive strike trend could reflect in part a tendency for unions to shift to shorter-term contracts. The limited data that are available indicate that there was a tendency toward longer contracts for 1964-1969 and a reversion to shorter contracts thereafter.[1]

As an alternative approach to the nexus between job dissatisfaction and strike activity, we analyzed strike data by the cause or reason for an impasse. In Chapter 1 we suggested that the dominance of the national union and of bargaining at corporate or even industrywide levels in many sectors might mean that bargaining has been biased in favor of pecuniary increments despite a possibly increased preference by workers for improvements in nonpecuniary conditions.[2] Therefore we first sought to determine whether wildcat or illegal strikes were increasing in importance. The data on strikes during the term of a labor agreement (henceforth called wildcat strikes) as a proportion of all work stoppages are provided by industry in Table 6. Despite the anecdotal focus on the durable goods manufacturing industries as

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[1]The Federal Mediation and Conciliation Service (FMCS) publishes annual data on the length of renewed contracts in their joint meeting cases. The per cent of renewed contracts running 0-18 months declined from 23.4 in 1964 to 7.4 in 1969 and then rose to 17.8 in 1972. See FMCS, Twentyfifth Annual Report, Fiscal Year 1972 (Washington, D. C.: USGPO, 1972).

[2]To the extent that local unions are permitted to strike separately over local conditions, as is currently the case in the steel and auto industries, a bias in the nonpecuniary direction may be introduced.

the source of production methods breeding job dissatisfaction and despite the attention devoted to selective wildcats in those industries (such as the Lordstown incident), only mining and government register a proportionate increase in wildcat strike activity. As indicated above, the finding in the latter sector reflects private-public sector differences in public policy toward collective bargaining rather than a revolt over the nature of public sector work. As Table 6 also indicates, wildcats have historically been an important source of total strikes in mining (and construction).

We also analyzed data on the major issues in dispute in both wildcat and total strike activity to see if there has been a growing importance in stoppages due to issues reflecting dissatisfactions with the work environment. In Table 7 we report data for the sixties on the proportion of wildcat strikes attributed to wage adjustments, job security or plant administration, and other working conditions. For 1966-69, the proportion of wildcats over wage adjustments increased (although there is a drop in 1970). For the other two categories there are slight upward movements in the late sixties, but the data remain below some levels reached in the early sixties.

In Table 8 we present the per cent distribution of all work stoppages by the major issue at dispute. (Only issues which seem germane to our interests are included.) These data reveal an increase in the proportion of strikes due to issues of the physical plant, safety, and work assignment. However, the increase is slight, and the data also reveal declines in the proportion of strikes attributed to speed-up and work rules, issues which are also frequently cited in discussions of worker discontent.

Finally, if collective bargaining negotiations fail to focus on job dissatisfaction or other issues of primary concern to the rank and file, the

Table 6

Stoppages During Term of Agreement as a Per Cent of Total Stoppages

	Manuf.	Mining	Construct.	Trade	Transpt.	Service	Govt.	All Industries
61	25.4	74.7	51.8	9.4	31.3	7.8	7.1	32.2
62	22.8	78.0	47.5	5.5	33.3	9.1	25.0	29.8
63	25.5	83.0	62.4	10.6	35.1	13.6	3.4	35.8
64	26.7	74.2	60.4	10.4	36.2	15.2	12.2	36.0
65	23.0	81.4	65.5	10.4	30.1	13.5	4.8	34.7
66	29.1	77.8	64.4	11.0	35.4	10.7	9.2	36.5
67	28.1	78.5	58.6	10.6	32.5	8.4	4.4	33.9
68	25.3	86.0	52.4	7.7	29.4	9.1	12.2	31.4
69	26.9	92.3	55.1	10.0	30.6	7.5	11.9	34.5
70	23.9	93.4	47.8	7.6	32.5	8.6	17.5	33.4

Source (for Tables 6-8): U. S. Bureau of Labor Statistics, Analysis of Work Stoppages (various years).

Table 7

Per Cent Distribution of Work Stoppages During Term of Agreement, by Reason for Stoppage

	% Due to Wage Adjustments	% Due to Job Security and Plant Administ.*	% Due to Other**
60			
61	6.5	46.9	13.1
62	8.6	50.8	6.1
63	8.9	49.0	5.2
64	9.6	46.8	4.2
65	10.0	37.0	6.5
66	13.2	44.0	7.0
67	12.8	48.1	6.4
68	13.6	46.9	8.5
69	12.8	48.7	10.7
70	9.3	50.7	8.7

*Separate data not available over entire period.

**Other = other working conditions and unspecified for 67 to 70.

Table 8

Per Cent of Work Stoppages Due To

	Wages and conditions	New machinery and technology	Plant administration	Physical plant	Safety	Supervision	Shift work	Work assignment	Speed up	Work rules	Overtime	Discharge and discipline
61	7.6	.3	13.7	.4	1.1	.6	.3	1.2	1.7	1.0	.3	5.8
62	6.9	.2	14.3	.2	.6	.4	.6	1.2	1.1	.7	.3	5.5
63	5.8	.4	16.3	.6	1.1	.7	.7	1.0	1.6	1.3	.5	6.3
64	5.2	.6	16.3	.7	.9	.6	.7	1.2	1.9	1.0	.3	6.1
65	4.3	.3	14.9	.4	1.0	.5	.7	1.2	1.3	.7	.3	5.7
66	3.8	.1	15.5	.8	.8	.6	.4	1.1	1.5	.7	.2	6.3
67	4.4	.2	15.3	.9	1.0	.6	.6	1.1	1.2	.5	.4	6.2
68	4.6	.2	14.4	1.1	1.0	.6	.5	1.1	1.0	.6	.3	5.5
69	6.2	.2	15.5	1.2	1.4	.7	.4	1.4	.9	.4	.4	5.6
70	6.4	.2	16.1	1.1	1.6	.9	.6	1.3	.7	.3	.5	5.1

latter may express discontent through failure to ratify a negotiated agreement. Contract rejections are not a foolproof index of job dissatisfaction; the rejection level is sensitive, for example, to the actual ratification procedure and the way in which a proposal is presented to the union membership.[1] Nevertheless, the limited data on contract rejection rates have come to be regarded as an index of worker militancy, and it would be of interest to know whether the behavior of this index differs radically over time from the pattern of strike activity. The Federal Mediation and Conciliation Service data indicate a rise in the proportion of contracts rejected from 1964 to 1968 followed by a gradual decline through 1972.[2] The peak clearly preceded the peak strike activity and the subsequent decline has spanned the period in which concern with job dissatisfaction issues is alleged to have occurred.

To summarize, although rising job discontent offers a superficially attractive explanation for the increased strike activity of the late 1960's, our review of historically important economic influences on work stoppages, wildcat strike activity, and the main issues leading to negotiating impasses indicates only very limited substantive support for this hypothesis.

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[1] For an excellent review of these issues, see Clyde Summers, "Ratification of Agreements," in J. Dunlop and C. Summers, New Frontiers of Collective Bargaining (New York: Harper, 1967).

[2] FMCS, Twentyfifth Annual Report, Fiscal Year 1972 (Washington, D. C.: USGPO, 1972).

Accidents

Accident rates are presumably closely related to job satisfaction. Not only do accidents and unsafe work conditions lead workers to be less satisfied with their jobs, but the reverse may occur: dissatisfaction itself may contribute to inattention, poor work practices, frustration -- and these factors to accidents.

The relationship between accidents and satisfaction assumes special interest in view of the recent significant increases in accident frequency rates.[1] After dropping from 24.2 in 1926 (the first year for which comprehensive statistics are available) to an all-time low of 11.4 in 1958, the accident frequency rate began to climb again, as is illustrated by Table 9. (Note that

Table 9

Work-Injury Rates in Manufacturing

	Frequency	Severity
1958	11.4	761
1960	12.0	753
1961	11.8	698
1962	11.9	698
1963	11.9	689
1964	12.3	707
1965	12.8	713
1966	13.6	699
1967	14.0	709
1968	14.0	690
1969	14.8	730
1970	15.2	759

Source: BLS.

[1] Accidents have traditionally been measured in terms of frequency rates (the number of lost-time accidents per million hours of exposure) and severity rates (the number of hours lost per million employee hours). Substantial recent dissatisfaction with our accident reporting system has lead to its being totally overhauled. Beginning in 1971 much more comprehensive statistics have been collected and the definition of accident has been changed to include (a) accidents which require first-aid but do not involve lost-time and (b) occupational illnesses.

while accident frequency went up, severity remained roughly constant, suggesting that average duration of accidents declined).

To what extent can this increase in accident frequency be explained by traditional economic factors -- and is there a residual upward trend through time which cannot be explained by means of these traditional factors (and which therefore might be due to increased dissatisfaction)?

We address this question through the analysis of accident rate measures for two-digit manufacturing industries.[1] Our dependent variables are the frequency of severity statistics. Our independent variables are the ones listed below:

New hire rates. Our assumption here is that new hire rates constitute a proxy for experience, and we postulate that inexperienced workers will have higher accident rates than those with greater experience. Thus we hypothesize that there will be a positive relationship between new hire rates and accidents.

Average hourly earnings. According to orthodox economic theory, workers in relatively dangerous industries should receive higher wages just to compensate them for the hazards they undergo. On the other hand, some observers have commented that working conditions, including job hazards, tend to receive less weight than job skills -- in both the market place and job evaluation systems.[2] If, therefore, skills and hazards are inversely correlated, dangerous jobs should be paid less. As we shall see below, the data lend little if any support to this view.

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[1] Government accident statistics have been collected for nonmanufacturing industries, but not on a strictly comparable basis.

[2] E. Robert Livernash, "Wage Administration and Production Standards," in Arthur Kornhauser, Robert Dubin, and Arthur M. Ross, eds., Industrial Conflict (New York: McGraw-Hill, 1954), p. 336.

Hours of work. This factor presumably measures both relative exposure and fatigue, our hypothesis being that accidents would increase as hours of work went up. Two alternative measures were tested: (1) weekly hours of work in the industry, and (2) weekly overtime hours.

Vintage of equipment. The age of equipment used in plants should have some effect on safety. Presumably newer equipment is safer than old; on the other hand, accidents may increase in the first few months while workers learn how to use new equipment. Our analysis might test which of the new effects is more powerful. Two alternative rough measures of equipment age were used: (1) gross investment in machinery and equipment, and (2) gross investment per manhour in machinery and equipment.

Our findings (see Table 10) are largely negative. Only a few of the postulated relationships were statistically significant at the 5 per cent level. Statistically significant regression relations were found for severity in seven of our twenty industries and for frequency in twelve of these. In our twenty industries significant relations were found only as follows:

(1) In six industries there were positive relationships between accidents and new hires -- suggesting, as hypothesized, that the newer workers may be more accident prone.

(2) In seven industries accidents were positively related to average hourly earnings. This may be interpreted as meaning that as an industry becomes relatively more dangerous, its wages must promptly rise relative to the overall average.

(3) In only one industry was there a relationship, this time in the direction hypothesized, between injuries and hours of work. No relationships were found with overtime (and these data are not reported).

(4) In only two industries were accidents related to investment in equipment. These relationships were positive, providing some (weak) support for the view that new equipment is more dangerous during the learning period.

(5) Finally, in five industries there was a negative relationship between accidents and time and in none was there a positive relationship (and most of the nonsignificant relationships, both for severity and frequency, were negative). This most important finding from the regression analysis indicates that once the factors mentioned above are held constant, the apparent uptrend in accidents is either eliminated or, as in the case of the five industries, transformed into a negative trend.

Table 10

Accident Rate Regressions
(t statistics in parentheses)

	Constant	New Hire Rate	AHE	Week. Hours	M&E Inv m.h.	Time	R^2	d
Lumber								
Sev.	n.s.							
Frq.	88.47 (1.47)	2.28 (2.41)	-1.98 (.35)	-1.34 (.96)	-1053.4 (.81)	-.08 (.14)	.63	2.50
Furniture								
Sev.	2983.6 (.91)	122.6 (2.89)	409.6 (.95)	-77.9 (-1.15)	65862 (.60)	-57.36 (-1.69)	.75	2.62
Frq.	n.s.							
Stone, Clay, Glass								
Sev.	n.s.							
Frq.	-1.94 (.07)	1.29 (2.69)	11.36 (4.40)	-.16 (.25)	276.4 (.83)	-.98 (3.29)	.96	2.27
Primary Metals								
Sev.	n.s.							
Frq.	37.56 (1.07)	1.92 (2.25)	.72 (.14)	-.82 (1.42)	46.96 (.18)	.42 (.69)	.98	2.22
Fabricated Metals								
Sev.	5688 (1.59)	55.52 (1.06)	211.29 (.54)	-138.8 (1.94)	165294 (2.16)	-42.61 (.96)	.77	3.10
Frq.	9.62 (.35)	1.27 (3.16)	7.46 (2.53)	-.38 (.68)	438.92 (.75)	-.30 (.70)	.99	2.67
Non-Electrical Machinery								
Sev.	1014.8 (.32)	38.0 (.46)	135.9 (.44)	-15.04 (.24)	-76736 (2.44)	-2.09 (.05)	.62	2.31
Frq.	-5.31 (1.46)	.43 (.82)	5.53 (3.43)		533.6 (2.37)	-.46 (2.31)	.99	2.01
Electrical Equipment	n.s.							

Table 10 (continued)

	Constant	New Hire Rate	AHE	Week. Hours	M&E Inv. m.h.	Time	R^2	d
Transportation Equipment								
Sev.	423.9 (.31)	90.65 (2.16)	642.3 (2.51)	-38.96 (1.68)	7867.9 (.20)	-90.4 (2.40)	.81	2.17
Frq.	-2.82 (.39)	.21 (.96)	4.41 (3.29)	-.07 (.61)	439.7 (2.15)	-.49 (2.46)	.96	2.65
Instruments								
Sev.	n.s.							
Frq.	24.24 (1.28)	.75 (1.84)	1.34 (.75)	-.61 (1.49)	828.8 (1.88)	-.12 (.66)	.95	2.54
Misc. Manufacturing								
Sev.	n.s.							
Frq.	37.27 (1.24)	.77 (2.27)	4.80 (1.87)	-.87 (1.23)	-1061.4 (1.29)	-.11 (.71)	.97	2.33
Food	n.s.							
Textiles								
Sev.	n.s.							
Frq.	-9.17 (1.14)	.49 (1.97)	5.56 (3.64)	.24 (1.45)	297.1 (1.44)	-.50 (4.31)	.96	2.48
Apparel								
Sev.	n.s.							
Frq.	13.13 (1.33)	.98 (2.92)	1.72 (1.30)	-.35 (1.29)	630.7 (.58)	-.10 (1.41)	.92	1.97
Paper								
Sev.	-3182 (2.94)	-228 (2.61)	1394 (3.93)		51350 (2.82)	-170 (3.96)	.69	2.34
Frq.	n.s.							
Printing								
Sev.	12560 (1.21)	288.6 (1.58)	-563 (1.25)	-287 (1.15)	-160719 (2.28)	64.60 (1.47)	.48	2.56
Frq.	n.s.							

Table 10 (continued)

	Constant	New Hire Rate	AHE	Week. Hours	M&E Inv. m.h.	Time	R^2	d
Chemicals								
Sev.	n.s.							
Frq.	-.43 (.03)	.24 (.82)	3.33 (3.06)	.014 (.04)	-14.42 (.46)	-.32 (2.16)	.81	3.24
Petroleum								
Sev.	n.s.							
Frq.	-23.10 (.39)	.28 (.14)	3.88 (2.87)	.47 (.33)	-66.30 (1.19)	-.09 (.32)	.95	3.03
Rubber								
Sev.	-4733 (2.03)	-82.6 (1.78)	502.2 (1.47)	100.9 (2.33)	119047 (2.10)	-51.6 (1.43)	.73	2.24
Frq.	n.s.							
Leather								
Sev.	n.s.							
Frq.	-29.89 (1.76)	-.14 (.29)	4.54 (2.06)	.93 (2.24)	-62.55 (.03)	.22 (.14)	.97	2.12
Tobacco	n.s.							

CHAPTER 3

Interpretation of Attitudinal Data

Our purpose in this chapter is to explore the possible impact on work satisfaction of changes in age, education, sex, color, and occupational composition on the work force. This discussion, in a sense, is the reverse of the one in the previous section. The previous section examined whether "soft," attitudinal variables might have an impact on "hard," economic variables. Here we seek to determine whether slight changes in hard variables (this time primarily demographic) might have an impact on the soft variable of attitudes.

The term "soft" is particularly appropriate for our dependent variable, worker satisfaction with his job. It is soft for two reasons, first because the very concept of what constitutes job satisfaction is far from clear, and secondly because (regardless of the adequacy of the concept) we are very short of meaningful data comparing job satisfaction across groups of the population, especially over time. Let us look at these two problems in turn.

Inadequacy of the concept. There is no single or even multiple measure of job satisfaction which meets universal acceptance. The most widely used of these measures correlate relatively imperfectly with each other and the most that can be said is that each variable is of value for a specific set of purposes. Still another problem is methodological. The authors have a colleague who makes it a practice, when asked politely, "How are you doing

today?" to answer, "I'd say about 7 on a ten-point scale." He means this to be humorous, because obviously no one can quantify his feelings. Yet attitude pollers make their living by doing this and many papers (and some of the discussion below) is based on a tenth (or even a twentieth) of a point difference on a five-point scale.

The nature of satisfaction is a philosophical question, of course, but by most definitions job satisfaction depends on the worker's expectations as well as what the job provides -- in other words, it depends on his frame of reference. A job which is satisfying to a high school dropout may be dissatisfying to a Ph.D.; one which is satisfying to a married woman who centers her life on her growing family may be totally repugnant to her unmarried sister who focuses on her work career. Indeed, as we shall discuss below, for the purposes of this paper it might be as important to consider what workers <u>want</u> from their jobs as to look at their <u>satisfaction</u> (which merely reflects the balance between desires and attainments).

Satisfaction has many meanings. For many workers it may mean merely resignation. According to the Gallup Poll, 80% of the work force in 1973 answered "satisfied" to the question, "On the whole, would you say you are satisfied or dissatisfied with the work you do?" But for at least some of these workers this response may have meant merely that no better alternatives were in sight.[1] The extent of "resignation" may be a function of a number

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[1]To put this in perspective, let us report a few other statistics. According to the 1969-70 study by the Michigan Survey Research Center, 85 per cent of the workers reported they were very or somewhat satisfied with their jobs, 63 per cent would "strongly recommend" to a good friend that he take a job like theirs, 64 per cent would decide "without hesitation to take the same job" if they had to decide it all over again, 63 per cent reported their job was "very much" like the job they wanted when they took it, and 49 per cent indicated that if they "were free to go into any type of job" they wanted, they

of factors. For example, as we shall suggest below, the rapid fluctuation in reported job satisfaction among blacks may reflect changes in their views toward American society more than any changes in the content of occupations they work in.

Inadequate data. Most studies of job satisfaction have been confined to single plants, companies, and sets of companies. For reasons of expense the number of studies which purport to survey the work force as a whole are limited. And (to our knowledge) of these only the Gallup Poll and the University of Michigan's Survey of Working Conditions (discussed below) have reported comparable findings covering more than one point in time.

Among the few studies sampling the work force as a whole (or substantial segments of it) are the following:[1]

1. In 1953 Morse and Weiss surveyed a national sample of 401 males, asking a variety of questions,[2] some of which were asked again in the 1969 Survey Research Center study mentioned below.[3]

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would pick the job they have now. At the least, we can conclude from this that most workers accept their fate. Survey Research Center, University of Michigan, Survey of Working Conditions: Final Report on Univariate and Bivariate Tables (Washington, D. C.: U. S. Employment Standards Administration, 1971).

[1]Among the studies not mentioned here is F. Kilpatrick, M. Cummings, Jr., and M. Jennings, Source Book of a Study of Occupational Values and the Image of Federal Service (Washington, D. C.: Brookings Institution, 1964).

[2]Nancy Morse and Robert S. Weiss, "The Function and Meaning of Work and the Job," American Sociological Review, April 1955, pp. 191-198.

[3]Survey Research Center, University of Michigan, Survey of Working Conditions..., pp. 45-46. Among the changes revealed by the two studies is that the percentage of workers who would continue to work if they were not economically required to do so fell from 80 per cent in 1960 to 73.3 per cent -- a statistically significant decline in work identification over the period.

2. In 1947 the Roper Organization polled 3,000 blue-collar workers in manufacturing asking a wide variety of questions, few of which, unfortunately, have been asked in later studies. The raw data from these studies were later reanalyzed by Blauner and reported by Census -- two-diget industry.[1] Until our present study, this was probably the only source of attitudinal data which can be compared on an industry-by-industry basis within manufacturing economic data. (The SRC Survey reports its findings by 1-diget classification, lumping all of manufacturing into one industry.)

3. Ever since 1949 the Gallup Poll has been periodically asking its nationwide sample (numbering roughly 1500 respondents), "On the whole, would you say you were satisfied or dissatisfied with the work you do?" A recent summary report compares the findings for seven periods, 1949, 1963, 1965, 1966, 1969, 1971, and 1973.[2] Useful as these data may be, they suffer from several limitations (in addition to those common to all single item measures of job satisfaction). "Gallup's 'work satisfaction' question was, however, asked of all people interviewed (housewives, students, retired people, the unemployed, and so on), not only of those who worked for pay."[3] The Gallup findings have been widely cited as demonstrating that worker satisfaction has declined sharply in recent years. And yet, "when the Gallup data are reanalyzed, the closer the reanalysis comes to refining the Gallup sample to include only those who work for pay, the smaller the 'decline' in job satis-

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[1] Robert Blauner, Alienation and Freedom (Chicago: University of Chicago Press, 1964).

[2] Gallup Opinion Index, Report No. 94, April 1973.

[3] Robert Quinn, Thomas Mangione, and Martha Mandilovitch, "Evaluating Working Conditions in America," Monthly Labor Review, November 1973, p. 39.

faction over the last several years.[1] Thus what the unemployed job-seeker may be primarily dissatisfied with is not his work but the lack of opportunity to do it.

Another problem relates to preliminary reports which are periodically released to the press, but which have been excluded from or averaged into the figures published in the summary report.[2] Indeed, the Index warns that the non-white data for 1973 are subject to wide sampling errors, and this caveat may be applicable to other Gallup findings. If nothing else, these shortcomings suggest that the Gallup data should not be subjected to elaborate statistical analyses which assume that small differences are significant.

4. In November 1969-January 1970 the Survey Research Center of the University of Michigan conducted a survey in which usable interviews were conducted with 1533 workers.[3] This survey, sponsored by the U. S. Department of Labor, represents probably the most comprehensive and reliable source of information on job satisfaction available. The survey was replicated in early 1973, with preliminary reports suggesting no significant shifts in

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[1] Ibid.

[2] For example, the August 20-23, 1971 survey (released September 26, 1971) reports "black" satisfaction with work at 63%, while a second survey, taken less than five years later indicates a "non-white" satisfaction rate of 73%. Even if we allow for the difference between "black" and "non-white," the ten-point climb in this short time seems quite high. The Index (Gallup Poll Index) compromises by citing a 68% figure for "non-whites" in 1971.

[3] This was not the first nation-wide survey of this sort. Indeed, since 1958 there have been seven such surveys which have "(a) used roughly equivalent measures of overall job satisfaction and (b) obtained data from national probability samples of workers." These surveys which were conducted by either the National Opinion Research Center or the Survey Research Centers of the Universities of California or Michigan indicate together that "job satisfaction has increased between 1962 and 1964 but has remained unchanged up to the present." Quinn, Mangione, and Madilovitch, op. cit., p. 39.

overall satisfaction, although there were a number of counterbalancing changes in specific elements contributing to job satisfaction.

The 1969 survey (henceforth SRC) findings as to overall job satisfaction have been reported in three forms, called respectively, "Content Free," Job Sat '70, and Quality of Working Conditions. The Content Free measure comes closest to the single-item question asked by the Gallup Poll (although it in fact represents the responses to eight different questions relating to overall reaction to one's job). The other two measures are based on combinations of response to questions relating to specific aspects of the job. To date comparative 1969 and 1973 findings have been published only with regard to Quality of Working Conditions.

Separate indices have been developed covering five significant facets of job satisfaction (as determined by factor analysis). These are: Comfort (physical conditions at work, job speed, transportation to the work, and the like), Challenge (variety, opportunity to learn, skill required, etc.), Pay (including job security), Resources (having adequate machinery, supplies, assistance from one's boss), and Co-worker Relations. All these indices are reported on a 1-5 scale, with 5.0 indicating very high satisfaction and 1.0 very low satisfaction.

In sharp contrast with the Gallup findings, the SRC survey (Table 11) indicates a slight and nonsignificant drop in overall satisfaction from 1969 to 1973 and significant drops in only two of the five satisfaction facets, Comfort and Coworker Relationships. Indeed satisfaction with Financial Rewards increased slightly, but not significantly. (And note that with large samples even small differences may be statistically significant.)

Table 11

Job Satisfaction Measures 1969 and 1973

	1969	1973
Comfort	3.14	3.03*
Challenge	3.26	3.22
Financial Rewards	3.06	3.10
Coworker Relations	3.41	3.34*
Resources	3.45	3.44

*Difference between years significant at .01 level or better.

Source: Quinn, Mangione, and Mandilovitch, op. cit., p. 39.

5. The National Longitudinal Surveys (NLS), which were conducted by the U. S. Bureau of the Census for a five-year period, represent approximately 4,000 respondents gathered through a national probability sample. Although an attempt was made to contact each respondent once a year during the five-year period, the job satisfaction question was asked only in the first year, except for those people changing jobs. The results of the interviews are reported here.

As mentioned earlier, our analysis is confined to two groups of male respondents, aged 14-25 (in 1969) and 45-59 (in 1966), respectively. Although the NLS survey is based on a larger sample than SRC's, the data are in some ways less useful for our purposes. Nevertheless, the NLS represents a new as yet untapped source of information and are presented here as a net addition to our limited store of knowledge in this area.[1]

Although there is little evidence of a substantial recent shift in overall job satisfaction levels, what has been happening to specific demo-

[1]Only the results of a few of our runs are presented here; other runs proved inconclusive or uninteresting.

graphic subgroups? In particular, how do psychological, attitudinal measures relate to the various economic and behavioral measures discussed in Chapter 2?

Age

Among the conclusions of the econometric studies reviewed in Chapter 2 was that the substantial growth in the number of young, inexperienced workers in the labor force imparted a downward pressure on productivity during the late 1960's. Our own studies also suggest that younger workers tend to have relatively high quit rates and slightly (but not significantly) higher absentee rates. What do the attitude studies show?

Certainly a number of authors have attributed a large part of the alleged recent increase in work alienation to younger workers, who today not only constitute a larger proportion of the work force than they did ten years ago, but also are presumably (according to these writers) far less satisfied with their work than their predecessors. This dissatisfaction is supposedly caused by an increased desire for challenge from work.

Are younger workers more dissatisfied (and about what)? Is this dissatisfaction increasing (and likely to continue to increase)? And will the proportion of the labor force represented by younger workers continue to increase? These are among the questions to be considered below.

Younger workers more dissatisfied. As long as there have been studies, younger workers have registered less satisfaction with their work than have older workers. This is shown by the Gallup Poll, the SRC (see Tables 15 and 16, below) and by microstudies of individual situations.[1] It is also shown

[1]Micro-studies indicate that job satisfaction climbs with age, at least until about age 50. There are some differences among studies as to whether satisfaction falls off prior to retirement, the results depending in part on

by our NLS data findings (Table 12) which cover only two age groups of white males, but have the advantage of holding sex, color, and occupation constant.

Table 12

Per Cent of Male Workers Liking Job "Very Well" by Age, Race, and Occupation

	White		Black	
	14-24	45-59	14-24	45-59
Professionals & technical	63(n=131)	69(n=313)	59(n=22)	87(n=30)
Managers & proprietors	65(n=113)	68(n=508)	*	
Clerical	50(n=78)	57(n=158)	42(n=43)	55(n=51)
Sales	68(n=63)	67(n=150)		
Craftsmen	55(n=245)	50(n=783)	57(n=51)	46(n=150)
Operators	40(n=332)	42(n=546)	28(n=172)	46(n=327)
Laborers	29(n=86)	39(n=145)	28(n=91)	47(n=271)
Service	62(n=45)	45(n=163)	36(n=33)	38(n=171)

*Cell size too small to be meaningful.

Source: NLS. Figures in parentheses represent total number of respondents in a given cell, i.e., 63 per cent of the 131 younger white professionals liked their jobs very well.

Note that, with the significant exception of craftsmen and white service workers (and the insignificant exception of white salesmen), a higher percentage of older workers in each job category liked their job "very well" than did

the occupation studied. C. L. Hulin and P. C. Smith, "A Linear Model of Job Satisfaction," Journal of Applied Psychology, Vol. 49 (1965), pp. 209-216; J. L. Gibson and S. M. Kline, "Employee Attitudes as a Function of Age and Length of Service: A Reconceptualization," Academy of Management Journal, Vol. 13 (1970), pp. 411-425; Cyrus Altimus and Richard Tersine, "Chronological Age and Job Satisfaction: The Young Blue Collar Worker," Academy of Management Journal, Vol. 16, No. 1 (March 1973), pp. 53-66.

younger workers.[1] (Note too that the generation gap is considerably greater for blacks than for whites -- a phenomenon to which we shall return.)

Thus younger workers are relatively discontented. But about what? The following two tables, based on SRC data are of considerable interest.[2] Table 13 indicates that age makes relatively little difference in terms of what workers feel important in their job -- with two exceptions, older workers desire greater comfort, younger workers are more concerned with co-workers.[3]

Table 13

Percentages of Workers Scoring High on Each of Five Importance Indices, by Age

Age	Comfort*	Challenge	Financial	Co-workers*	Resources
16-29	31.9	34.3	38.2	39.0	32.6
30-44	35.0	37.3	37.2	33.3	37.8
45-54	40.1	38.7	39.6	38.4	37.8
55 or more	43.7	38.5	38.6	35.3	34.8

*Relationship with age significant at .05 level or better.

Source: See footnote 3, below, p. 244.

Table 14 suggests that younger workers' relatively greater dissatisfaction is largely due to dissatisfaction with Challenge and Comfort (and a less extent to Resources). Except for the group under 21, Financial satisfaction is roughly the same for all age groups. Thus, to the extent that attitude surveys are meaningful, we can conclude that younger workers are dissatisfied,

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[1] Roughly the same findings are obtained when the categories of liking job "very well" and "fairly well" are lumped together, except that, since 80 per cent of all responding workers in all age, race, and occupational categories like their job at least fairly well, the statistics are not terribly meaningful.

[2] Given the substantial literature devoted to youth dissatisfaction, it may be somewhat misleading to present the SRC data alone; however, the SRC study may be the most complete one available.

[3] Robert P. Quinn, "What Workers Want: General Descriptive Statistics and Demographic Correlates," in Robert P. Quinn and Thomas W. Mangione, eds., The 1969-70 Survey of Working Conditions: Final Report to the Employment Standards Administration (Ann Arbor: Survey Research Center, University of Michigan, 1973), pp. 203-262.

not because they want greater Challenge and Comfort than their elders, but because (as newcomers in the world of work) they receive less. (Once more the reader should be reminded that the SRC satisfaction data are presented on a one-to-five scale, with higher scores representing higher satisfaction.)

Table 14

Satisfaction with Specific Job Facets by Age

Age	Comfort*	Challenge*	Financial	Co-workers	Resources*
Under 21	3.05	2.88	2.82	3.47	3.38
21-29	3.04	3.09	2.98	3.36	3.37
30-44	3.11	3.31	3.07	3.43	3.40
45-54	3.08	3.35	3.07	3.43	3.47
55-64	3.28	3.36	3.05	3.36	3.52
Over 65	3.43	3.55	3.01	3.52	3.64

*Relationship with age significant at the .05 level or better.

Source: Survey Research Center, op. cit., p. 70.

A growing dissatisfaction? Younger workers are more dissatisfied than older workers, but is the extent of this dissatisfaction increasing? Yes, says the Gallup Poll. Table 15 shows satisfaction dropping especially rapidly among younger workers during the late sixties. Note that, from their

Table 15

Per Cent Satisfied by Age

Year	Under 30 years	30-49 years	50 and over
1949	66	73	58
1963	79	87	83
1965	79	86	80
1966	87	87	85
1969	86	91	83
1971	82	87	81
1973	72	83	74

Source: Gallup Opinion Index, p. 23

respective peaks, younger workers' satisfaction rate dropped 15 points by 1973, compared to 8 points for middle-aged workers and 11 points for older ones.

The SRC data present a somewhat different picture. Table 16 summarizes the three SRC satisfaction measures for 1969 and the one comparable measure for 1973. The measures as a whole illustrate the previously indicated phenomenon of increasing satisfaction with age. However, the 1969-73 comparison suggests a slight (but probably not significant) decline in satisfaction for those aged 21-29 and a very slight (almost certainly nonsignificant) increase for those 30-44, but no other appreciable measures of change.

Table 16

Measures of Satisfaction by Age, SRC Data

	Job Sat '70	"Content Free"	Quality of Working Conditions	
	1969	1969	1969	1973
Under 21	3.07	3.08	3.50	3.50
21-29	3.13	3.32	3.64	3.58
30-44	3.25	3.67	3.76	3.75
45-54	3.29	3.72	3.70	3.70
55-64	3.32	3.78	} 3.72	} 3.71
65 and over	3.45	3.68		

Source: Survey Research Center, op. cit., p. 70; Quinn, Mangione, and Mandilovitch, op. cit., p. 33.

As mentioned earlier, there are numerous explanations for a possible drop in youth satisfaction, assuming we can demonstrate that this has occurred. One of these certainly is the influence of the generally more permissive youth environment which accompanied the revolts on campus. Another possible factor, as we shall discuss, is that young workers of today are better educated than their predecessors and therefore expect more from the job.

Demography. Demographic factors may well have also played a part in any declining job satisfaction, as the number of young workers rose much more

rapidly during the period 1965-73 than did the number of jobs which young workers customarily filled. From 1927 to 1945 the number of births anually in this country remained within the 2.0 to 2.5 million range, with a slight rise to 2.7 million in 1946. But GIs made up for lost time in 1947, and birth rates shot up by 35 per cent, to 3.6 million. After this one-year spurt, births continued to increase more slowly to a peak of 4.3 million in 1960 and, of course, have declined since then.

Youth born in 1947 reached 18 in 1965. Whether they entered the campus or the workplace, the tidal wave of youths born after 1946 had an explosive impact on our institutions. Their growing numbers flooded university classrooms, contributed to abnormally high rates of youth unemployment and the urban riots, and substantially changed the age distribution of the work force in many industries. The percentage of young workers in industry had been declining for many years, but during the 1960's this process was substantially reversed. Table 17 illustrates this process in manufacturing generally (and also in motor vehicle manufacturing, the industry most mentioned when worker alienation is discussed):

Table 17

Males Under 25 as a Percentage of All Males in Manufacturing and in Motor Vehicle Manufacturing

Year	Manufacturing	Motor Vehicles
1950	15.0%	13.8%
1960	13.2	10.3
1970	17.0	13.4

While the point is still conjectural, it does seem reasonable to conclude that this wave of youth flooded the market faster than it could be absorbed. As a consequence, many high school and community college graduates

were forced to accept menial jobs which in the past had been reserved for high school dropouts. In turn, the dropouts (many of whom were black) were often left in the streets unemployed.

Probably fortunately for the stability of our society the tendency toward a younger labor force seems to have passed its peak. As the following table indicates, the proportion of the labor force which is aged 16-24 increased

Table 18

Percentage Distribution of the Labor Force by Age, Selected Years

	Age 16-19	Age 16-24
1960	7.2%	17.6%
1966	8.9	21.2
1971	9.0	23.6
1980 (projected)	8.2	23.4

Source: Statistical Abstract of the United States (1972), p. 217.

rapidly from 1960 to 1966 and more gradually since then -- but will actually decline by 1980. The 1947 baby is rapidly approaching Mario Savio's dangerous age of 30. He and his peers are getting married and acquiring children and mortgages. Although his values have doubtless been shaped by the years through which he was the center of the storm, his new responsibilities may well modify his views toward his job -- as well as his politics.

The aging process should not be exaggerated. In fact, the median age of the work force will continue to decline; according to BLS projections, it should drop from 39.8 years in 1960 and 37.2 years in 1972 to 35.2 years in 1980. However, this drop will be caused by the growth in the number of those who are in their late twenties and early thirties -- not by a growth in the very young group.

To conclude this section, there is little question that younger workers are relatively discontent. Further, it is quite likely that the increase in the proportion of younger employees in the work force may have exerted a downward pressure on average work satisfaction, thus contributing to the unfavorable changes in productivity, quit rates, and absenteeism, which we have previously discussed. More in doubt is whether youth discontent is increasing and whether it is caused by an increasing demand for challenging work. Regardless, as the impact of the postwar birthrate boom is dissipated, there is reason to anticipate that some of the causes of youth dissatisfaction may also dissipate. Indeed, as the number of young workers declines relatively, the downward bias it provides to average satisfaction will almost certainly be reduced -- and so may its impact on behavioral measures.

Education

The educational level of the work force has increased greatly in recent years, and the question is widely asked if overeducation may have contributed to a lack of fulfillment on the job. Educational level has gone up dramatically, especially among blacks. The median years of education for whites in the labor force went up from 11.4 in 1952 to 12.5 in 1972 (or by 1.1 years). During the same period it increased four times as rapidly among non-whites, from 7.6 to 12.0 years (or by 4.4 years).[1]

Education may have gone up faster than the needs of the job and this may explain why 35.9% of those responding to the 1969 SRC Survey reported that they were educationally overqualified for their jobs (as compared to 19.0%

[1]Since 1965 average education of the white labor force went up by only 0.1 years; among blacks it increased by 1.5 years.

who reported being educationally underqualified). The perceived imbalance was especially strong among those with "some college," well over half of whom reported that their work could be done by someone with just a high school diploma or less.[1] These factors are closely related to job satisfaction. Workers who report themselves educationally underqualified report considerably more job satisfaction than do those who see themselves as properly qualified and these, in turn, are substantially more satisfied than the overqualified group.[2]

Relative educational level makes a difference. How about the absolute level of education? Here again the Gallup and SRC findings differ. The Gallup Poll finds a straightforward positive relationship between education and job satisfaction. The data for 1969 and 1973 are as follows:

Extent of Education	Per Cent Satisfied 1969	1973
Grade School	81	71
High School	89	75
College	91	84

Source: Gallup Opinion Index, p. 18.

The SRC findings are somewhat more ambiguous (see Table 19). The Job Sat '70 measure indicates virtually no difference in satisfaction explained by education. The Content Free measure indicates no difference (except for

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[1]Some note should be made of the relative willingness of American workers at all educational levels to accept jobs "beneath their stations." The Economist (November 17, 1973, p. 81) blames some of Sweden's troubles on the fact that "in highly educated Sweden people do not like doing manual jobs" and the related "high unemployment of graduates." Similar problems exist in many developing countries. In this country, despite substantial increases in college trained workers, unemployment is still negatively correlated with education, an indicator, perhaps, that American workers are more realistic (or less status-conscious) than their counterparts elsewhere.

[2]The differences are especially sharp with regard to Challenge, but are apparent to a lesser (but still significant) extent in Pay, Comfort, Co-worker Relations, and even satisfaction with job.

a slight drop among those with no high school) up through some college; but having a college degree and especially going into graduate training makes a substantial difference to job satisfaction. As measured by Quality of Working Conditions, satisfaction is slightly lower for those with less than a high school diploma than for those with this diploma or some college; once more the big jump occurs after the college degree is obtained. Taken as a whole, the picture is less dramatic than that presented by the Gallup data. There is no marked decline in job satisfaction between 1969 and 1973 and the only sharp difference seems to occur between those with "some college" and those with a "college degree."

Note that workers with "some college" are by all measures no more satisfied than those with only a high school diploma. This is the same group which felt educationally overqualified for their jobs. In fact, the most dissatisfied single group of white workers were those under 30 years of age with "some college."[1] Hypothetically, the large increase in the number of youths in this category has not been matched by an equivalent increase in the number of jobs requiring their talents.

Will this imbalance continue? On balance, as an inspection of Table 20 suggests, occupations which contain highly educated workers (particularly those in the professional and technical classification) are likely to grow faster, on the average, than those which involve less education. Thus demand for educated workers may go up. As for supply, we can be less sure. The latest Department of Labor projection projects a continued rapid growth in

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[1] Neal Q. Herrick, "Who's Unhappy at Work and Why," Manpower, January 1972, p. 3. According to this study, those with "some college" earning less than $5,000 a year are less satisfied than those who never went to college.

Table 19

Job Satisfaction Measures by Extent of Education

	Job Sat '70 1969	"Content Free" 1969	Quality of Working Conditions 1969	1973
Some grade school	3.26	3.58	3.54	3.48
Completed grade school	3.23	3.55		
Some high school	3.23	3.46	3.58	3.55
Completed high school	3.24	3.57	3.69	3.68
Some college	3.24	3.55	3.68	3.65
College degree	3.27	3.75		
Graduate or professional training	3.25	3.91	3.92	3.90

Sources: Survey Research Center, op. cit., p. 72; Quinn, Mangione, and Mandilovitch, op. cit., p. 33.

Table 20

Median Years of Education in Major Occupational Groups, Ranked by Projected Employment Growth, 1972-1985

	Median Years of Education -- 1972	Projected Employment Change -- 1972-1985*
Professional and technical	16.3	3.1
Clerical	12.6	2.5
Managers and administrators	12.9	2.0
Service workers	12.0	1.6
Sales workers	12.7	1.5
Craftsmen	12.2	1.4
Operatives	11.5	1.0
Nonfarm laborers	11.0	.4
Farmers and farm laborers	10.5	-5.0

*Projected annual rate of employment change, 1972-1983.

Sources: Manpower Report of the President, 1973, p. 180; Neal Rosenthal, "Projected Changes in Occupations," Monthly Labor Review, December 1973, p. 21.

the per cent of youth who either attend or complete college.[1] Another study, noting a considerable dropoff in this per cent since its peak in 1969, suggests that college enrollments will level off or even decline.[2] On balance, especially given the decline in birthrates, the proportion of young overeducated workers may decline.

What differences does education make in terms of workers' demands from their jobs? The SRC finding (see Table 21) confirms a common belief. As education increases, the importance of Challenge goes up and that of all other factors declines. For once the relationship is quite dramatic.

Table 21

Percentages of Workers Scoring High in Each of Five Importance Indices, by Education

	Comfort	Challenge	Financial Rewards	Co-worker Relations	Resources
Less than high school	48.8	34.7	48.7	46.3	41.5
High school diploma	37.0	32.0	43.1	34.9	37.5
Some college	27.3	42.6	25.9	30.8	31.7
College degree	17.6	47.6	16.2	23.8	23.4

Source: Quinn, op. cit., p. 244.

To conclude this section: Although there are differences between the studies, it seems reasonable to conclude that job satisfaction is somewhat higher for those with college education. On the other hand, young workers with "some college" may suffer from impaired morale due to overeducation, a

[1] Denis F. Johnston, "Education of Workers: Projections to 1990," Monthly Labor Review, November 1973, pp. 22-31.

[2] Lyman A. Glenny, "The 60's in Reverse," The Research Reporter, Center for Research and Development in Higher Education, University of California, Berkeley, Volume 8, No. 3 (1973).

problem which hopefully will decline over time. In any case, better educated workers demand more in the way of challenge and apparently at least those with a college education are receiving it. Even if the per cent of young people who go through college remains only constant, we may expect that as older, less educated workers retire or die the average level of education in the labor force as a whole will increase. Despite the "some college" problem, we have modest reason to hope that the net impact of rising educational levels and changes in occupational structure will be to raise satisfaction on balance.

Sex

Chapter 2 presented evidence suggesting that women have higher quit and absentee rates than men. This may mean that women are less satisfied with their jobs (although other factors are doubtless involved). What does the data tell us about sex differences in job satisfaction?

The analyses of sexual differences in job satisfaction illustrates the weakness of the job satisfaction concept. Jobs held by women tend to be lower status, lower paid, and perhaps psychologically less meaningful than those held by men; for this reason we would expect female job satisfaction to be lower. On the other hand, it can be argued that women (or at least nonliberated women) are especially likely to center their life's interest on the home rather than the job and to have an instrumental rather than expressive orientation toward their work (that is, to view it as a means to an end, rather than an end in itself).[1] To the extent this latter point is valid, women may be more easily satisfied with work than men.

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[1]Blauner's classic study of the textile industry explains the surprisingly high job satisfaction of female textile workers largely in terms of the instrumental orientation.

Be that as it may, the evidence is limited but suggests that male satisfaction is only slightly higher than female, and the difference is less than that related to other variables such as race.[1] Of our two main sources of data (see Table 22), men scored slightly higher than women in six of the seven years covered by the Gallup Opinion Index, with 1966 being a tie (but differences in some years may have been statistically insignificant). In 1969, SRC's three overall ratings yielded small but significant differences; by 1973, however, the difference was no longer significant and for primary wage earners it had disappeared altogether. The main 1969 differences were on Challenge and Pay. And for the 1969 SRC sample as a whole, sex differences

Table 22

Measures of Satisfaction By Sex

	Men	Women
Gallup Poll		
1969	88%	87%
1973	78%	76&
Quality of Working Conditions		
All employees		
1969	3.73	3.60*
1973	3.68	3.64
Primary or sole wage earners		
1969	3.74	3.55*
1973	3.70	3.70
Job Sat '70 -- 1969	3.27	3.19*
"Content Free" -- 1969	3.63	3.50*
Comfort -- 1969	3.12	3.17*
Challenge -- 1969	3.34	3.12*
Pay -- 1969	3.09	2.92*
Co-worker Relations -- 1969	3.43	3.38
Resources -- 1969	3.43	3.44

*Difference between sexes significant at .05 level or better. The 1969 SRC sample included 983 men and 527 women.

Source: Gallup Opinion Index, op. cit., Survey Research Center, op. cit., p. 65; Quinn, Mangione, and Mandilovitch, op. cit., p. 33.

[1]According to the SRC Job Sat '70 and "Content Free" measures, sex was less closely related to job satisfaction than the following other demographic

were eliminated once "the intellectual demand level of the job was taken into account."[1]

What of the future? Four partially contradictory predictions are possible:

1. To the extent that there continues to be an increase in the number of women in the work force and their job satisfaction remains slightly lower than that of men, mathematical law requires that the greater percentage of women will pull down weighted average job satisfaction of the two sexes, but only slightly.

2. To the extent that pressures for women's rights open up high status, higher paying and psychologically more rewarding jobs to women, we would anticipate their satisfaction would increase.

3. However, to the extent that women's expectations from their jobs rise faster than do the kinds of rewards the jobs offer, we expect that satisfaction will decline. In the past women have entered the labor force in large part because they had no other choice, because of economic necessity. Increasingly today, they are looking to their jobs to provide them an outlet for creative expression. To the extent that this occurs we expect satisfaction to fall unless the nature of the jobs is somewhat drastically changed.

4. Finally, to the extent that women's lib groups make women more aware of discrimination against them, we should expect satisfaction to decrease. There is some evidence that this is occurring. Between 1969 and 1973 the percentage of working women replying to the SRC Survey who felt dis-

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measures: race, age, "collar color" (white or blue), job tenure, occupation, industry, and occupational prestige.

[1]Joan E. Crowley, Teresa E. Levitin, and Robert P. Quinn, "Facts and Fictions About the American Working Woman," in Quinn and Mangione, op. cit., p. 457.

criminated against on their jobs because of their sex increased from eight to thirteen.[1] Possibly actual discrimination has in fact increased; given the widespread impact of EEOC and similar activities this is unlikely. A more likely hypothesis is that it is perception of discrimination which has gone up.

Regardless, the substantial recent increase in the percentage of women in the work force and the fact that women are slightly less satisfied with their work than men may have contributed slightly to the upswings in absenteeism and quit rates which we have previously noted.

Race

The data presented in Chapter 2 suggests that blacks tend to have higher quit and absentee rates than whites. Consistent with these findings, it seems reasonably well established that blacks on the average are less well satisfied with their jobs than whites.

Evidence for this is provided by both SRC and the Gallup Polls (note the rapid fluctuation in black satisfaction according to Gallup figures). Gallup indicates a very rapid deterioration in black satisfaction from 1969 to 1973 (see Table 23). According to SRC, the change was very small (see

Table 23

Per Cent Satisfied with Job, by Race and Year

	1949	1963	1965	1966	1969	1971	1973
White	59	90	87	87	88	85	80
Black	55	54	48	69	76	68	53

Source: Gallup Poll.

[1] Quinn, Mangione, and Mandilovitch, op. cit.

Table 24). Also according to SRC, the chief causes of the difference in satisfaction were Co-worker Relations and Challenge. There were no significant differences in satisfaction with Pay -- quite a surprising finding.

Table 24

Measures of Satisfaction by Race

	Whites	Blacks
Job Sat '70 -- 1969	3.26	3.10*
"Content Free" -- 1969	3.63	3.21*
Comfort -- 1969	3.16	3.04*
Challenge -- 1969	3.29	3.02*
Pay -- 1969	3.04	2.94
Co-worker Relations -- 1969	3.44	3.25*
Resources -- 1969	3.44	3.36
Quality of Working Conditions		
-- 1969	3.70	3.52*
-- 1973	3.68	3.50*
Number of respondents in 1969 sample	1337	154

*Difference between races significant at .01 level. The 1969 SRC sample included 1337 whites and 154 blacks.

Source: Survey Research Center, op. cit., p. 69; Quinn, Mangione, and Mandilovitch, op. cit., p. 33.

As with the sex difference, racial differences in job satisfaction may have a variety of causes. Compared to jobs held by whites, black jobs tend to be lower paid, lower status, dirtier, less challenging, and physically more demanding. For these reasons alone, we would expect black satisfaction to be relatively lower. In addition, the average age of black workers is lower than that of white workers, and younger workers tend to be less satisfied, as we have seen.

What per cent of the difference between black and white satisfaction can be explained by differences in age and occupation is far from clear from the data available. Table 25 (which is merely Table 12, with columns re-

arranged) is based on the NLS data and is somewhat surprising. For six out of twelve comparisons which can be made, the difference between the races is four percentage points or less. Whites enjoy relatively higher satisfaction in four cases (service workers of both ages; younger clericals and operators) as expected, but in two cases (older professionals and laborers) black satisfaction actually exceeds white -- and by rather significant proportions. Once age and occupation are held constant, the differences between the races begins to recede, especially for older workers.[1] A considerable portion of blacks' dissatisfaction with work can be explained by the jobs they hold. But how much?

Table 25

Per Cent of Male Workers Liking Job "Very Well," by Age, Race, and Occupation

	Age 14-24		Age 45-59	
	White	Black	White	Black
Professional & technical	63 (131)	59 (22)	69 (313)	87 (30)
Managers & proprietors	65 (113)	*	68 (508)	*
Clerical	50 (78)	42 (43)	57 (158)	55 (51)
Sales	68 (63)	*	67 (150)	*
Craftsmen	55 (245)	57 (51)	50 (783)	46 (150)
Operators	40 (332)	28 (172)	42 (546)	46 (327)
Laborers	29 (86)	28 (91)	39 (145)	47 (271)
Service	62 (45)	36 (33)	45 (153)	38 (171)

*Cell size too small to be meaningful.

Source: NLS. Figures in parentheses represent number of respondents in a given cell. Thus 63 per cent of the 131 young white professionals reported liking their job "very well."

[1] On the other hand, there is at least one micro study which concludes that when occupation and demographic variables are held constant, blacks are significantly less satisfied than whites. Charles A. O'Reilly III and Karlene H. Roberts, "Job Satisfaction Among White and Non-Whites: A Cross Cultural Approach," Journal of Applied Psychology, Vol. 57, No. 3 (1973). This study examined three occupational strata in two West Coast hospitals, with roughly matched (on demographic data) groups of whites and females, making use of a variety of satisfaction measures.

As with other aspects of the job satisfaction controversy, we have more explanations of why black-white differences should occur than we have actual data to support such differences. Certainly there is reason to believe that black workers should be relatively less satisfied with their jobs (even after occupational and demographic factors are held constant). Black workers bring different frames of reference to their jobs. According to micro studies, black children have relatively higher levels of vocational aspirations but lower levels of "functional striving" (expectations).[1] With aspirations higher than expectations (in other words, a built-in expectation that one's aspirations will not be met), it may well be that black workers are more likely than white to anticipate failing on their jobs -- to expect dissatisfaction. (Given past history, such a preconditioned set would be far from unrealistic.)

To add to the complexity, there is considerable evidence that for workers in general, satisfaction with job is closely related to satisfaction with life. The direction of causation is far from clear, but there is good reason to suspect that when 38 per cent of the black Gallup respondents in 1965 said they were dissatisfied with their jobs they were using this response as a means of protesting (perhaps to a white poll taker) against the position of blacks in our society generally.[2] Just as women's lib may make women more

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[1] C. Bowerman and E. Campbell, "Aspirations of Southern Youth: A Look at Racial Comparisons," Transactions, Vol. 2 (1965), p. 24; R. Stephenson, "Mobility Orientation and Stratification in 1,000 Ninth Graders," American Sociological Review, Vol. 22 (1957), pp. 204-212.

[2] According to the 1969 SRC study, blacks were significantly less satisfied with their lives than whites, although the racial differences in life satisfaction were less than those relating to job satisfaction.

conscious of sex discrimination and so less satisfied, so emerging black consciousness may have a similar effect. And the sharp fluctuations in black job satisfaction (far sharper than those for whites) may relate to alternating waves of optimism and pessimism in the black community.

A related subject: according to both SRC and NLS studies, the "generation gap" between younger and older workers is substantially greater for blacks than whites. "Blacks were twice as likely to be dissatisfied as whites with their jobs. This held through age 44. Then the percentage of dissatisfied blacks dropped to 7 as compared with 9 for whites aged 44 and over. Young blacks were the most dissatisfied segment of the labor force and older blacks among the least dissatisfied."[1] A similar but less dramatic relationship is shown by the NLS data presented in Table 12.

Herrick provides one explanation for a black generation gap. "Twice as many blacks over 44 were dissatisfied with their lives as were dissatisfied with their jobs. Older whites were about as dissatisfied with one as the other.... Perhaps older blacks feel that just being employed is reason enough to be satisfied with their work lives."[2] Older blacks are less likely to be affected by the revolution of rising expectations and more likely to be Uncle Toms.

On balance, we can conclude that black attitudes toward their jobs are a function of what happens both in the community and at work. Improvements in either area would help.

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[1] Herrick, op. cit., p. 3.

[2] Ibid.

Occupation

Occupational status is generally positively correlated with job satisfaction.[1] In part this is because higher status jobs pay more and generally require more schooling. In addition, holding such jobs indicates to the world that one is a relative success, and finally, such jobs generally provide greater opportunities for autonomy, sense of accomplishment, and other sources of job satisfaction.

Table 26 contrasts three studies -- our own NLS, a Michigan study undertaken in the late 1950's, and the latest 1973 Michigan SRC results. Note the close rank order correspondence between the NLS data for ages 45-59 and the 1973 Michigan findings. (Except for an NLS tie between managers and salespersons and a one-place disagreement over the relative ranking of clericals and craftsmen, the two studies, using substantially different methodologies, are in perfect rank-order agreement.)

An eye-ball scanning of the occupational growth projections in Table 26 suggests that the better satisfied occupations are likely to grow faster than the less satisfied ones, thus providing some hope that average satisfaction will go up over time (assuming no substantial changes in expectations).

Relationship Among the Various Factors

Our discussion has dealt with a number of factors. Some sort of preliminary summary seems to be in order.

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[1]For a general review of the literature relating job satisfaction to occupation, see Victor Vroom, Work and Motivation (New York: Wiley, 1964), pp. 129-132. The SRC study (op. cit., p. 78) shows that, while satisfaction with both job and life generally goes up as one ascends the occupational hierarchy, job-related tension also increases.

Table 26

Measures of Job Satisfaction by Major Occupational Group and Projected Employment Growth, Ranked by Satisfaction by NLS 45-59 Age Group

	Per Cent "Very Satisfied"				
	45-59	14-24	Gurin et al.[b]	Quality of Working Conditions[c] - 1973	Projected Employment Growth 1972-1985[d]
Professional and tech.	71	63	42	3.93	3.1
Managers and administrators	66	66	38	3.84	2.0
Sales workers	66	69	24	3.80	1.5
Clerical	57	46	22	3.64	2.5
Craftsmen	50	55	22	3.73	1.5
Service workers	46	51	--	3.58[e]	1.6
Operatives	43	36	27	3.40	1.0
Nonfarm laborers	37	28	13	3.36	.4
Farmers and farm laborers	--	0	22	--	-5.0

[a]National Longitudinal Surveys.

[b]Gerald Gurin, Joseph Veroff, and Shiela Feld, Americans View Their Mental Health (New York: Basic Books, 1960), p. 162.

[c]Quinn, Mangione, and Mandilovitch, op. cit., p. 33.

[d]Average percentage annual projected rate of employment change by major occupational group, 1972-85. Rosenthal, op. cit.

[e]Excludes private household workers.

In the first place, race, sex, and education are each related to satisfaction. However, the evidence suggests that these relationships are to a considerable extent dependent upon the fact that younger, black, and female workers all tend to end up in lower status, lower paying occupations. The evidence is still weak, but it does suggest the hypothesis that once occupation is held constant, sex, age, and education (except possibly for the "some college" group) bear a relatively small relationship to satisfaction. Age and occupation are the key independent variables, and even occupation is closely tied to income and status.

Table 27 summarizes the key "Etas" for a variety of job satisfaction and demographic variables analyses in the 1969 Michigan study. The Etas are in effect zero-order correlations and do not permit us to disentangle the

Table 27

Job Satisfaction Etas

	Job Sat '70	Content Free
Age	.18	.23
Occupation	.15	.21
Occupational prestige	.14	.22
Annual personal income on primary job	.16	.20
Reported "adequacy" of family income to meet expenses	.17	.24
Industry	.06	.16
Blue-collar-white collar	.09	.14
Education	.03	.12
Sex	.08	.07
Race	.11	.14

Source: SRC.

impact of closely related factors. (Thus the Eta for race includes the pure impact of race and also the impact of the fact that blacks hold lower paid jobs, are less well educated, and the like.) Nevertheless, Table 27 is consistent with our hypothesis. Relatively high Etas are registered for (1) age and (2) occupation, occupational prestige, income, and income adequacy -- the last four being probably closely correlated. Note that occupation alone has slightly lower Etas than do some of the related measures, particularly income adequacy, however, the differences are surprisingly small. Etas for education, sex, and race are also surprisingly small, considering the substantial intercorrelation between these factors and occupation.

Further (though perhaps weak) support for our hypothesis is provided by the results of a regression analysis made on our NLS sample of males aged 45-59 (see Table 28). The nature of the sample did not permit us to test the effects of sex on job satisfaction. The relationship of age to satisfaction could be assessed only within the narrow 45-59 range. And, as run, the regression did not allow for consideration of factors such as occupation and income. On the other hand, the regression analysis does allow us to study the independent effects of a number of factors on job satisfaction: age, education, months of training, and living in the South are all positively and significantly related to satisfaction; having quit one's previous job has a negative significant relationship; the other factors tested have no significant relationship.

Contrary to our hypothesis, education is positively related to satisfaction, even when the other included factors are held constant. But in this regression occupation and income have not been controlled (so their contaminating influence is very likely present). Even so, the effect of education,

Table 28

Results of the Regression of Selected Demographic Factors upon Job Satisfaction (As Measured by Percentage of Respondents Liking Job "Very Much")

Dependent variable	
Constant	-.13
Age	.0078 (.0030)*
Quit previous job	-.138 (.053)*
Laid off previous job	-.009 (.062)
Years of school	.015 (.004)*
Months of training	.0023 (.006)*
Living in South	.084 (.030)*
Living in West	-.01 (.03)
Bad Health	.01 (.03)
Married	.068 (.044)
R^2	.034

*Significant at .01 or better. Others not significant at .05.

although statistically significant, is trivial. Five extra years of education have the same effect on satisfaction as one extra year of age or of just living in the South. Finally, we should stress the relative lack of importance of the entire regression. An R^2 of .034 means that the regression as a

whole explains only 3.4 per cent of the variance. At the least, the regression results are not inconsistent with our earlier hypotheses.

Additional, though perhaps slight, support for our hypothesis comes as a series of regression equations, one for each major occupational group, which sought to determine the impact of education on satisfaction. These equations were run on our male 45-59 sample, thus permitting us to hold sex constant and to hold age within narrow bounds. Race was not controlled, but nonwhites comprise a relatively small proportion of the sample as a whole, and major occupational group was held constant by the nature of the analysis.

With all these factors controlled, what sort of residual impact did education have on satisfaction? Not much, according to Table 29. The relationship was negative in four of the occupational groups, including three manual work groups (but in each case at a nonsignificant level). It was positive in the other four (but only statistically significantly so in two

Table 29

Regression Analysis of Education Against Satisfaction, NLS Samples, Males, Age 45-59

Major Occupational Group	Regression Coefficient	Standard Error	Significance
Professional and technical	-.00522	.00952	insig.
Managers and administrators	+.01916	.00915	signif.
Clerical workers	+.00941	.01310	insig.
Sales workers	+.03494	.01522	signif.
Craftsmen and kindred	-.00037	.00587	insig.
Operatives	-.00180	.00540	insig.
Nonfarm laborers	-.00837	.00738	insig.
Service workers	+.00408	.00781	insig.

Dependent variable: Proportion of respondents replying that they were "very satisfied" with their jobs.

Independent variable: Years of education.

cases). And even in these two significant cases the results were trivial. Education seemed to be closely related to satisfaction levels among sales workers, and yet, ignoring questions of statistical error, Table 29 suggests that an extra year of education in this group will increase satisfaction by only three-and-a-half percentage points. To the extent that this analysis is meaningful, it tells us that increasing education, in and of itself, will have relatively little effect, one way or the other, on job satisfaction.

Conclusion

This chapter has sought to marshall the attitudinal evidence which corresponds to the behavioral evidence presented in Chapter 2. In addition, it has attempted to project satisfaction trends into the future. Our findings (sometimes highly tentative) can be summarized as follows:

1. According to the Michigan SRC data, there were no major changes in overall job satisfaction for the labor force as a whole or for any major demographic subcategories between 1969 and 1973 -- and less complete survey data indicates no significant change since 1964.[1] The Gallup Poll presents a different picture, but these data are subject to more error than were the other data sources.

2. The demographic variables discussed here -- age, education, sex, race, and occupation -- are statistically correlated with each other in a variety of ways, making analysis difficult. The very limited evidence suggests that age and occupation are prime determinants of satisfaction, with

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[1]The 1968 Manpower Report of the President presents a summary of the medians of various job satisfaction studies during the period 1946-47 to 1964-65. According to these data, "From a post-World War II peak of 21 per cent, the median percentage dissatisfied gradually diminished to 12 per cent in 1953 and has since remained at about 12 or 13 per cent." Op. cit., p. 48.

occupation possibly acting chiefly as a proxy for income. There is some relatively convincing evidence which suggests that when age and occupation are held constant race, sex, and education make very little difference (except perhaps for the troublesome "some college" group).

3. A likely downward pressure on job satisfaction during the late 1960's was the rapid increase in the number of young workers. While the average age of the work force will continue to decline, the relative size of the under-25 group will soon reach its peak.

4. The latest studies project a continued "enrichment" of our occupational mix over the next few decades, i.e., employment in jobs which are currently higher paid, higher status, and employ those with higher education will expand more rapidly than will those which lack these characteristics. Worker expectations will, of course, also rise, particularly as average education goes up. Our hunch (or perhaps our hope) is that on balance the net effects of these two opposing trends will also be to increase satisfaction.

Thus this chapter strengthens the conclusions of the previous one. There is little support for the view that work place dissatisfaction has increased substantially recently -- or that it will do so in the immediate future. But note this important caveat: neither the behavioral nor the attitudinal measures prove that worker attitudes have remained totally unchanged or that quality of work life has not gotten worse. At the most, they suggest that whatever changes may have occurred have not been great enough to affect the rather insensitive measuring devices presently available.

CHAPTER 4

Conclusions

In Chapter 1 of this report we hypothesize that if wages, leisure, and educational attainments continue to increase, workers would want to take out increasing proportions of further available increases in "welfare" in the form of improved conditions of work. Employers may react to these shifts in employee preferences, of course, through in fact improving work conditions. However, if these shifts in preference occur without appropriate employer responses, then a disequilibrium situation may be set up in which dissatisfaction grows and ultimately generates unproductive forms of employee behavior, such as reduced productivity, increased turnover, absenteeism, strikes, accidents, and the like. To some extent workers may be "bribed" to forego more meaningful work by means of paying them substantially higher wages, although such bribes may become increasingly ineffective and increasingly costly over time.

Our purpose in Chapter 2 was to examine several indices of work place behavior -- productivity, quit rates, absenteeism, strikes, and accidents -- to see whether it is necessary to postulate an increase in worker dissatisfaction in order to explain recent movements in these indices.

Limitations in data, analytical tools, and particularly the inherently subjective nature of worker job satisfaction do not permit us to say how much absenteeism, quitting, striking, etc., is attributable to worker dissatisfaction with the intrinsic nature of work. Given this restriction, we ask a different question: Is there evidence that recent changes in our indices of work place behavior reflect changes in the (unknown) level of worker job dissatisfaction?

Our general empirical strategy has been to account first for the influence of determinants of work place behavior emphasized by conventional economic explanations of quits, strikes, etc., and second, to search for a residual increase in each index which might be attributed to alleged increases in worker job dissatisfaction. We found that, whether or not worker dissatisfaction with nonpecuniary conditions and monetary bribes has indeed been increasing, movements in such indicators of socio-economic health can be tolerably well accounted for without reference to this alleged phenomenon.

Increased proportions of women and young people in the work force and/or of services and government in the national product have been held primarily responsible for the slowdown in productivity after the mid-sixties, although the sharp decline in 1969-70 has not been well explained by reference to these developments. Our analysis of quits confirmed the obvious expectation that, other things being equal, people who dislike their jobs are more likely to quit them than people who do not; but it also showed that other stated reasons, in the aggregate, have accounted for much more quitting than has job dissatisfaction. Analysis of aggregate quit rate behavior within various industry groupings for the period 1958-72 yields results which are quite consistent with this finding: after the increasing influence on quits of such variables as unemployment, the demographic composition of the work force involved, and relative wages and hours is accounted for, industry trends in quit rates disappear or even become negative; little "room" is left for discontent over nonpecuniary conditions of work as a determinant of quits -- except possibly to the extent that the influence of youth reflects our hypothesized impact of higher educational attainment on quits. Nor is there much, if any, evidence of a rising trend in quits in the heavy industries

in the durables sector, characterized as they are by assembly line production and the lack of worker autonomy associated with this type of operation.

In our discussion of the behavior of absenteeism, we reported the absence of any cyclical influence, although one might expect dissatisfied workers to absent themselves more frequently in order to look around for less undesirable jobs when jobs generally are more available. Rates of unscheduled absences did rise between 1967 and 1972 and rose most rapidly among lower-skilled blue-collar workers, but the increases were quite modest; part-week absences increased most rapidly in skilled or white-collar groups, and full-week absenteeism rose less rapidly in durables ("heavy industry") than in nondurables, various service, and wholesale trade. Consistent with the latter observation is our finding that absence rates in high-wage industries are not significantly different from those in low-wage industries. On the other hand, absence rates are higher in industries where weekly hours of work are longer. Thus it is possible that workers might seek to dilute the unpleasantness of their jobs by sacrificing income for more leisure time (without changing jobs); but cutting down on work and income in favor of more time off does not per se imply aversion to working conditions.

Similarly, an upsurge in strike activity, although an apparent reversal in trend, cannot be regarded as evidence per se of a concomitant welling-up of revulsion since it occurred against a background of rapidly increasing inflation. Increases in strike activity which were unexplained by conventional influences like rising prices and unemployment did occur, but not primarily in large-scale manufacturing industries where observers have expected job discontent to be most aggravated ever since the days of Charlie Chaplin. Nor did those sectors witness an increase in the incidence of wildcats in

the latter part of the '60's, although some other sectors (mining and government) did. And while the frequency of contract rejections rose between 1964 and 1968, it declined thereafter.

Our analysis of accident rates also did not reveal any uptrend that might be explained by increasing job dissatisfaction (although statistical and data inadequacies may limit the value of this last finding).

The fact that our multivariate analyses reveal a paucity of economic symptoms of increasing job dissatisfaction is of interest in itself. It illustrates the fallacies which can result from constructing an ad hoc theory on the basis of a single incident (e.g., Lordstown) while ignoring the complex array of factors which influence human behavior. Nevertheless, the analysis in Chapter 2 does not offer direct evidence on the question: Has worker job dissatisfaction increased in recent years? At most the evidence in Chapter 2 seems to say: If there has been increased job dissatisfaction, the economic consequences have been relatively small.

Chapter 3 investigates the determination of job satisfaction more directly. There we find, much as in Chapter 2, that more refined analysis tends to blunt first impressions of a sharp decrease in job satisfaction. Although the Gallup surveys suggest a pronounced decline over time for the entire group interviewed, the value of these particular surveys is subject to some doubt. The Michigan Survey Research Center surveys reveal only a slight and statistically insignificant drop in overall job satisfaction since 1969.

Younger workers are more discontented with their jobs than older workers (with noted exceptions), but this may be due to the fact that the jobs they hold as newcomers pay less well, provide less physical comfort, and are less challenging than the jobs to which they can look forward later on.

The Gallup finding of a substantial decline in satisfaction since the mid-1960's among workers under 30 is not confirmed by the SRC surveys for 1969-73. Moreover, to the extent that any such decline has reflected the great youth bulge in the labor force in the sixties, it may well prove to have been a temporary and aggregative phenomenon.

In Chapter 2, we suggested that the influence of the "Youth" variable on the behavior of quit rates could mean that the population's increased educational attainment has been generating "overeducation" and increased discontent. In Chapter 3, we find some support for this hypothesis in complaints of "overeducation" by respondents with some college education. On the other hand, we noted that this too may be a transitory phenomenon, given projections of relatively rapid growth of occupations containing highly educated workers and, as we note in a later section, containing the highest proportions of satisfied occupants. Moreover, workers who have completed requirements for the degree to find appreciably more satisfaction in their jobs.

In contrast to the influence of rising income on job attitudes, the influence of increased educational attainment may well be exercized through changes in workers' tastes and preferences. Changes in the economic expectations of women and of nonwhite groups would presumably operate in the same way as increased education. In fact, levels of job satisfaction among women have not been much lower than male levels to date; however, the proportion of women surveyed who felt discriminated against because of their sex has risen since the end of the sixties.

Racial differences in job satisfaction, on the other hand, have been pronounced (although, according to Gallup, black job attitudes change quickly). Within occupational (and age) groups, however, the differences are much less.

Indeed, it is a fair inference that for blacks, as for women, job dissatisfaction in part reflects resentment at discrimination and occupational segregation. However, occupation, along with age, seems to be the chief determinant of job satisfaction at any point in time.

The findings in Chapters 2 and 3, although often based on fragmentary, crude, and diverse sources of data, are mutually consistent. Chapter 2 found little room for increased job dissatisfaction in its attempts to account for certain types of economic behavior which have sometimes been alluded to as evidence of increased job dissatisfaction. Chapter 3 attributes such limited evidence of increased worker dissatisfaction as it finds primarily to sources outside the work place -- notably to demographic change. Moreover, it finds hope in the probable future both countervailing demographic developments and in an increased incidence of jobs which are at once high-paying and relatively satisfactory on nonpecuniary account.

The last-named consideration, in turn, lends some support to an optimistic interpretation of the a priori analysis in Chapter 1. This implies that if continuing economic growth can generate a larger proportion of "good" jobs in the economy the increased worker demand for nonpecuniary gratification which it also generates will be satisfied and not frustrated. But one must also consider an alternative hypothesis: that the evidence which we have adduced and reviewed in this report is consistent with the view that economic development to date has not yet resulted in levels of labor income and affluence sufficient to deflect workers significantly from their pursuit of the baser forms of compensation. This suggests that if the rate of economic growth slows down, the date of rebellion against (more) pay may recede further into the future. The policy inferences are not cheering, however, if, as is

probable, slower growth is associated with unabated or even stronger inflationary pressures. For one inference is that policymakers who would press for worker participation as a counterinflationary instrument had better not set their sights too high. And another inference is that if wages are effectively controlled, workers and employers may opt for nonpecuniary benefits instead. But a cultural revolution thus induced would come at a higher cost in terms of economic efficiency and welfare than a cultural revolution induced by more rapid economic growth.