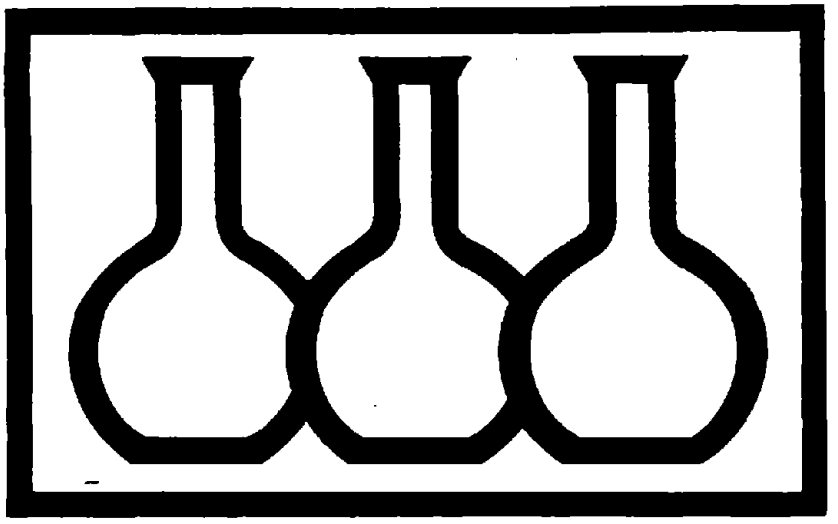

NIOSH RESEARCH REPORT

TERMINATION:

The Consequences of Job Loss

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE / CENTER FOR DISEASE CONTROL
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

BIBLIOGRAPHIC DATA SHEET	1. Report No. DLMA 91-26-72-23-1	2.	3. Recipient's Accession No. PB 282991
4. Title and Subtitle TERMINATION: THE CONSEQUENCES OF JOB LOSS			5. Report Date DECEMBER 6, 1977 6.
7. Author(s) Sidney Cobb, Brown University, Providence, RI 02912 Stanislav V. Kasl, Yale University, New Haven, CT 06510			8. Performing Organization Rept. No.
9. Performing Organization Name and Address INSTITUTE FOR SOCIAL RESEARCH UNIVERSITY OF MICHIGAN ANN ARBOR, MICHIGAN 48106			10. Project/Task/Work Unit No. 11. Contract/Grant No. DL 91-26-72-23
12. Sponsoring Organization Name and Address U.S. Department of Labor Manpower Administration Office of Research and Development 1111 20th St., N.W., Washington, D. C. 20210			13. Type of Report & Period Covered FINAL 1/1/72-6/30/73 14.

15. Supplementary Notes This report was submitted in fufillment of purchase order number 76-1261 by Brown University under the partial sponsorship of the National Institute for Occupational Safety and Health.

16. Abstracts

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The job-terminated men, 35-60 years of age, married and with 18 years seniority averaged 15 weeks of unemployment and 219 changes of employment status. In the mental health sphere changes were noted in sense of deprivation, affective states and self identity. In the physical health area, complaints were most prominent during the period of anticipation; physiological changes suggesting an increased likelihood of coronary disease took place as did changes in blood sugar, pepsinogen and uric acid suggesting increased risk of diabetes, peptic ulcer and gout. There was an increase in arthritis and hypertension and three men suffered attacks of patchy baldness.

17. Key Words and Document Analysis. 17a. Descriptors

Adjustment (psychology); employment; evaluation; industrial plants; job satisfaction; questionnaires; ; skilled workers; statistical analyses; surveys; unemployment.

17b. Identifiers/Open-Ended Terms

Health; physiology

17c. COSATI Field/Group 5 J & K; 6 J.

18. Availability Statement Distribution is unlimited. Available from National Technical Information Service, Springfield, Va. 22151.	19. Security Class (This Report) UNCLASSIFIED	
	20. Security Class (This Page UNCLASSIFIED	22. Price PC A14 MF A01

TERMINATION

The Consequences of Job Loss

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76-1261

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June 1977

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The material in this project was prepared under Grant No. 91-26-72-23 from the Manpower Administration, U.S. Department of Labor, under the authority of title I of the Manpower Development and Training Act of 1962, as amended. Researchers undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment. Therefore, points of view or opinions stated in this document do not necessarily represent the official position or policy of the Department of Labor.

DHEW (NIOSH) Publication No. 77-224

FOREWORD

Since its inception in 1970, the Stress and Motivation Research Section, Motivational Factors Branch, of the National Institute for Occupational Safety and Health has been involved in investigating the health impact of psychological job stress and in developing and promoting strategies for stress alleviation. Through these efforts we have been impressed with the complexity of the factors involved in defining the stress-health/strain relationship and have been made aware of the pervasive and debilitating effects of stress on worker health and well-being.

Our concern with the deleterious aspects of specific work practices, however, should not obscure our view of the work experience as a potential source of economic security, personal growth, and individual dignity.

The present report describes a prospective study of the physical and mental sequela experienced by 100 men who faced, and then experienced, sudden job termination as a result of a plant shutdown. This investigation of the effects of job loss complements previous research into the implications of occupational stress, and provides a broader perspective for understanding the function of work and the work process in defining worker health.

The National Institute for Occupational Safety and Health is especially grateful to Drs. Sidney Cobb and Stanislav Kasl for their thorough and scholarly efforts in examining the health consequences of job loss and is pleased to have been associated with this effort.

PREFACE

This has been a long study. Its metatheoretical roots go back to the beginning of the Mental Health in Industry Program at the Institute for Social Research (French and Kahn, 1962). The eventual closing of Baker plant was announced to the employees in November of 1963. Detailed planning for the study began early in 1964. The study was funded in September 1964 and the terminations at Baker took place from September through December of 1965. Two years later at the end of 1967 the Dawson plant closed and data collection was completed early in February of 1969. At this crucial point funds for the analysis and writing stage of the study were cut and it was no longer possible to hold the team together. Fortunately, the data were all on magnetic tape and were well documented. This has made it possible to continue the analysis and writing even though, we, the principal investigators, have now left and are employed at separate universities. Fortunately both of us are located in New England, so collaboration has continued.

A long study like this involves many people. Our gratitude and our special and individual feelings toward each of them can never be adequately expressed here.

First, our thanks go to colleagues who helped us with plans and procedures:

John R. P. French, Jr.
Robert L. Kahn
Ruth Cummings

Second, the important contributions of our partners must be acknowledged:

George Brooks	Laboratory Director
Winifred Connelly	Supervisor of Field Staff
Ki-Taek Chun	Statistical Consultant
John Lillibridge	Study Director
Rob Quinn	Study Director

The field staff, of course, did the bulk of the hardest work. They made the study a success where many had prophesied failure.

Carolyn Bookspun	Jennie Partee
Marilyn Jeffs	Ruth van Niman
Mary Ann Keller	Vivian Visscher
Gail Kohn	

Several assistants carried the bulk of the data management and preliminary analysis. Their work laid the foundations for this monograph:

Carol Clarke
Susan Gore
Stanley Hunt
Jeremy Katz
David Mann
David McFarland
Jeffrey Paige
Richard Pinneau
Wilhelm Schlingensiepen
Pat Tomlin

Finally, we are grateful to the many people who did the technical work in the laboratory, who coded and processed the data, or who maintained our files and our communications with the outside world:

Gregory Armstrong
Robert Axelrod
Judith Baughn
Barbara Betsey
Judy M. Blumhagen
Emily Bouchever
Faye Burton
Misoon Chun
Teresa D'Arms
Jean Dingwall
Carole Epstein
Howard Eichenbaum
Kathryn M. Gray
Nira Guiora
Judith Hrushka
Patricia Hunt
Robin Katz
Linda Lambertsen
Hazel Long
Beth Newport
Jamal Rassoul
Terry Rogers
Terry Roth
Charles Scott
Harriet Selin
Karl Singer
Sara Smith
Douglas Thompson
Julie Van der Schalie

The following agencies provided financial support:

United Automobile Workers
The Rust Foundation
U. S. Public Health Service, NIOSH
5 R01 CD 00102 later 9 R01 HS 00010
K 3 MH 16
NIOSH Purchase Order 76-1261
U. S. Department of Labor, Manpower Administration
41-26-72-22

The continuing active support of the United Automobile Workers was essential to the study. Not only did this organization provide seed money to get us started, but they were actively involved at every turn. They identified the appropriate plants for study and assisted us in persuading the men to join and to continue as participants.

To the 237 men going through what for many of them the toughest period of their lives, yet who gave freely of their time, we offer our salute. We promised them that they would remain anonymous, so the original records have been destroyed.

ABSTRACT

This is a report on a longitudinal study of men whose jobs were terminated. The 100 men and 74 controls were followed from before the two plants closed until 24 months afterwards. Because the focus was on health and mental health, the data were collected by especially trained public health nurses who visited the men in their homes.

The job-terminated men, 35-60 years of age, married and with 18 years seniority averaged 15 weeks of unemployment and 2.9 changes of employment status. In the mental health sphere changes were noted in sense of deprivation, affective states and self identity. In the physical health area, complaints were most prominent during the period of anticipation; physiological changes suggesting an increased likelihood of coronary disease took place as did changes in blood sugar, pepsinogen and uric acid suggesting increased risk of diabetes, peptic ulcer and gout. There was an increase in arthritis and hypertension and three men suffered attacks of patchy baldness.

This report was submitted in fulfillment of purchase order number 76-1261 by Brown University under the partial sponsorship of the National Institute for Occupational Safety and Health.

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CHAPTER 1

THE PROBLEM AND THE SETTING

This study of employment termination in middle life was prompted by the fact that the first round of studies of the program on Mental Health in Industry at the Institute for Social Research left the research staff dissatisfied. This group concluded that it was difficult to understand the effect of the work environment on a person unless one also had some understanding of the problems associated with crossing the work-no-work boundary. A study focused on the school-to-work experience, Youth in Transition, under the direction of Gerald Bachman and R. L. Kahn, et al., (1967) and this current effort, designed to describe the consequences of the work-unemployment-new job experience, were the first two studies in this new area. Subsequently, Willard Rodgers (1971) did a small study of retirement and currently, J. R. P. French, Jr. is planning another.

This approach to health problems might be called epidemiology in reverse. In Gordon's (1952) classical analysis of causal factors of disease, the emphasis was always on the disease and a search for the agent, host, and environmental contributors to that disease. Here we are dealing with an agent, job termination, and looking for the diseases and other ill effects that it causes. In American culture, it is clearly and widely felt that the work role is a central one. It is the major source of income and is the chief source of contact with the society at large. Not just Americans, but, essentially all cultures assign it significance beyond economic compensation. It offers status, regulates life activities, permits association with others and makes available a meaningful life experience (Kasl, 1974). However, as Kasl goes on to point out, the blue collar worker has become progressively less attached to his work because he finds it dull and stultifying. If he is already depressed by his job, he is not likely to become much more depressed when he loses that job. If the work role is not valued, how can its loss have consequences other than economic? However, it must be remembered that Marie Jahoda Lazarsfeld (1933) clearly described depression among the unemployed in Marienthal and life changes are known to produce a variety of different strains; and that Holmes and Masuda (1974) conclude from their many years of research that "life events, by evoking adaptive efforts that are faulty in kind and duration, lower bodily resistances and enhance the probability of disease occurrence". It is not clear whether the results of employment termination to be described are consequent on the role loss or on the more general phenomenon of change. To the extent that the results are different from those seen in bereavement (Parkes 1972), divorce (Weiss 1975), or forced residential change (Kasl, et al., 1977) one must suspect a specificity related to the work role.

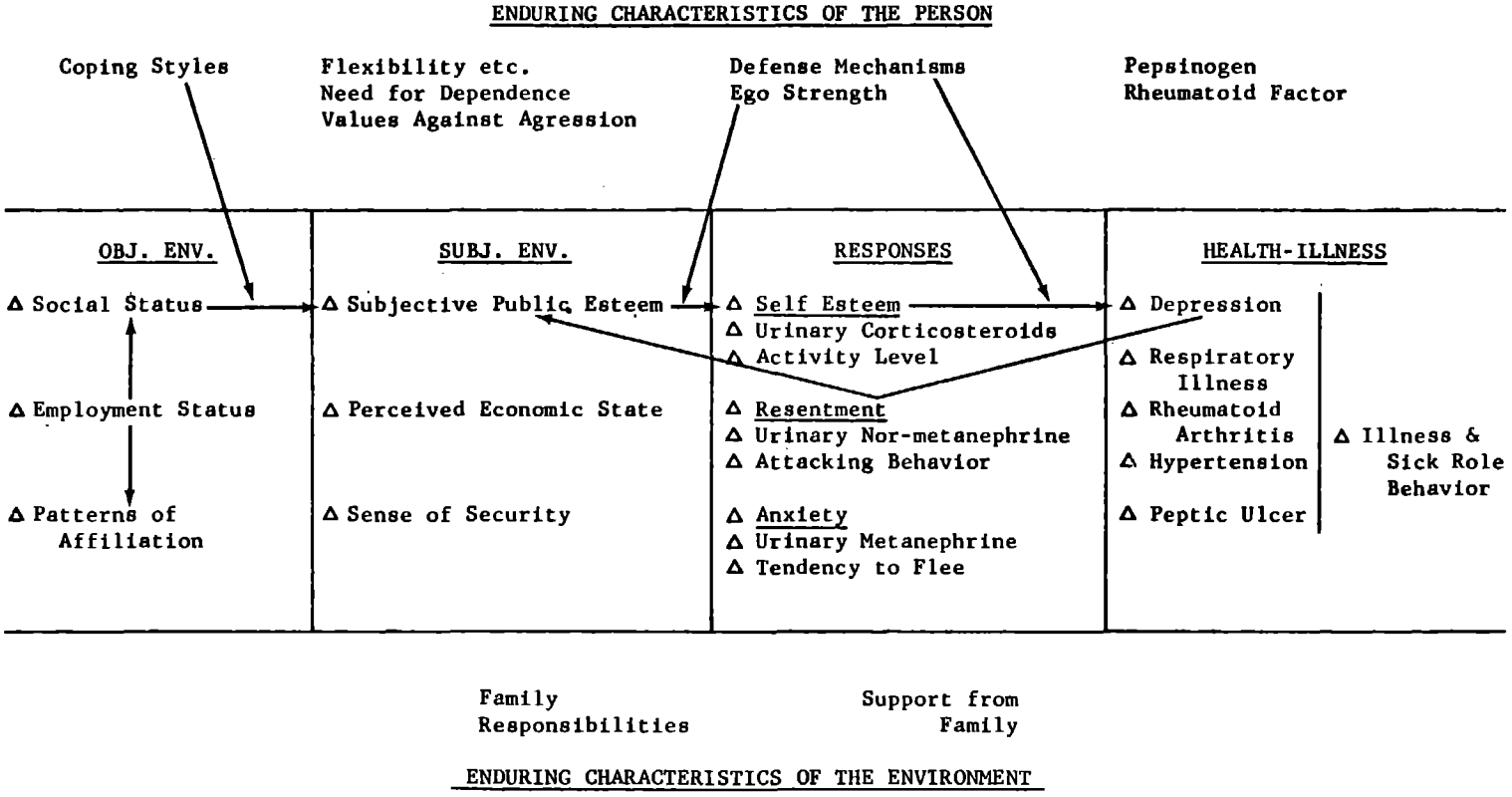

Figure 1.1 A diagramatic presentation of selected major variables from the study of people changing jobs. Reproduced with permission from the American Journal of Public Health Volume 56 (1966).

Another view is that when one combines the Puritan work ethic with the demands of an individualized society, one generates a whole series of motives that surely lead to complicated responses in the people involved. The complexity of the potential consequences of job termination can be seen in Figure 1.1, which is reproduced from an article published in the early days of the study before any of the data were available for examination (Cobb, et al., 1966). Let us look at the nature of this diagram

> "The left-hand box contains variables of the Objective Environment which are presumed to influence the variables in the second box called the Subjective Environment. The Subjective Environment in turn influences the Responses, which may be approximately classified as changes in feelings, physiology or behavior. These in turn influence the Health-Illness variables. The degree to which a variable in one box affects the relevant variable in the next one is frequently influenced by specific enduring properties of the person or his environment. A few such enduring characteristics are indicated in the upper and lower portions of the figure.
>
> Now let us follow a single simplified theme within this diagram. A part of the thinking about depression is illustrated by the arrows that flow from Δ Employment Status (The Δ's represent "change in") to Δ Social Status to Δ Subjective Public Esteem to Δ Self Esteem to Δ Depression. The arrows imply hypotheses within this postulated causal sequence. The reflexive arrow from Δ Depression to Δ Subjective Public Esteem indicates the reasonable hypothesis that the level of depression will influence the way in which a man views his environment. Furthermore, Subjective Public Esteem is presumably dependent not only on a man's new status, but also on the way he goes about dealing with it. The fact that this is probably an interactive relationship is symbolized by the arrow from Coping Styles to the arrow from Δ Social Status to Δ Subjective Public Esteem. Similarly, Defense Mechanisms and/or Ego Strength clearly condition the subsequent two relationships. It should be obvious that the depression theme described above does not constitute the totality of our understanding of this subject, nor does it indicate more than a small subset of the hypotheses about depression that may be examined. This theme does illustrate the way we go about constructing hypotheses. If we were to put in all the complex hypotheses involved, the figure would be totally illegible." (Cobb, et al., 1966)

This model makes it clear that the study is focused on the affective, behavioral, physiological, disease and illness behavior consequences of job termination. What literature there is on plant closings, some 17 studies covering 21 closings (Haber, et al., 1962), deals with the labor economic aspects of the problem. There have been no studies that we have been able to discover that have measured any health related variables other than self-reported health status and symptoms, though Fisher (1965) has

done a clinical study of 25 terminees. It seems surprising that this important life crisis has received so little attention from investigators concerned with health.

In this report it will be necessary to review briefly the social and economic changes that took place in the men's lives so that the health related changes can be placed in context. In fact, the consequences will be related both to the overall experience and to variations in the severity of the unemployment experience. The main chapters of the book will be devoted to psychological consequences, Chapter 4; physiological consequences, Chapter 5; disease consequences, Chapter 6; and illness behavior effects, Chapter 7. The reader who wants to avoid the technical details and go directly to the results can start with the last chapter, which summarizes the whole. But before we can get to those matters, an examination of the methods of data collection and analysis is necessary.

CHAPTER 2

COLLECTION OF THE DATA

With the hypotheses from Figure 1.1 of the previous chapter in mind, the next task was to design a data collection procedure that would be adequate to test as many of them as was feasible in a single study. The compromises between what was desired and what was feasible were many. For example, we opted for extensive data collection on a small sample and agreed among ourselves to run the risks of some possible increase in non-response biases for the sake of a broad coverage of outcome variables in a longitudinal design.

SITE SELECTION

The selection of appropriate sites was of course largely based on opportunity. After a couple of false starts trying to get in through the management door, we concluded that the only adequate access to employees about to undergo a plant closing was through a union. Since the United Automobile Workers had helped initiate the research with a seed grant, it was natural that we should turn to them. They proved to be most helpful in identifying plants in which closings were planned and in persuading the employees to participate in the study.

Date were collected at seven sites. The names Baker, Dawson and Cryland are fictitious. They represent the plants referred to elsewhere as plants A, B and C. Baker plant is the subject of the book by Alfred Slote (1969). The control companies are not referenced individually. The Baker and Dawson plants actually closed and are the focus of this report. The Cryland plant did not close during the period of the study so observations there were limited to an extended period of anticipation involving job changes within the company. This experience will be referred to only occasionally in this report, for the sample size is not really adequate for purposes of comparison.

Quite by chance, but very fortunately for the study, Baker plant was located in a large metropolitan area and Dawson plant was located in a small town in a rural area. Being familiar with the findings of Turner and Lawrence (1965) indicating that small town workers are less alienated and have stronger association of their job satisfaction with their work involvement than do their urban peers, we welcomed the opportunity provided by this contrast. As will be seen below, the comparison proved to be instructive.

Control data were collected at four sites at which there was essentially no threat of termination. One of the control companies was sold to a new owner during the study and this caused some uneasiness, but there was

no clear threat of job termination. We felt this to be a normal part of blue collar employment and realized that all it could do would be to work against our hypotheses about anticipation so we kept the company as a control. Two of these companies were in urban areas and the other two were in small towns. These plants will not be individually identified though occasional reference to urban controls and rural controls will be made.

Baker was a family owned company that was taken over by a conglomerate. It began making paint for the carriage trade and converted to the needs of the automobile industry. The men selected were mostly machine operators, assistants in the laboratory, and clerks in the shipping department. For most of the men the work was relatively light though there were a few who handled 55 gallon drums. It was located in a large urban area and almost all of the men lived in the city. However, their residences were widely dispersed and few of the men saw each other except on the job.

The Dawson plant was located in a small town of less than 3,000 people, that was surrounded by farmland. In fact, many of the employees were part-time farmers. Many of them had reason to know each other quite aside from their employment at Dawson. This also was a family plant that was bought up by a conglomerate. In this connection it is interesting to note that Caloren (1974) indicates that recent takeovers are commonly associated with layoffs, terminations, and closings. Dawson was closed in order to do the work in an area where the labor costs would be lower. The products were light display fixtures used by wholesale and retail firms. The men in the study were mostly machine operators and assembly line workers. There were a few tool and die makers.

The Cryland plant was urban in location and was a subsidiary of one of the major automobile manufacturers. It was to be closed, with the intention of moving the operation to an adjoining state where taxes and labor costs would be lower. However, the process of making the move took so long that the men in our study were able to keep using their seniority to remain on at the old location for the two years that were available to us for observation. The result was that we acquired data on a set of men who had repeated job changes within the plant and who were continuously under threat of termination or moving to the nearby out-of-state location of the new plant. The men in the study worked in small groups assembling components for automobiles.

The controls came from four different companies and were quite comparable to the terminees on major demographic characteristics, type of work done and the rural-urban location of the plants. One was the maintenance department in a large university, and the men were predominantly machinists and carpenters. The second company was a plant that manufactured parts for heavy trucks; it was located in a large metropolitan area, and the men were machine operators and assembly line workers. The other two companies were both rural manufacturing concerns where the men again were primarily machine operators and assembly line workers.

In Table 2.1 are detailed the groupings of the 237 men studied, by company, and by the final classification to which they were assigned after

Table 2.1 The number of subjects by company and by final classification.

Company	Final classification				
	Terminees	Controls	Internal change	Other+	Total
Baker	46			10	56
Dawson	54		2	1	57
Cryland			28	10	38
Urban controls companies		44		2	46
Rural controls companies		30			30
Other*				10	10
Total	100	74	30	33	237

* These were men who had been unemployed for the whole year and were interviewed only at one year after termination. Since they are a special group they don't fit well into the routine analysis.

+ This column includes men who retired early, men with records too incomplete for analysis, a man who was continuously on sick leave, etc.

Table 2.2 Demographic characteristics of the population defined for the main analyses.

Characteristics	Total	Terminees	Controls	P*
Number of employees	174	100	74	
Sex	Male			
Race	92% White			
	8% Black			
Marital status	100% Married			
Mean age	47.5 years	46.2	49.2	<0.05
Mean number of years of school	9.8 years	8.5	10.4	<0.05
Mean number of years at study company	17.8 years	17.4	18.4	<0.05
Average hourly pay	$3.16	$2.95	$3.45	<0.002

* t-test on the difference between the means for terminees and controls.

review of their actual experience. The focus of the analysis will be on the 100 terminees and 74 controls. Occasionally, mention will be made of the 28 men (Cryland) who were under continuing threat of termination.

In some of the earlier analyses and in Chapter 7, a few of the men in the "other" column are included in appropriate parts of the analysis.

HOMOGENEITY OF STUDY GROUP

The employees to be studied were selected with an eye to maximizing homogeneity, since the samples had to be small. To be admitted to the study an employee was required to be a male union member, aged 40-59, (there were a few who were a little older or younger because their ages were incorrectly stated on the union rolls), married, and with at least three years of seniority. As can be seen from the first column in Table 2.2, they are a group of married men who are nearly 50 years old, have on the average completed 10th grade in school, and have been stably employed at the one company for many years. They earned nearly $3.20 per hour and 8% were black.

In order to test the success of the attempt to balance the controls to the terminees, the homogeneity of the two groups with respect to 40 variables was examined by David Mann. Of these variables 17 were demographic in nature; 10 were personality variables, 6 were work experience related and 7 were health related.

Out of these 40 variables, 6 show significant differences between the terminees and controls (3 are $P< 0.005$, 2 are $P< 0.02$ and 1 is $P< 0.002$). Of course, 2 might be expected at the $P< 0.05$ level just by chance alone, so we are not very concerned that we have a major bias. From inspection of Table 2.2, it appears that the controls are about 3 years older, about 2 grades better educated, have 1 year greater seniority, and about $0.50 per hour greater pay. Of these, only the last is a difference large enough to be of concern.

From Table 2.3, one can see that there is an appreciable difference in the health of the two groups. Though only two of the six variables are significant in their own right, all six are in the direction that suggests that the controls have somewhat poorer health than the terminees. This may be accounted for in part by the fact that the controls are on the average three years older than the terminees. As will be seen later on, this raises some problems in certain sections of the analysis.

As compared to the Baker men the Dawson men were all white and were slightly, but significantly, older, less healthy, higher on need for social approval (Crowne & Marlowe, 1964), and higher on the Social Support score (Gore, 1973). Only the last of these, Social Support, will appear as an issue in the analyses to follow.

Table 2.3 The difference between terminees and controls on health variables.

Health variables	Terminees	Controls	P*
Number of respondents	100	74	
Respondent rates health less than "excellent"	79.8%	85.1%	NS
Nurse rates respondent as potentially "disabled"	39.3%	44.4%	NS
Under regular medical care	49.0%	52.7%	NS
Having regular dental care	53.0%	56.0%	NS
Having one or more of six cardiovascular problems	34.0%	52.7%	0.02
Having one or more of nine chronic diseases	64.0%	79.7%	0.02

* There is 1 chance in 64 that this series of variables would all have come out showing the controls less healthy than the terminees.

Table 2.4 Participation rates for the two plants that closed and the four plants that provided controls.

	Originally Selected	Participated Initially		Provided Usable Data*	
Plant	N	N	%	N	%
Baker	90	70	78	46	51
Dawson	71	62	87	54	76
Controls	109	82	75	74	68
Total	270	214	79	174	64

* Somewhat more men provided data on some variables, so larger and somewhat variable numbers have been used in preliminary reports and in Chapter 7.

PARTICIPATION

In order to keep the participation rate high; or rather to reduce dropouts once the study was under way, three decisions were made at the outset. The data would be collected by warm-hearted, supportive, friendly women. There would be as few changes of interviewers as possible, and no pressure would be exerted to obtain initial participation. The first decision was made because it was felt that only by establishing some personal relationships with the men would it be possible to keep them in the study for the required period. It was recognized that this would entail some danger of biasing the data, but some data were clearly better than none. As it turned out, this was a wise decision for there were substantial differences in dropout rates that appeared to be related to this dimension of the interviewer's personality. There was no excess of dropouts at the time of change of interviewers. In order to minimize bias, the interviewers were instructed in the art of avoiding judgmental comments on the data provided by the respondents.

The effectiveness of the decision to avoid any form of pressure to join the study cannot be assessed. Table 2.4 shows the participation rates for the Baker and Dawson plants and for the controls. As can be seen by the totals, 79% participated initially and 64% met the criteria for adequate data for the final analysis. It should be noted that four of the terminees were excluded because they didn't have a true termination, i.e. they continued to work for the same company at another location or they simply retired early, and one of the controls ended up being excluded because he changed jobs. In order for a man's data set to be considered adequate for analysis, he had to have essentially complete information for both the first and second rounds of data collection and for either the 12 or 24 month record.

The fact that participation was substantially higher at Dawson than at Baker is probably due in part to each of four things: first, the rural location and easy communication among the Dawson men after termination; second, the greater social support in the rural area; third, the more effective union leadership at Dawson; and fourth, the fact that the research staff was more experienced because they came to Dawson with two years of experience behind them. The Cryland men are a special group who will appear in the analyses relatively infrequently. Sixty-five percent of the 74 men selected agreed to participate and 28% or 38% provided usable data on the experience of changing jobs without changing companies.

Obviously some men quit rather than wait things out and a few others were transferred to another plant of the same company, so this last percentage is not just an indication of refusals and dropouts but rather a suggestion that there is some risk that this group may not be representative of the original population.

Because of earlier work (e.g., Chen and Cobb, 1958; Schwinian and Blaire, 1966; Babington, 1970; and Norton, et. al., 1976) it was reasonable to assume that those lost from observation would be different from those

Table 2.5 Rates of refusal and early dropping out, by interviewer.

	Interviewer Number								
	1	2	3	4	5	6	7	8	Overall
Number approached	27	65	57	74	53	29	35	26	366
Percent refusing completely	26	12	25	24	36	38	20	23	25
Percent dropping out early	4	15	5	9	21	10	3	12	11

χ^2 = 26.8 (14df) P <0.05

χ^2 = 17.9 (7df) P <0.02 (collapsing categories of refusing and dropping out)

Table 2.6 The relationship of the Crowne-Marlowe Scale and its subscale to the percent of men skipping a round and/or refusing the 24 month visit among the N men who participated for at least two rounds. (Note that the Crowne-Marlowe Scale was administered at the 12 month round so that men dropping out before that were not eligible for this analysis).

	Quartiles					
	Low 1	2	3	High 4	gamma	P
Crowne-Marlowe Total	22%	17%	17%	10%	-0.23	0.10
C-M Assert Good	30%	16%	12%	7%	-0.43	0.02
C-M Deny Bad	31%	4%	14%	18%	-0.16	NS*

* Though gamma is not significant, there is obviously a strong curvilinear relationship. χ^2 = 14.5 P = 0.005

remaining in the study. A detailed analysis of this matter was undertaken by Carol Clark. She found a significant difference among interviewers as is shown in Table 2.5. On a purely observational basis, it seemed to the supervisor that the more flexible and persistent interviewers had the best response rates.

With respect to personal characteristics of the respondent, there appeared to be a small bias with respect to the Crowne-Marlowe Scale of need for social approval (Crowne & Marlowe, 1964). This scale is composed of two kinds of items. First there are items on which the respondent is given the opportunity to claim that he regularly performs rare but highly approved acts. The second kind of items are those in which the respondent is given the opportunity to deny that he performs common but undesirable acts. Our factor analysis of this scale yielded two seven item scales called respectively Assert Good-Seven and Deny Bad-Seven. (See Appendix C) The effects of these scales on response are shown in Table 2.6. Here it can be seen that there is a tendency for those who assert that they are good, careful, thorough, etc., to behave in exactly that way and continue their participation. On the other hand there is a curvilinear relationship with respect to the Deny Bad-Seven Scale. This differential behavior with respect to the components of the Crowne-Marlowe Scale has been common in our experience. This is a matter which deserves attention in future studies, for it is our opinion that the Crowne-Marlowe Scale does not have a single simple dimension.

Beyond this there was a tendency for continued high participation among those who saw the study in a favorable light, those who seemed to be interested in medical care, and those who had a high self evaluation. None of these three dimensions had sufficient effect to be seen as a source of bias and the effect of the Assert Good-Seven Scale noted above can hardly be seen as a matter for concern, since it tended to eliminate those who were less likely to be good and reliable respondents. We conclude, as did Norton, et al. (1976), that the dropouts present a negligible source of bias. However, we don't feel so sure about the original refusals.

THE TERMINATION EXPERIENCE

At this point it is appropriate to describe the average experience of the 100 men whose jobs were abolished, so that one will have a picture of the nature of the stress involved. In the first place it was obviously impossible to visit these men before they learned of the impending shut down. Therefore, we were forced to settle for making our first data collection during the phase of Anticipation. As can be seen from Figure 2.1 this came on the average about six weeks before the closing. At this time the men were still on their old jobs but already knew that the plant would shortly be closed. Visits during the phase of Termination average about six weeks after the closing. At this time the men were either unemployed or in the probationary period on a new job. At Phase 3, Readjustment, about six months after the closing, the men were mostly on new jobs in which they were to remain. Some were still

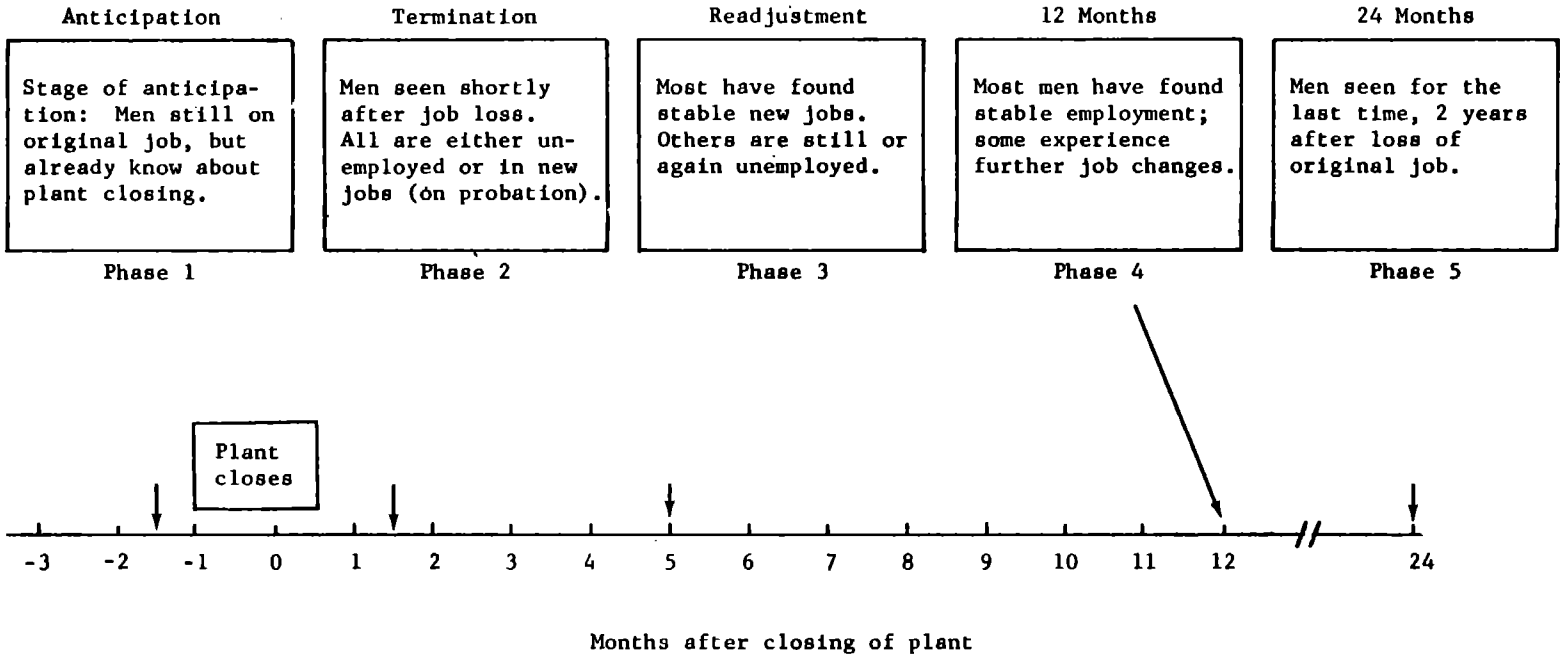

Figure 2.1 The basic design of the longitudinal study of men losing their jobs, and the schedule of home interviews by public health nurses.

unemployed and a few had lost the first new job and were again unemployed. We tried to get visits at four and eight months, but the scheduling was difficult and so many of the visits were missed or delayed that we had to average the data on those subjects on whom we had two visits. We have referred to this as if it were a single visit at six months. Phase 4 is 12 months after the closing; and Phase 5 is 24 months post termination. There were relatively few job changes in the second year.

FIELD STAFF

The field staff who collected the data were all women. Seven were trained as public health nurses; in fact, three of them had Master's degrees. The eighth was trained in social work and had had extensive experience in a variety of positions. She was the only black member of the team. Parenthetically it is interesting to note that participation rates were not dependent on any aspect of black-white interaction. Furthermore, though we had feared that the inevitable need to make some changes in interviewers would lead to increased dropouts, this proved not to be in case. Perhaps our concern, which led to careful procedures for the transition is the explanation for this.

Because of their previous training, all of these women were skilled in gaining entry to the home. However, most of them lacked training in formal structured interview procedures. This led us to provide detailed training interviewing. At first this involved role playing in groups of three (interviewer, respondent, observer), then the use of tape recorders. A systematic set of joint visits to respondents provided opportunity for the interviewers to compare their techniques and to systematically record observations made simultaneously for statistical comparison. One of the research directors (Cobb) made multiple visits with each of the interviewers and discussed techniques based on observations made in the men's homes. Training with respect to special skills, such as the taking of blood pressures, is discussed in the relevant chapters that follow.

DATA COLLECTION

The data collected were of many sorts. In general they fell into the following categories: demographic and personal, economic and social, personality, physiological, reports of behavior and reports of illness. The various styles of data collections were commingled in order to keep the visits lively and varied. This amount of data required two visits to collect. This was convenient for it permitted us to ask the men to keep a health diary for the intervening two weeks. An outline of the data collection procedure is presented as Appendix A and the interview instruments appear as Appendix B.

The initial visit was always preceeded by a letter from the union and usually by a telephone call during which the time was arranged. Sometimes the initial contact was at home when efforts to get through on the phone had failed. This visit took an hour to an hour and a half and covered demographic data on the respondent, his wife and family; a

history of past health; and two personality scales, the flexibility-rigidity scale from the California Psychological Inventory (Fx) (Gough, 1957) and The Achievement Risk Preference Scale of Atkinson and O'Connor (1966).

The first health visit was scheduled as soon as convenient after the initial visit. This involved the collection of current health data with special attention to rheumatoid arthritis and peptic ulcer; the collection of a blood sample and a timed urine specimen (at least 90 minutes) along with related information about smoking and eating during the preceeding three hours, and drugs taken in the last 24 hours; the performance of a card sort test for the assessment of affective state; data on employment, job seeking behavior and economic status; and information about social activities.

Of the above items only the card sort test requires further description here. The others are either obvious or will be treated in detail in the relevant chapters. This card sort technique was developed (Hunt, et al., 1966), because it seemed that these blue collar men preferred to "play cards" rather than do paper and pencil tests. Furthermore, the processing of the 114 items per deck was greatly facilitated by the fact that the items were printed on the back of pre-punched IBM cards. After the cards had been sorted into the specified five piles and placed on top of the pile indicator cards, "very true of me" to "not true at all of me", the piles were stacked in order, and a card with the man's identification number punched into it was placed in front and the whole deck was dropped into the computer. Out came a printed profile and two IBM cards punched with the score on each item.

After the interview the nurse filled out a brief form on the affective state of the respondent, the appropriateness of his response to whatever aspect of the environment was threatening him at the moment, changes, if any, in the marital relationship and notes on things not elsewhere recorded. Though these notes were useful and interesting they were mostly not codable into appropriate categories for statistical analysis and were subject to the bias of personal preconceptions with regard to outcome.

The health diary or daily health record was left at the home at the end of the health visit and the instructions for its use were reviewed. For the ensuing 14 days, the man was expected to fill in one line each evening. At the end of two weeks, the nurse picked up the diary and from that diary was coded the proportion of days felt "not as well as usual", was sick at home, in bed or in hospital, the proportion of days on which a physician was visited and on which some medication was taken. The diary was picked up and reviewed at the self-identity visit which occurred two weeks after the health visit.

This method of data collection was adopted because Wilcox (1963) found it appreciably more satisfactory than other available methods. However, as we discovered it has problems when the sample is small because the time frame is short, thus providing too little data for analysis in some categories, e.g. hospitalization.

The self-identity visit, as noted above, came not less than 14 days after the health visit. At this time, the health diary was carefully examined with the respondent to see that it was complete and internally consistent. Then the respondent completed a sentence that began "I am ----" as many times as he could up to six, and following that he answered a series of self-administered questions about the extent of his sense deprivation on a series of work related dimensions. His pulse and blood pressure were recorded at the beginning and end of the interview and again the nurse recorded her impressions. The whole took about 50 minutes.

At the 12 month and/or 24 month round of visits, certain additional data were collected. These additional data included comparison of the new job with the old job, an estimate of the amount of life disturbance due to the change, other life events occurring during the year, data on retirement benefits available on the new job, and three additional personality scales: the Crowne-Marlowe Scale of need for social approval (Crowne and Marlowe, 1964), the orality scale of Lazare, et al.(1966) and the subtle ego-resilience scale of Block (1965). There were a few other things included at this time which proved to be of little value. Before closing a case the nurse made a brief summary of the key points in this man's termination experience. Individual outcome variables will be described as they appear in the results. The major control variables will be described below.

CONTROL VARIABLES

The major control variables used in this report are four in number; Time Unemployed, Number of Job Changes, Employment Status at the Time of the First Visit After Termination, and Degree of Social Support. In addition, a composite of the personality variables that appeared to indicate psychological defense was created. This has been used in earlier reports, e.g., Cobb (1974) and will be the subject of a later detailed communication.

Amount of Unemployment is the first control variable. It is the percent of time unemployed in the first year of the study. The division at the median into low versus high is less than 10% versus 10% or more.

Number of Job Changes is the second control variable. Any change of employment status was counted. That is employment to unemployment, and unemployment to employment, were each counted. Transitions involving part-time work were also counted. A change from one job to another was counted as 1, if the interval between ending one job and beginning the next was less than one week. In categorizing the number of job changes as "fewer" or "more", the split was made between 2 and 3; thus 1 or 2 changes fall into the "fewer" category and 3 or over into "more". It should be obvious that every terminee had a score of at least 1 on this index and that all the controls had a score of 0.

Employment Status at the time of interview is coded full employment, part-time or unemployed. However, it is used as a dichotomy:

employed (full or part-time) versus unemployed. This is not a stable characteristic of the man but may change from visit to visit.

Social Support is the fourth and last regular control variable. This index had to be generated after the fact, when we realized that we had a problem in this area. For more detail than can be presented here see Gore (1973). The Index of Social Support was constructed in two sections: wife support, six items, and support by others, seven items. Since all the men were married this seemed to strike a good balance. The 13 items are shown in Appendix C. The first six constitute the wife support set and were available at each interview so, after ascertaining that the changes over time were trivial, ipsative means (means within person across time) were calculated. These were converted to standard scores, and averages across the six items were calculated. This resulted in the Wife Support Index. Next the remaining seven items: three items of affiliative behavior; two items on sociability and expressiveness; and two items of perceived support from friends and relatives, were similarly combined. (See Gore, 1973 for details). This resulted in the Index of Other Support. Finally the Wife Support Index and the Index of Other Support were added together to make the Index of Social Support. Although both Gore (1973) and Cobb (1974) found greater effects when the split was made between the lower and middle tertiles, for present purposes the more conservative approach of using a median split has been used. Since this is an ad-hoc measure we must rely largely on face validity.

However, the prediction that the level of social support would be higher in the rural communities than in the urban areas was borne out for difference between the means ($t = 1.86$ $P < 0.05$) and for the proportion in the lowest third of the distribution ($t = 2.77$ $P < 0.005$), Gore (1973). Without further validation it is of course appropriate to be cautious in interpreting the findings with this index.

"Psychological Defense" is the last control variable. It has not been systematically used, but it appears occasionally in places where its effects are striking. This measure identifies a man as well defended if he is in the extreme 12% of any of the following measures:

1. The rigid end of the CPI flexibility-rigidity scale of Gough (1964)

2. The high end of the need for approval scale of Crowne and Marlowe (1964)

3. The high end of the subtle ego resilience scale of Block (1965)

4. The oral end of the orality scale of Lazare, et. al. (1966). (The three suggestibility items which did not correlate well with the rest of the scale were deleted.)

The above variables are not significantly correlated with each other.

ANALYSIS

The analysis began with an amorphous mass of data that had to be reduced to manageable form. The data reduction involved several steps. First it was necessary to clean up the list of subjects so that we had an analyzable set of men with a clear job loss experience, 100 terminees; and, with no job loss, 74 controls. The results of this process have already been described.

Second we had to deal with a rather irregular data set collected during the period of readjustment. The problem centered around the fact that this was a period when the men were least willing to give time to the study so completion rates were low and proper scheduling of visits at four and eight months after termination was difficult. When we realized that we had at least a "four month" or an "eight month" visit on almost all the terminees and that these clustered around six months after the relevant closings, we saw a simple solution. We averaged the data for those men who had two visits and took whichever visit was available on those who had only one. We then spoke of this data set as representative of the period about six months after the closing.

Third it was clear that we had to reduce the set of all possible control variables to a manageable size and to use them routinely in all the analyses. The results have been presented above. The three measures of job change stress; Amount of Unemployment, Number of Job Changes, and Employment Status have been examined, as has the measure of Social Support. The measure of "Psychological Defense" was found not to influence the pattern of psychological response though it did influence the overall level of many psychological variables. As a result, it was dropped from the routine analysis only to creep back again in the analysis of the physiological variables where it had some striking effects.

Finally we had to free the psychological self-report indices of dead wood. This was accomplished by factor analysis. In general the variables we put into the questionnaire were the variables that emerged from the factor analyses, but occasional items that didn't fit were identified and removed. At one point we were so distressed at the failure of our depression measure to show the expected changes that we decided that we had built a trait rather than a state measure and so went back to do a dynamic factor analysis. That is, we did a factor analysis of change scores so the resulting factor had the property that the items changed together within person rather than were together across persons. The resulting measures are only slightly different from the static measures of depression and anxiety, but they are the ones that are used in analyses in Chapter 4.

Having thus completed the data reduction, we were ready to move ahead to design the pattern of analysis. Chapter 3, Economic and Social Consequences, is purely descriptive and does not require special explanation. However, Chapter 4 has a well defined and closely followed format which is the basis for all the analyses, though the style of presentation varies substantially in the later chapters.

First of all each variable is checked for sequence effect or time trend in the controls, seasonal effects, diurnal variation, and drug effects. A sequence effect was identified by correlating the variable with the visit number among the controls. If the correlation was not significant it was presumed that sequence effect was not present. The approximately 280 visit rounds for controls, averaging 3.8 for each of the 74 men, were well distributed over the months of the year. The mean for each month was calculated on all the relevant variables and the data were examined to see if a significant pattern could be discerned. Diurnal variation and drug effects are not important for the psychological variables in Chapter 4, but are important for the physiological variables in Chapter 5. When significant effects are found among controls in one of these four areas, appropriate adjustments are made. If the negative statement that these problems are absent does not appear it can be safely assumed that the matter has been examined and no important effects noted.

For variables which showed none of these effects, the data on each control were averaged over the several occasions he was seen and this average (ipsative mean) was used as the best estimate of that control's score on that variable. The mean of the 270-280 observations is always very close to the mean of the 74 ipsative means, but the standard deviation of the single observations is always somewhat higher than the standard deviation computed from the ipsative means. The lower the temporal stability of a variable, the greater is the reduction in standard deviation when one uses the ipsative means. The standard error of the mean of the single observations is always smaller than the standard error of the mean based on the ipsative means, since the effect of the larger N on the computation of the standard error is much greater than the effect of the somewhat larger standard deviation.

The significance testing which the reader will encounter will deal primarily with one of several questions: 1) Are there any changes in the dependent variable over time, either for all terminee cases or for some specific subgroup of cases? 2) At a particular point in time, is one subgroup of cases different (higher, lower) from another subgroup? 3) For a particular period of the study, is one subgroup of cases showing different change over time than another subgroup of cases? 4) At a particular point in time, are cases (or a subgroup of cases) different from controls? 5) And finally (in instances where the controls show significant trends over time) are the changes over time different between cases and controls? In dealing with the fourth question, control data using the ipsative means, rather than single observations, will be used; this involves a lower N for controls and consequently a larger standard error of the mean. This is a conservative procedure and approximates more closely the significance testing in a two-way ANOVA with repeated measures on one factor. For the fifth question, significance testing will be a simple t-test for independent means, where the observations for cases and controls are difference (change) scores.

As the metrics of the various scales have little intrinsic meaning for the psychological variables in Chapter 4, they are converted to standard scores with a mean of zero and a standard deviation of one, based on the

mean and standard deviation of the controls. On the other hand, the physiological variables are presented in grams, centimeters and seconds, as appropriate, because the actual values have familiar implications.

To some extent in Chapter 5, Physiological Changes, and usually in Chapter 6, Diseases, frequency distributions become more appropriate than means because the important issue may be the frequency with which the usual limit imposed by servomechanisms is breached, rather than the mean value which is dominated by the cases for which the values remain in the "normal" range, or the distribution may be so skewed as to make parametric statistics inappropriate or, as in the case of diseases, counting cases is the only numerical approach possible. This, of course, leads to t-tests involving the standard error of the difference between two proportions, chi square tests or the use of Goodman and Kruskal's (1954) gamma. In an analysis of this sort it is probably wise to be conservative about the level at which one accepts a finding as significant. In most instances, the reader will find the actual probability stated so he can judge for himself.

It is now time to move on to the findings. Further methodological details will be described as required in the subsequent chapters.

CHAPTER 3

DESCRIPTION OF THE JOB LOSS EXPERIENCE

This chapter will present some descriptive information about the job loss experience and how the men viewed it. Table 3.1 presents the basic unemployment data for the two companies. It can be seen that at the time of the Termination visit, about one third of the Baker men and two thirds of the Dawson men were unemployed. By 6 months, the difference between the two companies has essentially disappeared. The cumulative number of weeks of unemployment indicates that by the end of the first year the Baker men had averaged about eight weeks of unemployment, while the Dawson men had experienced about 50% more. However, by the end of the second year, the two companies look quite similar; evidently, between 12 and 24 months the Baker men had more additional weeks of unemployment than did the Dawson men. The last variable indicates the proportion of time each man had been unemployed between plant closing and a particular visit; thus between plant closing and the next visit, Termination, the average Baker man was unemployed one half of the time and the average Dawson man, three quarters of the time. Over the two years after plant closing, the men in the two companies were unemployed about an average of one seventh of the time. The apparent discrepancies between the number of weeks and the proportion of time at 24 months is covered by slight variations in the time from termination to last visit. Unemployment status was recorded as unemployed, employed full-time and employed part-time; and if employed, whether salaried, on wages, or self-employed. A few sought training for new occupations but one of the most distressing aspects of the whole transition was the discovery that they were not eligible for federal retraining programs until they were actually unemployed. Even worse than this, employment agencies would do nothing for the men until they had received their "pink slips." Of the 100 men in the two companies, only 16% experienced no unemployment whatever during the two years; 64% were unemployed once, and 20% were unemployed two or more times.

In addition to experiencing episodes of unemployment, the men also underwent job changes above and beyond the original plant closing. An index of "Job Changes" was constructed to reflect the number of changes during the <u>first year</u> after plant closing which involved either place of employment, type of job, or employment status (e.g., laid off, placed on part-time, etc.). Baker men experienced a mean of 2.9 (S.D. = 1.5) such changes; the Dawson men showed the same mean (2.9, S.D. = 1.8). If one counts only the negative job changes (i.e., being laid off but not when one is put back on full-time), these means become about half that. The experience of instability in the men's reemployment can also be seen in the following data. At the Termination visit, there were 46 men out of 100 who already had a full-time job; 16 of these 46 were able to find

Table 3.1 The unemployment experience by time of visit.

Unemployment experience	Time of visit			
	Termination	6 Months	12 Months	24 Months
Employment status at time of visit				
Baker				
% unemployed	32.6	9.3	4.9	5.4
% part-time	4.3	2.3	0.0	0.0
Dawson				
% unemployed	68.5	11.1	7.8	4.1
% part-time	1.9	0.0	0.0	2.0
Mean number of weeks of unemployment, cumulative to visit				
Baker	...	...	8.2	15.4
Dawson	...	...	12.5	16.0
Average proportion of weeks unemployed, cumulative to visit				
Baker	0.51	0.25	0.16	0.13
Dawson	0.75	0.31	0.24	0.16

that new job with no intervening unemployment whatever (presumably, they lined up these jobs prior to plant closing), and they had a stable employment history thereafter. The other 30 men who were employed at this visit experienced some brief unemployment just after plant closing. When they were seen on the next round of visits (6 months), 37% of them had already experienced additional job changes, while the other 63% had continued on their new jobs.

Telephone interviews were conducted with 88 of the original 100 terminees three years after plant closing. Their employment status could be classified as follows: 81% working (wages and salaries); 9% working (self-employed); 3% laid off or unemployed; 7% no longer in the labor force (disabled, retired, deceased).

These telephone interviews also provided information about the men's retirement coverage. Among those working for wages or salaries, only 58% were covered by a retirement plan; among those not covered by a plan, one half were working for an employer that had no retirement plan at all. Of course, all the terminees were originally covered by UAW negotiated retirement plans. Data on controls revealed that 98% of those on wages or salaries were covered by a retirement plan. These long-term follow-up data strongly suggest that the biggest economic impact of the original plant closing may not be due to the immediately ensuing episodes of unemployment, but will be a delayed effect at retirement.

Examining this issue a little more closely, it turns out that at Baker the retirement plan was "overfunded", meaning that at the time of the closing, there was more money than required to pay the pensions of those eligible for retirement. As a result, each man received 40 dollars per year of service in addition to his severance pay. This was surely less than any individual had contributed no matter how low his salary. By contrast, the Dawson men did in fact get their pensions vested. Fifteen months after the closing each former Dawson employee received an annuity certificate stating that beginning on the day of his retirement he would receive a monthly income calculated on the amount paid in. These payments ranged from 17 cents to 63.14 dollars per month.

As indicated above only about half of the men were able to get into new jobs which had pension plans. Some of them were over 55 years old and were excluded from the usual plans which require ten years of employment for eligibility.

Next, we shall present some information about the new jobs. Data from 24 months indicate that in terms of hourly wages, the old and the new jobs were quite comparable, on the average: 26% were making slightly less money (1 cent to 50 cents per hour) and 25% were making slightly more (1 cent to 50 cents); similarly, 24% were making quite a bit less (51 cents or more per hour) and 25% were making quite a bit more (51 cents or more per hour). Overall, the men could have expected some modest raises in the two years, if the plant had not closed down;

Table 3.2 The men's views of their original jobs in relation to current jobs at 12 Months and 24 Months.

Job satisfaction dimensions and phases	Comparison of new and old jobs: Better than old one (%)	Same as old one (%)	Worse than old one (%)
Job as a whole			
12 months	37	30	33
24 months*	60	27	13
Pay			
12 months	38	19	43
24 months	48	21	31
Co-workers			
12 months*	32	60	8
24 months*	31	64	5
Supervision			
12 months*	37	57	6
24 months*	47	45	8
Content of job			
12 months	34	37	29
24 months*	47	41	12
Promotion opportunities			
12 months	36	44	20
24 months*	37	50	13
Opportunities for skill utilization			
12 months	34	43	23
24 months*	43	45	12

* Significantly different from an equal distribution of "better" and "worse".

therefore the lack of change in wages between old and new job does hide some financial loss, probably about 10 cents per hour, in addition, of course, to the wages lost while not working.

The old and new jobs were also compared on the Duncan code of occupational prestige (Russ, 1961). Here again there was no change, on the average: 75% of the men experienced only very small changes, defined as less than 11 points on the Duncan code: 11% experienced a decrease of 11 or more points on the Duncan scale and another 14% experienced an increase of the same magnitude.

Table 3.2 presents subjective data relevant to the comparison between the original job and the job held at 12 and 24 months on a number of basic job satisfaction dimensions. (Chapter 4 presents a more detailed analysis of job satisfaction measured in the usual way, not as a comparison between two jobs). The overall trends suggest that: 1) the men tried to view the new job more favorably than the original job; and 2) this is more noticeable at 24 months than at 12 months. The smallest differences in perceptions involve pay while the largest differences involve co-workers and supervision. Testing for statistical significance may be done by assuming that responses which are not "ties" (new job same as old one) should be equally distributed into "better than" and "worse than" categories. The following distributions are significantly different from this chance expectation: a) job as a whole, 24 months; b) co-workers, both occasions; c) supervision, both occasions; d) content of job, 24 months; e) opportunities for promotion, 24 months; f) opportunities for skill utilization, 24 months.

The data presented in Table 3.2 were actually based on a 5-point rating scale with the new job: 1 = much better, 2 = somewhat better, 3 = about the same, 4 = somewhat worse, 5 = much worse. For purposes of easy presentation of results, the two positive and the two negative categories were collapsed. In a more refined analysis, each man's original ratings on the seven dimensions were averaged for a total score. The group means and standard deviations for the two companies and two occasions are as follows: 1) Baker at 12 months, 2.74 ($\pm$ 0.79), at 24 months, 2.29 ($\pm$ 0.69); 2) Dawson at 12 months, 2.80 ($\pm$ 0.76), at 24 months, 2.56 ($\pm$ 0.71). For both companies and both occasions, these means represent significantly more favorable rating of the new job than a chance expectation of a mean of 3.0.

These results can be taken as a very general indication that the men are <u>not</u> looking back on their old jobs with great nostalgia and fondness which might lead to their dissatisfaction with their new jobs. However, the extent to which these ratings might be anchored in reality cannot be determined. Objective data on pay do support the lack of significant differences on subjective ratings of pay. However, the data on co-workers and supervision are curious: after some 19 years (on the average) in the old jobs, one might have expected that these two more social aspects of the work environment would have been rated more unfavorably on their current jobs. The results are opposite to this intuitive expectation and would argue against any strong assertions that the men par-

ticularly missed their old co-workers when they were recalling their old jobs.

Some data were also collected on the men's perceptions of whom they blamed for being unemployed: "Who do you think is to be blamed for the fact that you are not working right now? We would like to know how much you think each of the following is responsible for your unemployment." The rating scale ranged from 1 = not at all to 5 = completely responsible. The relevant results are presented in Table 3.3. Since this question was asked only of men who were not working at a particular visit, numerically meaningful data are available for Termination and 6 months only. At Termination, when over half of the men were not working, the men attributed most of the blame to the management of the company, some blame to the business situation and the government, and decreasing amounts of blame to the union, automation, and themselves. This pattern of attributed blame is about as realistic as one could find. The company management's decision, indeed, closed the plant down; automation was not the reason and they themselves were not responsible. The business situation made it more difficult to find prompt reemployment. By 6 months, there is a tendency to blame self somewhat more and all the other possible sources somewhat less. This again seems "realistic" in that continuing to be unemployed is more attributable to personal characteristics (higher age, poorer health, lower skills) and less attributable to the original cause for the plants having closed down.

Overall, we were impressed that the men who were not working had a realistic appraisal of the reasons for this and were able to keep from blaming themselves. (For example, at Termination, 85% of the men chose "not at all" as the degree of own responsibility for not working). This has implications for analysis and interpretation of psychological effects to be presented in the next chapter. It may also be in contrast to the observations made in unemployment studies of the 1930's (e.g., Bakke, 1940a and 1940b; Cavan and Rauck, 1938; Ginzberg, 1943; Komarowsky, 1940), where many men who became unemployed blamed themselves for the loss of their jobs.

A number of questions and approaches were developed to get at the men's perceptions and evaluations of the job loss experience, that is, the closing of the plant and the subsequent reemployment experience. Because we could not very well ask the men to evaluate the experience while they were in the midst of it, the decision was made to collect such data at 12 and 24 months. Included here were two questions: "First, could you tell me how you would rate this job loss?" and "Now could you tell me how long you think it took you before things got pretty much back to normal?" Table 3.4 presents the data on these two questions. In general, the men appear to rate the experience in between "somewhat disturbing" and "very disturbing" and are indicating that it took them, on the average, somewhere between "a few months" and "around half a year" before their lives normalized. The inter-company differences are not quite significant, but there is some tendency for the Dawson men to indicate that the return to normal took longer. The data from the two year follow-up indicate a slight trend for later assessments to indicate lower severity of experience, but the trend is not significant.

Table 3.3 Perception of blame for being unemployed, at Termination and at 6 Months.

	Termination		6 Months	
Focus of blame*	Mean	S.D.	Mean	S.D.
The business situation	2.5	1.6	2.4	1.1
The company management	4.1	1.4	3.5	1.7
You yourself	1.4	1.0	2.1	1.5
The union	1.9	1.2	1.4	0.9
The government	2.3	1.2	1.7	1.1
Automation	1.6	1.1	1.1	0.2

* Asked only of men who were unemployed at time of visit. The five degrees of perceived responsibility were: 1 = not at all, 2 = slightly, 3 = somewhat, 4 = quite a bit, 5 = completely.

Table 3.4 Some perceptions and evaluations of the job loss experience at 12 Months and 24 Months.

Evaluation		12 Months		24 Months	
		Baker	Dawson	Baker	Dawson
Rate job loss					
1 = hardly bothered me at all 2 = upsetting a little bit 3 = somewhat disturbing 4 = very disturbing 5 = changed my whole life	Mean	3.4	3.2	2.9	3.0
	S.D.	1.4	1.3	1.4	1.4
How long before normal					
1 = about a week or so 2 = about a month 3 = a few months 4 = around half a year 5 = not yet back to normal	Mean	3.4	3.9	3.1	3.6
	S.D.	1.4	1.1	1.5	1.3
Plant closing and job loss as "Life Event"					
10 = traffic ticket 30 = trouble with in-laws 50 = getting married 80 = divorce 100 = death of wife	Mean	49.6	55.3	43.7	51.8
	S.D.	25.7	36.0	30.2	29.5
Graphic chart of "Ups & Downs In Your Life Last 18 Months" (computed for only 4 month segment surrounding plant closing)					
0 = really happy times 2 = better than usual 3-4 = usual 5 = some difficult moments 6 = hard times 7-8 = really very rough on me	Mean	3.8	3.9	...*	...*
	S.D.	1.6	1.5	...*	...*

* Not collected at 24 months.

Table 3.4 presents data from two other measures, both exploratory. In one, the respondent was presented with a ladder which went from 0 to 100 and on which certain events and corresponding values (obtained from the Holmes and Rahe, 1967, Social Readjustment Rating Scale) were listed in order to provide anchors. The respondent was asked to place the job loss experience on this ladder amongst the other "life events", in terms of how much change it caused in his life. The means in Table 3.4 indicate that the job loss experience was placed, on the average, somewhere in the middle of the ladder, comparable to "getting married"; 27% of the ratings placed it as high as "divorce", or higher. The intercompany differences and changes over time are not reliable; the temporal stability is r = 0.43.

The last index in Table 3.4 was based on a graphic approach in which the respondent was presented with verbal anchor points on the vertical axis and months, over an 18 month period, on the horizontal axis. His task was to draw the "ups and downs" in his life, starting with about five months before plant closing. The means in Table 3.4 would seem to place the time period around plant closing in the "usual" range. However, the mean on this scale for the period at time of interview (12 months) was 2.6, which would place the plant closing experience about one standard deviation above (i.e., worse than) their evaluations of their lives at 12 months. Moreover, the data on controls revealed a mean of 2.86 (S.D. = 0.92), which again is about one standard deviation below (i.e., better than) the terminees' evaluation of their plant closing experience.

The average of the three intercorrelations of the top three items in Table 3.4 was 0.28 at 12 months and 0.61 at 24 months. This would suggest that as time went on, the men's perceptions and evaluations of the job loss experience became more global, less differentiated and the three items came to reflect more closely this single, overall evaluation. The graphic chart measure correlated, on the average, r = 0.28 with the other three items collected at 12 months.

Table 3.5 explores some of the correlates of the perceptions and evaluations of the job loss experience which have just been examined in Table 3.4. Two of these are "objective" indicators of the severity of the experience after plant closing: number of weeks unemployed during the first year and number of job changes during that same period. (Another objective index, number of weeks till first full-time job, was also considered; however, its correlation with number of weeks unemployed is so high -- r = 0.85 for Baker and r = 0.90 for Dawson -- that it would clearly be a redundant indicator.) The third variable is the average comparison of old and new jobs across the seven dimensions of Table 3.2, made at 12 months. In Table 3.5, it can be seen that the two objective indices of severity are pretty much independent. The variable reflecting the comparison of old and new jobs reveals one significant association with the two objective indices: Dawson men had a tendency to rate the new job more favorably the longer they were unemployed prior to obtaining it. This is probably realistic because in the rural area good jobs were hard to find so those who took the first job offered were

Table 3.5 Correlates of perceptions and evaluations of the job loss experience showing influence of variables characterizing the experience.

Ratings of job loss	Number of weeks unemployed during first year		Number of job changes during first year		Comparing old and new job, average on seven job dimensions*	
	Baker	Dawson	Baker	Dawson	Baker	Dawson
At 12 months						
Rate job loss	0.21	0.01	-0.01	-0.06	0.14	0.03
How long before normal	0.39	0.03	0.16	-0.06	0.35	0.32
Plant closing and job loss as "Life Event"	0.43	-0.17	0.05	0.07	0.06	0.28
Graphic chart of "Ups and Downs"	0.16	-0.14	0.15	-0.13	0.58	0.21
Total job loss stress index (sum of above 4 items)	0.45	-0.12	0.13	-0.03	0.43	0.32
Number of weeks unemployed during first year			0.17	-0.01	0.05	-0.37
Number of job changes during first year	0.17	-0.01			0.02	-0.08

* Based on a five point rating scale, where 1 = new job is much better than old one, and 5 = new job is much worse than old one.

likely to get poor jobs. The remainder of Table 3.5 presents the correlations of these three indices with the perceptions and evaluations of the job loss experience. The last measure is a summary index of "job loss stress", consisting of the sum (in standard scores) of the four items seen in Table 3.4. The correlations with number of weeks unemployed reveal a modest influence of this variable among Baker men only: the total job loss stress index correlates $r = 0.45$ ($P < .001$) with weeks unemployed. Among Dawson men, number of weeks unemployed seems to bear little influence on job loss stress; the insignificantly negative correlation is significantly different ($P < .005$) from the moderate positive correlation seen for Baker men. The second variable, Number of Job Changes, does not have much influence on the perceptions and evaluations of the job loss experience in either company. The third variable, Comparison of Old and New Jobs, reveals some tendency in both companies for the men to rate the job loss experience less stressful to the extent that they prefer the new job over the old one. Both correlations with the total job loss stress index are significant.

Overall, the most striking finding is the inter-company difference in the association between number of weeks unemployed and the total job loss stress index. A possible explanation of this is that those Dawson men who were longest unemployed were those who had satisfying farm work to do and who could do without the cash income for a while. Unfortunately, there is no way to test that hypothesis in the available material.

An examination of 14 demographic and personality correlates of the Total Job Loss Stress index, which is the sum of the four items seen in Table 3.4, revealed only a few significant findings. The demographic variables were unrelated but three personality variables were reliably, and consistently across companies, related to this index. They were Ego Resilience (Baker - 0.25, Dawson - 0.29), Flexibility - Rigidity (Baker - 0.29, Dawson - 0.28) and Average Level of Depression (Baker - 0.44, Dawson - 0.40). These are small correlations but the consistency across companies suggests that they are meaningful.

The Block Ego Resilience scale shows significant and comparable correlations in both companies, which indicates that men lower on ego strength tend to report higher job loss stress. The CPI Flexibility-Rigidity scale indicates that men who are more flexible are reporting more stress. The two personality scales are not significantly correlated with each other. In terms of predictions from theory and previous work, the association with the measure of ego strength is totally in line with its construct validity and with previous preliminary analysis from this study (e.g., Kasl, et. al., 1968 and 1975; Kasl and Cobb, 1970) which showed that men who were low on Ego Resilience came down more slowly from initially elevated levels (at Anticipation and Termination) on various biological and health variables.

The results with the CPI scale involve a more ambiguous theory: rigid men are presumably better able to defend against experiencing (or reporting) stress. For example, a study of organizational stress (Kahn, et. al., 1964) revealed that flexible men responded to role conflict with

Table 3.6 The interaction influence of social support and number of weeks unemployed on total job loss stress.

Social support and amount of unemployment	Means on total job loss stress (in standard scores)		
	Baker	Dawson	Total
Low			
Less unemployment	-.54	.05	-.33
More unemployment	.60	.37	.44
High			
Less unemployment	.05	.16	.11
More unemployment	.11	-.22	-.10

increased job tension, while rigid men showed no association between role conflict and tension. On the other hand, the construct of flexibility-rigidity would suggest some benefits to being flexible, e.g., better adaptability to changed circumstances in one's life and work situation. However, our data do not reveal any such benefits.

The last of these three personality variables is Depression. Our measure in this area will be fully described in the next chapter. For the moment it is sufficient to note that it had an average temporal stability that was moderately high ($r = 0.53$) and it responded only slightly to the stresses of the termination. It has a moderate and consistent correlation with the Job Loss Stress index. Because of the very different ways in which the variables were collected and constructed, it is unlikely that much of this association is due to shared method variance. On the other hand, it is well known that depressed people tend to complain more than others.

A few other variables predict job loss stress in only one company but not in the other. For Baker company, these are: number of weeks unemployed during the first year and number of symptoms/conditions at initial visit, and for Dawson: Social Support and Relative Economic Deprivation at 12 months.

Table 3.6 examines the possibility that social support interacts with the objective measure of severity of the unemployment experience, number of weeks unemployed, in influencing Job Loss Stress. The results provide support for this hypothesis, though the nature of the interaction differs somewhat by company. Among Baker men, we see that the influence of amount of unemployment is seen primarily among men low on social support. The results for Dawson men can be stated somewhat differently: the effects of Social Support are seen primarily among men experiencing more unemployment. In both companies, however, the men low on Social Support and high on amount of unemployment are experiencing the greatest amount of Job Loss Stress. The interaction term for the total group is significant ($P < 0.025$).

Comparable analysis was performed, examining the possible interaction between Social Support and Number of Job Changes. The trends were in the same direction as in Table 3.6 but the differences were weak and not significant.

This style of analysis, looking for interactions of Social Support with amount of unemployment and number of job changes, will be reappearing in the chapters to come on psychological, physiological and health effects.

CHAPTER 4

PSYCHOLOGICAL CONSEQUENCES

This chapter will describe the effects of the plant shutdown, and the resultant unemployment and/or job change, on a selected list of dependent variables which fall roughly into the following categories: 1) the respondent's perception of his economic state; 2) the respondent's sense of "deprivation" on a number of dimensions which are relevant to the work role; 3) the respondent's mental health and well being; and 4) other variables, including job satisfaction and leisure activities.

For the variables in this chapter, the metrics of the various scales have little intrinsic or intuitive meaning. Thus, presenting the original means for terminee cases for the different phases of the study is not very illuminating and the reader would have to refer repeatedly to the data on controls (means, standard deviations) to have an appreciation of what is happening to the cases. Consequently, we shall present most of the data on cases in terms of standard scores, i.e., with a mean of zero and a standard deviation of 1.0, with the control data (mean and standard deviation computed from the 74 ipsative scores) used as a basis of standardization. Thus, for example, a mean of -0.50 for cases at Phase 5 would mean that the cases as a group are one half of (the controls') standard deviation below the controls' mean. Standard scores thus provide the reader with an immediate sense of the strength of the association (i.e., separation of the scores of cases and controls); for example, a mean of -0.50 indicates that about 69% of the controls are above the mean for the cases at that phase.

Table 4.0 is intended to serve two purposes: a) it is a prototype of the kinds of analyses to be presented repeatedly for the different dependent variables, and b) it shows the N's on which the means for the different phases and different comparisons will be based. In considering each variable the first set of means will present the overall data for the two companies both separately and combined. The remainder of the results combine the two companies but split the cases along one or more control variables. These variables have been described in Chapter 2.

In addition to data of the type laid out in Table 4.0 we shall look at Employment Status at time of interview. The analysis is of a different type because Employment Status changes from time to time, and there are only a few men unemployed at 12 and 24 months after termination. Consequently, what will be presented are the following set of results: a) means at Termination and at 6 Months for employed versus unemployed cases; b) change scores from Anticipation to Termination, involving the contrast of going to new job vs. becoming unemployed; c) change scores involving the transition from being unemployed at one phase and being employed at

Table 4.0 Major types of data analysis presented in this chapter and number of men on whom data are available for the five phases of the study.

Cases and subsets	Number of men on whom data available, by phase				
	Anticipation	Termination	6 Months	12 Months	24 Months
All cases	100	100	96	92	86
Baker (urban plant)	46	46	42	41	37
Dawson (rural plant)	54	54	54	51	49
Less unemployment	45	45	44	45	41
More unemployment	47	47	46	47	45
Fewer job changes	51	51	50	51	47
More job changes	40	40	40	40	38
Low social support	47	47	46	45	41
High social support	51	51	49	47	45
Low social support &					
Less unemployment	25	25	24	25	22
More unemployment	20	20	20	20	19
High social support &					
Less unemployment	20	20	20	20	19
More unemployment	27	27	26	27	26
Low social support &					
Fewer job changes	28	28	28	28	26
More job changes	16	16	16	16	14
High social support &					
Fewer job changes	23	23	22	23	21
More job changes	24	24	24	24	24

the next phase; and d) intra-person comparison of all occasions when a man was unemployed vs. when he was re-employed, whether or not this involves adjacent phases. These are, of course, somewhat redundant analyses, but they do represent perhaps the most sensitive approach to examining the effects of being unemployed.

INDICES OF ECONOMIC STATE

Two measures will be used in the analyses, both of which are adopted from a previous study of plant closing and unemployment (Aiken et. al., 1968):

> Relative Economic Deprivation: a two item index based on precoded, scaled answers to two questions: "How difficult is it for you and your family to live on your present total family income?" and "How does your present family income compare with that of most of your friends and neighbors?" High score = high sense of deprivation.
>
> Relative Economic Change: a five item index based on questions dealing with changes in total family income, family debts, and family savings, and the experiences of having to cut expenses and obtaining loans from friends and relatives. For each question, the time referent is "last three months." High score = high economic change.

Analyses carried out on the controls only reveal the following regarding Relative Economic Deprivation: a) there are no significant changes over time and no significant differences between urban and rural controls; b) the temporal stability of this measure is fairly high: $r = 0.63$, which is the average correlation across all pairs of visits; c) it is moderately correlated with objective data such as respondent's hourly pay ($r = -0.31$) and the ratio of number of wage earners in the household to the number of household members ($r = -0.32$); d) it is moderately correlated with such psychological variables as Perceived Sense of Social Support ($r = -0.36$), Depression ($r = 0.25$), and Low Self-Esteem ($r = 0.29$).

Analyses on the controls regarding Relative Economic Change reveal the following: a) there are no significant changes over time and no significant rural-urban differences; b) the temporal stability of the measure is fairly low ($r = 0.31$); c) it does not correlate significantly with objective sociodemographic variables or with psychological variables -- the highest association of note is with Perceived Sense of Social Support ($r = -0.26$).

The two measures of economic state are modestly correlated (average correlation of 0.33 within each phase). Content of these measures reveals the Relative Economic Deprivation scale to be primarily subjective, while the Relative Economic Change reflects actual events and experiences.

Table 4.1 presents the data on Relative Economic Deprivation for terminees. As noted already, the values are standard scores, with the data on controls (means, standard deviations) used as the basis of computing the standard scores. The top of the table gives the overall data for the

Table 4.1 Relative economic deprivation of the men as they go through the five phases of the job loss experience.

Cases and subsets	Means by phases* (standard scores) Anticipation	Termination	6 Months	12 Months	24 Months
All cases	-0.23	0.74	0.31	0.18	0.18
Baker (urban plant)	0.09	0.35	-0.07	-0.25	0.27
Dawson (rural plant)	-0.49	1.05	0.58	0.52	0.11
Less unemployment	-0.14	0.21	0.01	-0.28	0.02
More unemployment	-0.40	1.26	0.65	0.62	0.33
Fewer job changes	-0.07	1.01	0.46	0.19	0.12
More job changes	-0.52	0.46	0.19	0.18	0.27
Low social support	-0.15	0.95	0.60	0.23	0.18
High social support	-0.30	0.58	0.03	0.13	0.19
Low social support &					
Less unemployment	-0.03	0.25	0.11	-0.41	-0.06
More unemployment	-0.36	1.78	1.25	1.02	0.46
High social support &					
Less unemployment	-0.28	0.16	-0.12	-0.12	0.10
More unemployment	-0.43	0.88	0.18	0.32	0.25
Low social support &					
Fewer job changes	0.00	1.05	0.63	0.12	0.01
More job changes	-0.47	0.92	0.62	0.48	0.51
High social support &					
Fewer job changes	-0.17	0.96	0.24	0.29	0.25
More job changes	-0.55	0.17	-0.12	-0.02	0.13

* High scores indicate sense of relative economic deprivation

two plants and for all cases combined. At Phase I (Anticipation) no negative anticipation effect is evident; in fact, Dawson is significantly lower than Baker and than the controls ($P < 0.01$ for both). There is no explanation for this and, of course, we don't know if this represents a steady baseline for the rural cases, or if these cases just prior to plant closing revised their current economic well-being upwards in an implicit subjective comparison with the possible (anticipated) economic hardships which were about to hit them. During Termination, the cases experienced a sharp increase in Relative Economic Deprivation, which is highly significant for Dawson ($P < 0.001$) but insignificant for Baker. The differential change between the two companies ($P < 0.001$) is presumably a function of the severity of the unemployment experience: at Termination, 33% of Baker men and 70% of Dawson men were unemployed (see below for a fuller exploration of the role of severity of the experience). The means for the remaining phases reveal that Dawson men remain significantly higher than controls in Phases 3 and 4 and do not come down to "normal" levels until 24 months, with the decrease from 12 to 24 months being significant ($P < 0.05$). The Baker men are not significantly different from controls during the last three phases. However, their increase from 12 to 24 months is significant ($P < 0.025$) and presumably reflects the fact that these men, more than those at Dawson, were experiencing additional unemployment on their new jobs during the intervening second year. It is also worth noting that two years after plant closing the economic deprivation of the cases is significantly greater ($P < 0.001$) than it was at the beginning of the study, i.e., they have not returned to their pre-closing levels.

The next control variable in Table 4.1 involves Amount of Unemployment. The results reveal that at Anticipation, those with more unemployment start out somewhat lower (i.e., have a better evaluation of their economic well-being), but this apparent difference totally disappears when one controls for Baker versus Dawson. The increase in Economic Deprivation from Anticipation to Termination is much greater ($P < 0.001$) for the "more unemployment" group, and they remain significantly higher through 12 months. In fact a comparison of 24 months with Anticipation reveals that 60% of these men feel worse off two years later and only 17% feel better off, with the remaining 23% reporting no difference.

Analyses involving Employment Status at time of interview revealed the following results. 1) At Termination and at 6 Months, the means on Economic Deprivation for men unemployed at those phases were 1.23 and 1.14, respectively; employed men had means of 0.21 and 0.18 for those two phases, respectively. (Reference to Table 4.1 reveals that the means at Termination are almost identical, whether one uses the control variable Amount of Unemployment or the present control variable, Employment Status. This is because at Termination these two control variables are highly associated. This is less true of the next phase, 6 Months, where many of the men in the "more unemployment" group are by then employed). 2) Men going from Anticipation to prompt employment at the second phase go up in Economic Deprivation an insignificant amount (0.12), while those going on to unemployment go up 1.74, that is, almost two standard deviations in terms of data on controls. 3) Conversely, the men

who experience the transition from unemployment at one phase to re-employment at the next phase (mostly those going from Termination to 6 Months, but later for those fewer men with more prolonged unemployment) experience a drop in Economic Deprivation which is almost one standard deviation (0.96). 4) Consistent with the last finding is also the observation that the intra-person difference between all occasions when a person was unemployed and when he was employed is 0.96. A most general summary of these findings is that becoming unemployed after many years of stable employment is associated with a sizeable drop in economic well-being, which is not fully recovered in the later transition from unemployment to reemployment.

The next control variable in Table 4.1 is Number of Job Changes. It can be seen that at Anticipation men in the "more job changes" group perceive significantly less ($P < 0.01$) economic deprivation than men in the other group with fewer changes. This finding holds within each company and is not a function of any association between number of job changes and Baker versus Dawson.

It is not readily apparent how this difference should be interpreted since, of course, Phase 1 values antedate the job changes. One possibility is that some of the employment changes are undertaken voluntarily and that men with an initially better sense of economic well-being are more willing to undertake such changes.

This interpretation is plausible in terms of what happens at the subsequent phases. At Termination, which is too close to the plant closing for the job changes to have yet taken place, the two groups experience an increase of equal magnitude in economic deprivation and also retain their relative difference. However, with later phases, the two groups converge and by 24 months they have crossed over, suggesting a moderate detrimental effect of job changes on economic deprivation -- in addition to the possible self-selection effect of economic deprivation on job changes.

The next control variable to be considered is Social Support. As noted previously, there is a negative correlation ($r = -0.36$) between Relative Economic Deprivation and Social Support among the controls. Stated another way, the mean (in standard scores) for controls low on social support is 0.25, while it is -0.22 for controls high on social support. Thus if Social Support has no other effect on cases, we would expect the two groups to be separated by about one half of a standard deviation but otherwise show similar patterns of ups and downs across phases. The actual data in Table 4.1 are fairly consistent with this "no effect" expectation: economic deprivation is generally higher among cases low on social support, but never more than by about half a standard deviation (Termination and 6 Months), the difference seen in controls. By 24 months the two groups of cases are practically identical, but this finding is not statistically reliable as different from the expected values (i.e., in a two-way ANOVA, with the two factors as controls versus cases at 24 Months and High versus Low Social Support, the interaction term is not significant).

The remainder of Table 4.1 concerns the possible interaction between Social Support and the other two control variables indicative of the severity of unemployment experience. At Anticipation, there is no interaction between Social Support and Amount of Unemployment. For the other phases (especially 2,3, and 4), the results are consistent with the hypothesis that more unemployment will have particularly adverse effects among those perceiving low social support. However, significance testing reveals that the interaction is significant ($P < 0.05$) only at 12 months and falls just short of significance at Termination and 6 Months.

The results involving the interaction of social support and job changes do not present any interpretable pattern. This is partly because the main effect of number of job changes on economic deprivation was not clearly demonstrated.

Table 4.2 presents the data on Relative Economic Change for the cases. The fluctuations in Baker are not significant. In Dawson, the increase from Anticipation to Termination and the decrease from Termination to 6 Months are highly significant ($P < 0.001$); moreover, these large changes over phases in Dawson are reliably different from the small changes in Baker. Overall, then, the effects of the job loss experience on this variable are only seen in the rural company and are restricted in time to the second phase.

The above differences in the two companies are in large part due to differences in the severity of unemployment. Data involving severity of unemployment show the men with more unemployment to have a pattern of changes which shows the same notable elevation at Termination, but otherwise only modest fluctuations.

Analyses involving employment status at time of interview reveal the following results: 1) At Termination and at 6 Months, the means for men unemployed at those phases were 0.81 and 1.23, respectively; employed men had means of -0.32 and -0.21 for those two phases, respectively. Clearly, classifying men by employment status produces a sharper separation than does the amount of unemployment, particularly at 6 Months. 2) Men going from Anticipation to prompt employment at the second phase go down in Relative Economic Change an insignificant amount (0.10), while those going on to unemployment go up 0.78 ($P < 0.001$). 3) Conversely, the men who experience the transition from unemployment at one phase to reemployment at the next phase experience a drop in Relative Economic Change which is almost one standard deviation (0.91, $P < 0.001$). 4) A similar difference is obtained (0.83, $P < 0.001$) if one computes the intra-person difference between all occasions when a person was unemployed and when he was employed.

The control variables Job Changes and Social Support do not reveal any reliable effects on Relative Economic Change. The only significant difference is the lower mean at Anticipation for men with more job changes ($P < 0.05$) which, as in the case of economic deprivation, suggests a self-selection effect of economic change on job changes.

The data on the interaction of Social Support and the two control variables indicative of the severity of the job loss experience do not reveal a pattern of findings which is interpretable and reliable. Thus we must conclude that the major findings on Relative Economic Change are the short-term effect of amount of unemployment (Table 4.2) and the differences obtained by employment status at time of interview.

Before leaving the data on the two indices of economic state, it might be interesting to present very briefly the data on some 30 men in the third company, Cryland. It will be recalled from Chapter 3 that this was an urban plant in which the proposed closing did not take place. The men experienced prolonged anticipation and then "bumping" but no unemployment. ("Bumping" refers to the practice of assigning a man with high seniority whose job is being abolished, to take over another job at the same plant carried out by a worker with lower seniority, who is then laid off.

Data on these 30 men are available for four phases or occasions: the first two phases roughly represent prolonged anticipation, while the latter two phases represent increased uncertainty and job changes within the same plant.

The means on Relative Economic Deprivation for the 30 Cryland men go from 0.00 to 0.22 to 0.57 to 0.58 during the four occasions. The last two means are significantly greater than controls' ($P < 0.025$); analysis of slope reveals that 18 of the 26 men whose slope is different from zero are going up over the four phases ($P < 0.05$ for difference from chance distribution of positive and negative slopes). The data on Relative Economic Change reveal the Cryland men indistinguishable on mean levels or change over time from controls. These results suggest that the former, but not the latter, variable is sensitive to increasing threat of loss of job, even though no objective reduction in income has taken place.

INDICES OF DEPRIVATION IN THE WORK-UNEMPLOYMENT ROLE

In modern American society, work is described as having certain "universal" functions: it provides money, regulates life activity, offers status or social identification, permits association with others, and makes available a meaningful life experience (e.g., Tausky and Piedmont, 1967). Without necessarily accepting the validity of such sweeping generalizations for all levels of the occupational spectrum, one can, nevertheless, ask: what happens to the work-related satisfactions and fulfillment of needs as a man loses his job and experiences unemployment and job change? The purpose of the measures in this section is to help us answer this question.

In developing the relevant measures, we were guided by several objectives: a) they should cover the range of relevant dimensions; b) they should be appropriate whether the man was employed or unemployed; and c) the measures should be relatively simple and brief. The literature on job satisfactions and motivations (e.g., Centers and Bugenthal, 1966; Herzberg et. al., 1957; Robinson et. al., 1967; Vroom, 1964) was utilized to establish relevant dimensions, but the specific job satisfaction measures

Table 4.2 Relative economic change of the men as they go through the five phases of the job loss experience.

Cases and subsets	Means by phases* (standard scores) Anticipation	Termination	6 Months	12 Months	24 Months
All cases	-0.11	0.28	-0.03	0.14	0.00
Baker (urban plant)	-0.28	-0.34	-0.21	-0.19	-0.09
Dawson (rural plant)	0.03	0.83	0.10	0.41	0.07
Less unemployment	-0.18	-0.27	-0.24	0.25	-0.24
More unemployment	-0.12	0.72	0.12	0.05	0.21
Fewer job changes	0.02	0.33	-0.02	0.24	0.14
More job changes	-0.37	0.16	-0.09	0.01	-0.19
Low social support	-0.18	0.24	-0.03	0.13	-0.05
High social support	-0.06	0.28	-0.01	0.16	0.04
Low social support &					
Less unemployment	-0.22	-0.30	-0.29	0.24	-0.51
More unemployment	-0.17	0.84	0.28	-0.01	0.47
High social support &					
Less unemployment	-0.14	-0.24	-0.17	0.25	0.07
More unemployment	-0.08	0.64	0.00	0.09	0.03
Low social support &					
Fewer job changes	-0.09	0.32	-0.09	0.40	0.03
More job changes	-0.38	0.11	0.07	-0.36	-0.24
High social support &					
Fewer job changes	0.16	0.34	0.07	0.05	0.28
More job changes	-0.36	0.19	-0.20	0.26	-0.16

* High scores indicate high relative economic change.

Table 4.3 Indicators of "Deprivation" in the work role as the men go through the five phases of the study.

Deprivation scales+	Means by phases* (standard scores) Anticipation	Termination	6 Months	12 Months	24 Months
Security about the future					
All cases	0.44	0.25	-0.03	0.04	0.02
Baker	0.16	0.06	-0.08	0.26	0.12
Dawson	0.68	0.42	0.01	-0.15	-0.05
Getting ahead in the world					
All cases	-0.20	0.18	-0.07	-0.10	-0.42
Baker	-0.36	-0.36	0.06	0.00	-0.34
Dawson	-0.05	0.63	-0.16	-0.18	-0.48
Respect from others					
All cases	0.10	0.16	-0.07	0.09	-0.35
Baker	0.09	-0.09	0.05	0.10	-0.20
Dawson	0.12	0.36	-0.17	0.08	-0.47
Use one's best skills					
All cases	0.18	1.07	0.45	0.53	0.17
Baker	-0.03	0.47	0.57	0.60	0.14
Dawson	0.36	1.55	0.36	0.48	0.19
Things are interesting					
All cases	0.16	0.31	0.14	0.09	-0.06
Baker	0.06	0.36	0.55	0.25	0.15
Dawson	0.25	0.28	-0.17	-0.04	-0.22
Summary scale					
All cases	0.25	0.57	0.05	0.11	-0.15
Baker	-0.04	0.45	0.20	0.26	0.08
Dawson	0.49	0.66	-0.07	-0.01	-0.31

* High scores indicate a high sense of deprivation, i.e., a greater gap between "desired" and "actual".

+ The difference between actual and desired.

were deemed unsuitable since they were usable only when a man was working.

The final instrument contained 12 dimensions: 1) How physically active are you? 2) How much of your time is filled with things to do; how busy are you? 3) Do you have a feeling of security when you think about the future; and how much security do you feel about the future now? 4) How much do you feel you are getting ahead in the world now? 5) How much do you feel the things you do now are interesting? 6) How much do you get a chance to use the skills you are best at in what you do? 7) How much can you do things your way and decide what to do next? 8) How much opportunity is there for you to learn new things or gain new skills? 9) In general, how much authority and responsibility do you have? 10) How much do you get a chance to talk with people around you and enjoy yourself? 11) How much are you able to discuss your problems with the people around you when you are feeling low or when something bothers you? 12) How much do you think you are doing important things, so others notice you and respect you for what you do? For each of these 12 dimensions, the man was asked to rate his current life situation ("how things look to you now"). In addition, for the same 12 dimensions the man was also asked to indicate "how you would like things to be." Answers were given on the same six-point rating scale and direct computation of difference scores was possible. Each score thus reflects the difference between the actual and the desired situation. The measures will be referred to as "deprivation" indices, since they reflect degree of goal attainment, rather than being the typical satisfaction measures ("...how satisfied are you..."), asking for direct assessment.

In the data presentation which follows, six measures will be selected for detailed analysis: a) the five dimensions involving security about the future, getting ahead, getting respect, using one's best skills, and doing interesting things; b) a total scale combining all 12 dimensions. The selection of these dimensions was guided partly by a review of the literature on work and mental health, including observations on unemployment (Kasl, 1974; Tausky and Piedmont, 1967).

The data on controls reveal the following: a) There are no significant trends over time, except one: on deprivation with regard to "getting respect" the controls go down (less deprivation) from Phase 1 to Phase 2. This may be a "chance" finding or a true interview effect. b) There are no significant rural-urban differences, except one involving this same scale: rural controls report more deprivation on getting respect than urban controls. Standard scores on cases will be computed accordingly, taking this difference into account, by using urban controls as the referent for urban cases and rural controls for rural cases. c) The temporal stability for these scales ranges from $r = 0.38$ for deprivation on "doing interesting things" to $r = 0.63$ for the summary scale (mean of $r = 0.50$ for all 6 scales). d) The intraphase correlations of the five dimensions with each other range from $r = 0.20$ to $r = 0.43$ (mean $r = 0.31$); the average correlation of the five dimensions with the summary scale (part-whole correlations) is $r = 0.61$. e) These scales are basically uncorrelated with objective data such as age, education, hourly wage, years of seniority, and so on. They do, however, show modest

negative association with Social Support: correlations between r = -0.08 to r = -0.45, with a mean r = -0.30.

The basic data on phase to phase fluctuations for cases are presented in Table 4.3. The first dimension reflects feelings of insecurity about the future. Interestingly, the only effect seen is at Dawson, which during Anticipation is significantly greater than Baker ($P < 0.05$) and than controls ($P < 0.005$); at Termination, the Dawson men are still above controls ($P < 0.05$). The remainder of the phases show random fluctuations around controls' mean. It thus appears that concern over the future was seen only in the rural setting and was primarily an anticipatory reaction, since there is a decline from Phase 1 to Phase 2 even though most men are unemployed at that time.

The second dimension reflects a sense of setback in one's general struggle to get ahead economically and occupationally. At Anticipation, Baker men start somewhat below controls ($P < 0.05$), but do not show significant fluctuations over time. For Dawson, the rise from Anticipation to Termination and the decline from Termination to 6 Months are highly significant ($P < 0.001$) suggesting a short term effect only. By 24 Months, Dawson men are below where they were at Anticipation ($P < 0.025$), suggesting that to these men just getting through the whole job loss experience successfully might have seemed like progress, like "getting ahead."

The third dimension is relevant to the hypothesis that the men who lose their jobs and become unemployed may feel that they have thereby lost the respect of the people who are important to them. The results in Table 4.3 do not seem to provide much support for this proposition. In both companies the findings are similar: at 24 Months, the cases are below where they were at the earlier phases ($P < 0.001$ for difference between the mean of the first four phases and 24 Months). Stated another way, during Phases 1-4, the cases hover around the controls' mean and then drop to below-than-expected level at 24 Months. Overall, then, the results are consistent with the interpretation of no short term loss in perceived respect and a possible long term gain, once they have successfully survived the whole experience.

The fourth dimension is relevant to the theoretical position that the use of one's skills is an important component of the work role. The data in Table 4.3 reveal that the men in both companies have elevated levels during the middle three phases and do not return to near normal levels until 24 months. The increase from Anticipation to Termination is particularly striking for Dawson men (significantly steeper, $P < 0.025$, than Baker). These findings suggest that this variable is sensitive to both being unemployed and to probationary reemployment, i.e., having a new job on which the skills from the previous job may not be relevant.

The fifth dimension reflects the sense of boredom versus carrying out activities which can engage one's interests, and is relevant to the general hypothesis that the work role is one source of meaningful activities which contribute to a person's well-being and satisfaction.

The findings in Table 4.3 do not reveal any striking effects of the job loss experience. Baker men show mildly elevated levels of boredom during the middle three phases; the peak at 6 months (significantly greater than values at Anticipation or 24 months, ($P < 0.05$) suggests a closer association with new employment than with being unemployed. Dawson men show mildly higher levels during the first two phases, but obviously no increase with loss of employment or probationary reemployment.

Before discussing the findings concerning the composite scale, we shall briefly summarize the data on the other seven dimensions not included in Table 4.3. The results with only three of these scales merit some comment: a) On the deprivation scale involving "how busy are you", Dawson men show normal levels, except for a sharp elevation at Termination (higher than any other phase mean, $P < 0.01$); this suggests a short-term effect of being unemployed. Baker men do not show this pattern or significant fluctuations. b) On the two scales involving deprivation in social supportive interaction ("chance to talk with people," "...able to discuss your problems"), Baker men show elevated levels during the first two phases (significantly greater, $P < 0.05$, than controls, than Dawson men, and than their own values for later phases). This suggests that the men in the urban setting, as they were going through the most difficult part of the experience (anticipation of plant closing, unemployment or probationary reemployment) had a high sense of social isolation, which was not experienced by the men in the rural setting.

The summary scale in Table 4.3 combines 12 individual dimensions which, though moderately intercorrelated, have shown somewhat different patterns of fluctuation over the five phases. Thus while this scale is a useful general index of deprivation in a number of valued dimensions pertinent to the work role, it is not an adequate substitute for the results with the individual dimensions. The patterns of fluctuations are different in the two companies. In Baker, there is no anticipation effect, but a rise between first and second phases, and a gradual return to normal levels. In Dawson, there is an anticipation effect (their mean greater than for Baker men or controls, $P < 0.05$) and a slight further rise at Termination; normal levels are reached by 6 Months and 12 Months, with the last phase indicating levels somewhat lower than expected.

Before leaving Table 4.3, one more issue will be discussed briefly. The deprivation scales, as noted, reflect the difference between actual and desired situation. Hence, a change in deprivation could be a function of change in one or the other, or both. An analysis of the phase means for the two components separately reveals that the changes in deprivation are mostly a function of changes in description of actual situation rather than of desired situation; that is, the desired amount on a particular dimension tends to be much more stable over time. However, there appear to be a few exceptions: 1) On two dimensions, getting ahead and feelings of respect, Baker men have a mild tendency to lower the desired levels with later phases, thereby reducing the discrepancy score and perhaps understating the adverse effects of the experience. Of course, change in the desired (or aspired) level of a dimension may reflect a realistic shift in goals and aspirations, or it may indicate a defensiveness

(conscious or unconscious) designed to make the person's life situation less threatening. This distinction, fuzzy as it is at the conceptual level, is impossible to pin down operationally, given the limitations of structured self-report in an interview setting. 2) On the dimension, ...able to discuss your problems, Baker men show high levels during the first two phases on both actual and desired components; during Phases 3-5, there is a substantial reduction, again in both components. Dawson men show slight changes in the opposite direction: with later phases they report somewhat higher levels on both actual and desired levels of opportunity to discuss their problems. It thus appears that on this one dimension, the desired component fluctuates as much as the actual description of the man's situation; this is particularly true in Baker, where in the later phases the men lowered the desired levels to go along with their perceptions of lowered actual opportunity to discuss their problems with others.

Table 4.4 presents the data for the same six scales as the previous table, but using now Amount of Unemployment as the control variable. On the first dimension, security about the future, the men with less unemployment do not show significant fluctuations (the change from Anticipation to Termination is nearly significant, $P < 0.10$) and certainly no changes after Termination. Men with more unemployment show an anticipation effect (the first phase mean greater than controls, ($P < 0.005$) and remain high at Termination (now also significantly higher, $P < 0.005$, than men with less unemployment); they drop down between Termination and 6 Months ($P < 0.025$) and remain near normal levels.

On the second dimension, getting ahead men with less unemployment are are below the controls ($P < 0.05$) and the other cases ($P < 0.10$) at Anticipation and increase this separation at Termination ($P < 0.001$) for both comparisons). The change from Termination to 6 Months is a temporary increase ($P < 0.005$), but with the last two phases the men are roughly back to their first phase levels. Men with more unemployment start out at normal levels, show a sharp rise at Termination and a prompt decline at 6 Months ($P < 0.001$ for both changes); at 24 Months they are about like the other cases who had less unemployment.

On the next dimension, respect from others, the overall effect presented formerly in Table 4.3 for the cases is now seen to apply primarily to the men with more unemployment: they are relatively high throughout the first four phases, but by 24 Months they come down to below the level of men with less unemployment. The change between 12 Months and 24 Months is highly significant ($P < 0.001$) and the drop is steeper than the comparable small change for the men with less unemployment ($P < 0.05$).

Deprivation on "chance to use one's best skills" shows a rather clear cut effect of amount of unemployment: the two groups start out at about the same level but at Termination the men with more unemployment are higher ($P < 0.01$). This difference is maintained during later phases but is no longer reliable.

Table 4.4 Indicators of deprivation in the work role, controlling on amount of unemployment, as the men go through the five phases.

Deprivation scales,+ and amount of unemployment	Means by phases* (standard scores)				
	Anticipation	Termination	6 Months	12 Months	24 Months
Security about the future					
Less unemployment	0.25	-0.16	-0.18	-0.16	-0.11
More unemployment	0.68	0.68	0.11	0.23	0.14
Getting ahead in the world					
Less unemployment	-0.39	-0.58	-0.10	-0.32	-0.48
More unemployment	0.05	0.91	-0.03	0.12	-0.36
Respect from others					
Less unemployment	-0.04	0.01	-0.05	-0.15	-0.28
More unemployment	0.35	0.35	-0.05	0.32	-0.42
Use one's best skills					
Less unemployment	0.22	0.61	0.41	0.36	-0.03
More unemployment	0.25	1.61	0.54	0.70	0.35
Things are interesting					
Less unemployment	0.06	-0.13	0.36	0.06	-0.02
More unemployment	0.36	0.72	-0.06	0.13	-0.10
Summary scale					
Less unemployment	0.03	-0.07	0.01	-0.06	-0.24
More unemployment	0.55	1.19	0.06	0.28	-0.06

* High scores indicate a high sense of deprivation, i.e., a greater gap between desired and actual.

+ The difference between actual and desired.

Table 4.5 Indicators of deprivation in the work role, controlling on employment status at time of interview.

Deprivation scales, mean changes and significances	Amount of change* from Anticipation to Termination for men who at second phase are: Reemployed (N = 47)	Amount of change* from Anticipation to Termination for men who at second phase are: Unemployed (N = 53)	Amount of change* from Termination to 6 Months for men who go from: Empl. to Empl. (N = 43)	Amount of change* from Termination to 6 Months for men who go from: Unempl. to Reempl. (N = 41)	Amount of change* from Termination to 6 Months for men who go from: Unempl. to Unempl. (N = 12)	Amount of change* for all transitions from unemployment at one phase to reemployment at the next phase (N = 50)	Amount of intra-person difference between all occasions when employed and when unemployed** (N = 50)
Security about future							
Mean change+	-0.21	-0.17	-0.18	-0.60	0.28	-0.43	-0.54
Significance of change	n.s.	n.s.	n.s.	<0.025	n.s.	<0.05	<0.005
Significance of group difference	n.s.			<0.05		...	...
Getting ahead							
Mean change+	0.00	0.71	0.24	-0.95	0.09	-0.87	-0.96
Significance of change	n.s.	<0.001	n.s.	<0.001	n.s.	<0.001	<0.001
Significance of group difference	<0.025			<0.005		...	...
Respect from others							
Mean change+	-0.42	0.48	0.11	-0.72	0.26	-0.48	-0.52
Significance of change	<0.05	n.s.	n.s.	<0.01	n.s.	<0.05	<0.05
Significance of group difference	<0.025			<0.025		...	...
Use one's best skills							
Mean change+	0.18	1.38	-0.06	-1.49	0.31	-1.31	-1.26
Significance of change	n.s.	<0.001	n.s.	<0.001	n.s.	<0.001	<0.001
Significance of group difference	<0.01			<0.001		...	...
Things are interesting							
Mean change+	-0.17	0.43	0.42	-0.57	-0.95	-0.32	-0.61
Significance of change	n.s.	n.s.	:0.05	<0.05	n.s.	n.s.	<0.005
Significance of group difference	n.s.			n.s.		...	...
Summary scale							
Mean change+	-0.04	0.55	-0.13	-1.01	-0.28	-0.86	-0.94
Significance of change	n.s.	<0.01	n.s.	<0.001	n.s.	<0.001	<0.001
Significance of group differences	<0.05			<0.01		...	...

* Positive score indicates an increase in deprivation over time; negative score indicates a decrease in deprivation.
**Difference computed by taking values when employed minus values when unemployed; data for Anticipation not included.
+ In standard scores

Controlling on amount of unemployment on the next dimension, doing interesting things, does not seem to clarify the picture very much. Men with more unemployment show elevated levels at Termination and then return promptly to normal levels at 6 months. Men with less unemployment do not show statistically reliable fluctuations, nor does their peak at 6 months have a ready explanation.

Results with the summary scale reveal the following differences associated with amount of unemployment: men with more unemployment are higher than the other cases at Anticipation ($P < 0.05$) and at Termination ($P < 0.001$), and show a steeper rise between the first and second phase ($P < 0.05$). Otherwise, the two groups fluctuate around normal levels and are not significantly different from each other.

Since the scales we are dealing with reflect deprivation in the work role, it is important to also note the results of analyses in which employment status at time of interview is the control variable. When means for Termination are computed for men who are at that time employed versus those unemployed, the differences in means are of about the same magnitude as the separation of the two groups when amount of unemployment is used as the control variable (Table 4.4). The one exception is on respect from others, where the mean for the employed men (-0.23) is now clearly lower ($P < 0.01$) than the mean for the unemployed men (0.50). Other analyses were carried out which examined changes over time. These are summarized in Table 4.5. The first set of changes deals with the transition from Anticipation to Termination: some 47 men go on to a new job while 53 others go on to unemployment. The men who go on to reemployment mostly show a small drop in deprivation which is not significant; the one exception, feelings of respect, suggests that prompt reemployment is accompanied by an increased perception of respect from others. The men who go on to unemployment at Termination go up in deprivation--a change which is significant in most instances. Moreover, the differences in the changes between the two groups are reliable in four out of the six scales. The results on feelings of security are the only ones showing a different pattern, which suggests that the Anticipation phase was accompanied by a good deal of insecurity and that finding prompt reemployment did not reduce this insecurity any sooner than did remaining unemployed.

The second set of runs in Table 4.5 concerns the change from Termination to 6 Months. Three groupings are possible here: men who remain employed, men who have now found a new job, and men whose situation is still unsettled. This last group of 12 men includes 10 who are remaining unemployed and 2 who were employed at Termination and are now unemployed again. The test of significance of difference among these three groups is a post-ANOVA test for a specific linear trend: namely that men becoming re-employed will show the largest drop, followed by men who are continuing their employment and should show little change, followed by men who are still unemployed and who might show some additional increases in deprivation. The data reveal that for all six scales the group of 41 men experiencing the transition from unemployment to reemployment goes down significantly in deprivation. Moreover, the differences among the three groups are significant for five of the six scales, even though sometimes

the two stable groups (remaining employed, remaining unemployed) reverse themselves from the predicted order. The one scale for which the predicted linear trend is clearly not supported, doing interesting things, reveals a large drop in deprivation among those remaining unemployed and an increase in deprivation among those continuing to stabilize their employment situation ($P < 0.01$, for the difference between the two groups). This suggests that continued unemployment need not be accompanied by continued feelings of boredom, and, conversely, that finding a job quickly and holding on to it need not make one feel that one's life has become more interesting.

The remainder of the results in Table 4.5 is somewhat redundant with the data already presented for the 41 men who go from unemployment to reemployment between Termination and 6 Months. The next to the last column in Table 4.5 includes the data on nine additional men who experience the same transition later (between 6 and 12, or 12 and 24 months). For all six scales the mean change is somewhat smaller, suggesting that the transition to reemployment after prolonged unemployment is accompanied by a smaller drop in deprivation than is the transition after briefer unemployment. The last column in Table 4.5 simply pools the data for all phases when a man was employed and when he was unemployed, rather than just looking at a pair of adjacent visits during which the reemployment transition took place. However, the magnitude of the differences in the last column is generally comparable to the previous column and the data add nothing new. We might note, in passing, that these last two columns naturally pertain only to men who underwent an employment change (and were available for testing) following Termination.

The data in the last column of Table 4.5 were also examined separately for the two companies. In all instances, the men in the rural setting (Dawson) showed much larger differences than did the men in the urban setting (Baker); for three scales ("feelings of security," "feelings of getting ahead," and "chance to use one's best skills"), these differences in effect of unemployment led to a greater sense of deprivation in the work role among the rural men. This is consistent with observations that the blue collar workers in rural settings have a stronger attachment to the work role (Turner and Lawrence, 1965).

Table 4.6 presents the data on the six deprivation scales, using Number of Job Changes as the control variable. The results do not reveal a strong or consistent effect of this control variable on the pattern of phase-to-phase fluctuations. There is some tendency for the men with fewer job changes to stabilize at 24 months somewhat below the level for men with more job changes. However, significance testing reveals only one reliably differential change between the two groups: on doing interesting things the change from Anticipation to 24 Months is an increase for the men with more job changes (reflecting an increase in experienced deprivation) and a decrease for the others ($P < 0.025$ for the difference in changes).

Table 4.7 presents the data on Social Support. It will be recalled that among the controls all six variables were modestly negatively associated

Table 4.6 Indicators of deprivation in the work role, controlling on numbers of job changes, as the men go through the five phases.

Deprivation scales,+ and number of job changes	Means by phases* (standard scores)				
	Anticipation	Termination	6 Months	12 Months	24 Months
Security about the future					
Fewer job changes	0.53	0.28	0.16	0.13	-0.13
More job changes	0.42	0.32	-0.26	-0.05	0.22
Getting ahead in the world					
Fewer job changes	-0.10	0.32	-0.14	0.05	-0.48
More job changes	-0.22	0.06	0.03	-0.26	-0.34
Respect from others					
Fewer job changes	0.09	0.16	0.04	0.05	-0.44
More job changes	0.26	0.18	-0.16	0.18	-0.24
Use one's best skills					
Fewer job changes	0.33	1.24	0.59	0.55	0.14
More job changes	0.14	1.04	0.34	0.54	0.21
Things are interesting					
Fewer job changes	0.39	0.48	0.18	0.10	-0.21
More job changes	0.03	0.09	0.10	0.12	0.12
Summary scale					
Fewer job changes	0.40	0.68	0.08	0.15	-0.25
More job changes	0.18	0.47	-0.02	0.10	-0.01

* High scores indicate a high sense of deprivation, i.e., a greater gap between desired and actual.

+ The difference between actual and desired.

Table 4.7 Indicators of deprivation in the work role, controlling on Social Support, as the men go through the five phases.

Deprivation scales,+ and social support	Means by phases* (standard scores) Anticipation	Termination	6 Months	12 Months	24 Months
Security about the future					
Low social support	0.65	0.54	0.20	0.05	0.17
High social support	0.24	0.01	-0.26	0.03	-0.11
Getting ahead in the world					
Low social support	0.09	0.44	0.17	0.05	-0.10
High social support	-0.43	-0.01	-0.30	-0.25	-0.71
Respect from others					
Low social support	0.57	0.32	0.23	0.22	-0.24
High social support	-0.27	0.01	-0.37	-0.04	-0.45
Use one's best skills					
Low social support	0.56	1.11	0.96	0.56	0.49
High social support	-0.14	1.03	-0.05	0.51	-0.12
Things are interesting					
Low social support	0.81	0.46	0.52	0.30	0.06
High social support	-0.40	0.18	-0.24	-0.11	-0.18
Summary scale					
Low social support	0.67	0.67	0.45	0.24	0.16
High social support	-0.14	0.47	-0.35	-0.02	-0.41

* High scores indicate a high sense of deprivation, i.e., a greater gap between desired and actual.

+ The difference between actual and desired.

with Social Support. Stated in terms of the magnitude of the net difference between controls who are low versus those who are high on social support, the values for the six scales listed in order of Table 4.6 are: 0.46, 0.69, 0.32, 0.66, 0.58, and 0.80. (Thus, for example, the mean standard score on the summary scale for controls low on social support is 0.38 and -0.42 for controls high on social support, with a net difference of 0.80).

The results in Table 4.7 may be summarized as follows: 1) One scale, feelings of getting ahead, reveals no significant effect of social support; that is, the two groups maintain a separation of about the same magnitude as controls, but otherwise show comparable phase-to-phase fluctuations. 2) There are three scales which show a significantly smaller difference between high versus low social support cases than would be expected from control data: feelings of security (12 months), use of skills (12 months), and the summary scale (Termination and 12 Months). 3) There are two scales on which the two groups show a greater-than-expected difference: respect from others and doing interesting things, both at Anticipation. In general, then, there is some tendency for social support to buffer the cases against effects of stress, but only at Anticipation. On the other hand, there is some tendency for the stress of the experience to override the effects of social support, particularly at Termination and 12 Months. This combination of findings leads to the consequence that in three instances (respect from others, doing intersting things, and the summary scale) it is the high social support group which experiences significantly greater increase in deprivation between Anticipation and Termination.

Table 4.8 presents the data on the interaction between Social Support and Amount of Unemployment. At Anticipation, the results appear to provide strong support for the hypothesis that the combination of low social support and more unemployment leads to particularly high deprivation. The interaction term is significant in all but two instances (feelings of security, getting ahead), revealing that the high levels of deprivation in the low social support-more unemployment group is more than a function of the simple additive effects of the two control variables. However, the support for the hypothesis is more apparent than real since at Anticipation the effects of amount of unemployment cannot as yet be operating. Thus what the results really suggest is that among men with low social support, high initial levels of deprivation tend to be indicative of subsequent greater amount of unemployment; among men high on social support, no such relationship is apparent. This predictive association among men with low social support could be interpreted in at least two ways: 1) At Anticipation the men were able to predict reasonably well the difficulty they might have in finding a new job, and the more difficult they thought it would be, the more they felt a sense of deprivation even before plant closing. This interpretation might be suitable for some scales (e.g., feelings of security, getting ahead, respect) but probably not for others (e.g., chance to use one's best skills). 2) At Anticipation, some men were already reacting with a sense of deprivation or dissatisfaction, and such anticipatory high levels of deprivation were based on correct

Table 4.8 Indicators of deprivation in the work role, controlling on Amount of Unemployment and on Social Support, as the men go through the five phases.

Deprivation scales,+ unemployment, and social support	Means by phases* (standard scores)				
	Anticipation	Termination	6 Months	12 Months	24 Months
Security about future					
Low social support					
Less unemployment	0.38	-0.29	0.02	-0.19	0.08
More unemployment	1.16	1.46	0.35	0.35	0.26
High social support					
Less unemployment	0.09	0.00	-0.43	-0.11	-0.34
More unemployment	0.30	0.09	-0.07	0.13	0.05
Getting ahead					
Low social support					
Less unemployment	-0.25	-0.59	0.10	-0.21	-0.16
More unemployment	0.57	1.60	0.26	0.37	-0.02
High social support					
Less unemployment	-0.56	-0.56	-0.35	-0.46	-0.86
More unemployment	-0.37	0.37	-0.26	-0.09	-0.61
Respect from others					
Low social support					
Less unemployment	-0.09	-0.05	-0.03	-0.14	-0.23
More unemployment	1.40	0.79	0.58	0.65	-0.26
High social support					
Less unemployment	0.02	-0.08	-0.08	-0.15	-0.34
More unemployment	-0.46	0.01	-0.53	0.05	-0.53
Use one's best skills					
Low social support					
Less unemployment	0.28	0.49	0.67	0.33	0.01
More unemployment	1.00	1.80	1.34	0.83	0.93
High social support					
Less unemployment	0.14	0.74	0.08	0.38	-0.17
More unemployment	-0.36	1.46	-0.08	0.60	-0.08
Things are interesting					
Low social support					
Less unemployment	0.36	-0.16	0.55	0.06	-0.06
More unemployment	1.40	1.18	0.44	0.58	0.21
High social support					
Less unemployment	-0.31	-0.11	0.13	0.05	0.03
More unemployment	-0.47	0.36	-0.44	-0.23	-0.33
Summary scale					
Low social support					
Less unemployment	0.18	-0.16	0.18	-0.14	-0.11
More unemployment	1.35	1.60	0.68	0.71	0.46
High social support					
Less unemployment	-0.15	0.04	-0.21	0.05	-0.40
More unemployment	-0.15	0.84	-0.42	0.06	-0.43

* High scores indicate a high sense of deprivation, i.e., a greater gap between desired and actual.

\+ The difference between actual and desired.

predictions of their subsequent difficulty in finding a new job. This interpretation seems suitable to any of the scales in Table 4.8.

It is, of course, difficult to choose between these alternative explanations (see Chapter 8 for an analysis of predictors of amount of unemployment). However, the following suggestive analysis was carried out. We took the index of employability (consisting of four variables: age, education, nurse's rating of health from health history at initial visit, and highest Duncan code level of previous job), which is a reasonable predictor of number of weeks unemployed during the first year after plant closing ($r = -0.39$, $P < 0.001$), and examined its association with deprivation on feelings of respect from others. This is the scale which in Table 4.8 shows at Anticipation the largest separation between less and more unemployment among men with low social support. Then we reasoned that if the first interpretation is the better one, we should observe some association between low employability and high deprivation. However, no such negative association was observed, either for men low or high on social support ($r = 0.06$ and $r = 0.09$, respectively). By this reasoning it would appear that the second interpretation is therefore more plausible.

At Termination, the group of men with low social support and more unemployment again stand out as those with the highest means (interaction significant for the first two scales and the summary scale). However, this is mostly a function of their initially high values at Anticipation; only in one instance (deprivation on feelings of security) do the change scores from Anticipation to Termination also show a significant interaction. With later visits the four groups tend to converge more and more; by 24 months none of the scales shows significant interaction. These findings can be restated another way: a) Men with low social support and more unemployment undergo the greatest fluctuations across phases: they start out high, generally go up some more, but eventually come down to near normal levels (except on chance to use one's best skills); b) Men with high social support and more unemployment also exhibit some large fluctuations across phases, but these mostly involve somewhat elevated levels at Termination; c) Men with less unemployment, irrespective of social support, tend to show only modest and somewhat inconsistent phase-to-phase fluctuations.

Let us now turn to Table 4.9 which gives the data on interaction between Social Support and Number of Job Changes. At Anticipation no significant interactions are evident, except for one deprivation scale, feelings that things one is doing are interesting. At Termination, only the main effect due to social support is apparent; this is understandable since additional job changes have not yet taken place. However, changes from Termination to later phases fail to provide us with any evidence for an interaction. Thus the small effects of number of job changes, seen in Table 4.6, are in no way clarified or sharpened by the introduction of a second control variable, Social Support.

It might be interesting to consider briefly the relationship between the two indices of economic state and the six deprivation scales. At

Anticipation, none of the scales shows a significant association with Relative Economic Deprivation. During the other four phases, all scales but one (feelings of respect from others) show moderate correlations (mostly in the high 0.20's and low 0.30's, and a mean correlation of 0.32; a correlation of 0.26 is significant, $P < 0.01$). The picture is somewhat similar for Relative Economic Change: no significant correlations for Anticipation phase and for feelings of respect from others at any phase. However, for later phases, the significant correlations appear at Termination only: the five correlations range between 0.27 and 0.40 with a mean of 0.35. Then at 6 months and later phases, the correlations drop back into insignificance.

Let us, finally, consider briefly the data on the third company, Cryland. The deprivation scale, chance to use one's best skills, shows the strongest effects: at Phase 1 the men have a mean of 0.49, go up strikingly during the next two phases (means of 1.32 and 1.37) and then come down somewhat at Phase 4 (0.98). At all occasions, the Cryland men are significantly above the controls. The pattern of means for the Summary scale is similar: 0.79, 1.11, 1.28, and 0.88; again, all means are significantly above controls. The other scales also show peaks at second and third phases, but the means are not as high. The one exception to this pattern is the scale on feelings of security about the future. The men start out only slightly elevated (0.23) but go up gradually so that by the 4th phase they are significantly above controls (mean 0.50, $P < 0.05$). These results would seem to suggest that going through prolonged uncertainty about one's place of employment and switching around to somewhat different jobs can lead to as strong a sense of deprivation in the work role as does the actual experience of plant closing and unemployment. Involuntary job changes within the same plant seem to have particularly strong effects on the sense of being able to utilize one's best skills.

INDICATORS OF MENTAL HEALTH AND WELL-BEING

The measures to be discussed next are intended to monitor changes in a number of areas broadly pertaining to mental health and well being. By the same token, these measures are <u>not</u> intended to do any of the following: a) permit diagnostic classification; b) lead to treatment-oriented interpretations (e.g., this high a score on this scale is "pathological" and calls for therapeutic intervention); c) allow assessment of social and role functioning. The purpose of the scales is to detect changes, presumably within the normal range, on a number of dimensions which have been of interest to previous investigators using a social-psychological approach to mental health (see French and Kahn, 1962).

A large pool of items was generated by considering well-known studies and measures (e.g., Buss, 1961; Gurin et. al., 1960; Langner and Michael, 1963), as well as indices used in our previous work (e.g., Hunt et. al., 1967; Kasl and Cobb, 1967 and 1969). Item analyses, including factor analyses, were carried out in order to maximize several goals: a) relative independence among scales, b) adequate internal consistency, c) homogeneity of content in the items and their interpretability (face

Table 4.9 Indicators of deprivation in the work role, controlling on Number of Job Changes and Social Support, as the men go through the five phases.

Deprivation scales,+ social support, and job changes	Means by phases* (standard scores)				
	Anticipation	Termination	6 Months	12 Months	24 Months
Security about future					
Low social support					
Fewer job changes	0.69	0.42	0.29	0.22	0.05
More job changes	0.91	0.84	-0.05	-0.17	0.40
High social support					
Fewer job changes	0.33	0.12	-0.01	0.02	-0.35
More job changes	0.10	-0.02	-0.41	0.04	0.11
Getting ahead					
Low social support					
Fewer job changes	0.10	0.46	0.21	0.28	-0.30
More job changes	0.25	0.44	0.12	-0.26	0.28
High social support					
Fewer job changes	-0.36	0.15	-0.60	-0.23	-0.70
More job changes	-0.54	-0.19	-0.03	-0.26	-0.72
Respect from others					
Low social support					
Fewer job changes	0.39	0.44	0.34	0.39	-0.35
More job changes	1.00	0.25	0.09	0.00	-0.06
High social support					
Fewer job changes	-0.29	-0.20	-0.36	-0.35	-0.56
More job changes	-0.20	0.14	-0.32	0.31	-0.35
Use one's best skills					
Low social support					
Fewer job changes	0.59	1.07	0.96	0.74	0.49
More job changes	0.71	1.28	1.00	0.36	0.47
High social support					
Fewer job changes	-0.02	1.44	0.09	0.34	-0.29
More job changes	-0.24	0.89	-0.09	0.69	0.04
Things are interesting					
Low social support					
Fewer job changes	0.69	0.53	0.47	0.52	-0.10
More job changes	1.20	0.36	0.55	-0.01	0.36
High social support					
Fewer job changes	0.01	0.43	-0.21	-0.42	-0.35
More job changes	-0.75	-0.09	-0.20	0.22	-0.03
Summary scale					
Low social support					
Fewer job changes	0.75	0.64	0.46	0.43	0.00
More job changes	0.73	0.79	0.33	0.0(	0.48
High social support					
Fewer job changes	-0.08	0.74	-0.43	-0.19	-0.56
More job changes	-0.21	0.24	-0.24	0.18	-0.28

* High scores indicate a high sense of deprivation, i.e., a greater gap between desired and actual.

\+ The difference between actual and desired.

validity), and d) comparability with already existing dimensions and scales.

The following nine scales will be used in detailed analyses. The data were collected using the card sort technique described in Chapter 2.

1. Depression (7 items): Things seem hopeless. I feel blue. I have more troubles than I can bear. I feel sad. I feel confused. I feel depressed. I feel unhappy most of the time.

2. Low Self Esteem (6 items): These days everything I try seems to go wrong. I feel as though nothing I do is any good. I sometimes feel that my life is not very useful. As a husband I do a good job these days (reversed). I am inclined to feel I am a failure. I feel the future looks bright (reversed).

3. Anomie (6 items): No one is going to care much about what happens, when you get right down to it. In spite of what some people say, the lot of the average man is getting worse, not better. You sometimes can't help wondering whether life is worthwhile anymore. Most people don't really care what happens to the next fellow. These days a person doesn't really know whom he can depend on. It is hardly fair to bring a child into the world the way things look now.

4. Anxiety-Tension (7 items): I often feel jittery. I am fidgety much of the time. I am worried. I feel nervous. I feel anxious. These days I am quite relaxed (reversed). I often feel tense.

5. Psychophysiological Symptoms (6 items): I am bothered by my heart beating hard. I am bothered by dizzy spells. I am bothered by shortness of breath when not exercising or working hard. I often feel cold. I feel healthy enough to carry out the things that I would like to do (reversed). I often have a pain in my neck or back at the end of the day.

6. Insomnia (2 items): I have trouble staying asleep. I have trouble falling asleep.

7. Anger-Irritation (7 items): I lose my temper easily. If someone doesn't treat me right, it annoys me. It makes by blood boil to have somebody make fun of me. I sometimes carry a chip on my shoulder. Even unimportant things sometimes irritate me. I often feel a little irritated or annoyed about things. I am likely to hold a grudge.

8. Resentment (5 items): When I look back on what's happened to me, I feel resentful. I don't seem to get what is coming to me. I feel I get a raw deal out of life. People ask too much of me. Other people always seem to get the breaks.

9. Suspicion (3 items): I commonly wonder what hidden reason another person may have for doing something nice for me. I used to think most people told the truth but now I know otherwise. I feel that others are laughing at me.

The above items were scattered throughout a pool of some 120 items. All were answered on a 5 point rating scale. An intuitive grouping of the nine scales would suggest three major conceptual domains, consisting of the first three, next three, and last three scales.

The data on controls reveal the following results: 1) There are no significant rural-urban differences. 2) Analysis of trends over time reveal three significant trends (anxiety-tension, anger-irritation, and suspicion), all showing a tendency for scores on later visits to be slightly lower. This is presumably an effect of repeated interviewing and will be taken into consideration in the analysis on cases. Its magnitude, however, is small: an average drop of about 0.10 (in standard scores) from one visit to the next. 3) The temporal stability for these nine scales ranges from 0.48 (suspicion) to 0.78 (anger-irritation) with a mean of 0.62. 4) The intra-phase correlations among the nine scales have a mean intercorrelation of 0.33. However, if the scale with the lowest correlations with other scales (insomnia, average $r = 0.15$) is removed, the average inter-correlation among the remaining eight scales is 0.38. It can thus be seen that the different scales measure somewhat overlapping but sufficiently different constructs or dimensions. 5) Correlations with age, education, and hourly pay reveal only 3 of the 27 correlations with values greater than ± 0.20: insomnia with education ($r = -.24$), resentment and suspicion with hourly pay (both $r = -0.24$). Correlations with social support range from -0.10 for suspicion to -0.42 for low self-esteem, with an average of -0.27.

The basic data on phase to phase fluctuations for cases are presented in Table 4.10. Regarding the first scale, depression, no significant changes over time are evident. The Dawson men start out higher than controls ($P < 0.05$) and remain high; the Baker men are somewhat lower at Anticipation and none of their later changes are significant.

Low self-esteem shows only one finding which is significant: from Anticipation to 24 Months, the Baker men go up while the Dawson men come down ($P < 0.025$) for difference in the two trends. The upward trend for the Baker men takes place between 12 and 24 months, when some of these men were experiencing additional periods of unemployment.

On the anomie scale, all cases show a drop from Anticipation to 24 Months ($P < 0.01$). Baker men start out lower than Dawson men, but the downward trend is evident in both companies. The data on anxiety-tension must be interpreted as showing no overall effect of the plant closing experience: the cases do show a downward trend (particularly between Anticipation and 6 Months), but this is not significantly different from the trend which the controls also showed on this scale.

Table 4.10 Indicators of mental health and well-being, by company, as the men go through the five phases.

Indicators of mental health, and company	Means by phases (standard scores)				
	Anticipation	Termination	6 Months	12 Months	24 Months
Depression					
All cases	0.35	0.30	0.21	0.33	0.22
Baker	0.18	0.19	-0.02	0.12	-0.06
Dawson	0.48	0.40	0.39	0.51	0.42
Low self-esteem					
All cases	0.15	0.08	0.04	0.04	0.14
Baker	-0.03	0.09	-0.07	-0.08	0.32
Dawson	0.30	0.06	0.12	0.13	0.02
Anomie					
All cases	-0.04	-0.13	-0.14	-0.22	-0.33
Baker	-0.26	-0.22	-0.35	-0.40	-0.47
Dawson	0.14	-0.06	0.03	-0.08	-0.23
Anxiety-tension					
All cases	0.12	0.01	-0.16	-0.09	-0.07
Baker	-0.04	-0.20	-0.38	-0.19	-0.20
Dawson	0.25	0.19	0.01	-0.02	0.02
Psychophysiological symptoms					
All cases	0.03	-0.21	-0.16	0.02	0.21
Baker	-0.36	-0.38	-0.36	-0.24	0.10
Dawson	0.37	-0.07	0.00	0.22	0.29
Insomnia					
All cases	-0.07	-0.18	-0.04	0.05	-0.07
Baker	-0.27	-0.31	-0.36	-0.10	-0.02
Dawson	0.11	-0.08	0.21	0.17	-0.10
Anger-irritation					
All cases	0.03	-0.17	-0.18	-0.19	-0.19
Baker	0.17	-0.01	-0.08	-0.13	0.02
Dawson	-0.10	-0.31	-0.26	-0.24	-0.34
Resentment					
All cases	0.15	0.09	-0.02	0.08	-0.10
Baker	-0.09	0.11	-0.24	-0.15	-0.43
Dawson	0.35	0.07	0.15	0.26	0.14
Suspicion					
All cases	-0.31	-0.52	-0.57	-0.39	-0.47
Baker	-0.42	-0.57	-0.84	-0.44	-0.50
Dawson	-0.22	-0.48	-0.36	-0.35	-0.45

The pattern of findings for psychophysiological symptoms reveals some significant differences, but not a clearly interpretable set of changes. Baker men remain below average for the first four phases and then go up ($P < 0.05$ for difference between average of first four phases and 24 Months). Dawson men, who are significantly higher at Anticipation than Baker men ($P < 0.01$), experience a drop between Anticipation and Termination ($P < 0.025$), and then start going up again with later phases. The data on insomnia reveal no significant changes and no suggestive pattern.

The anger-irritation scale shows a small downward trend which is not significantly different from the trend for controls. Hence, this scale fails to reveal any overall effects of the plant closing experience. Resentment does not show any significant differences; moreover, the pattern of changes is rather irregular and not comparable in the two companies.

The last scale, suspicion, shows a small trend downward, which was also seen among the controls. Otherwise, the only noteworthy finding is that the cases are significantly below controls on all occasions except Anticipation. This is the only scale presented so far in this chapter in which there appears to be a serious discrepancy between the norms derived from the controls and the data on the cases. We do not know the reason for this. However, it is possible to speculate that since the controls could not be recruited into the study with the clearcut rationale presented to the cases ("We are studying the plant closing experience"), they perhaps remained suspicious of the purposes of the study and of the content of the interviews.

Table 4.11 presents the data on the indices of mental health and well-being, using Amount of Unemployment as the control variable. At Anticipation, men with more unemployment start out somewhat higher (not significant) on depression than men with less unemployment. At Termination and 6 Months, the two groups are reliably different ($P < 0.05$) from each other; at 12 Months and 24 Months they are close to each other again; primarily because men with less unemployment experience increase in depression between 6 Months and 12 Months. The data for low self-esteem show a pattern of fluctuations highly similar to that for depression; however, at no point are the two groups significantly different from each other. The anomie scale reveals the group with less unemployment consistently below the group with more unemployment; this separation is significant for the middle three phases ($P < 0.01$). In summary, then, the first three scales in Table 4.11 tend to separate the two groups, especially at Termination and 6 Months. However, because the two groups differ somewhat already at Anticipation, not all of the difference in means during the middle phases can be unambiguously attributed to consequences of amount of unemployment. (See discussion of next table for additional analyses.)

On anxiety-tension the two groups start out at about the same level. Thus the significant difference at Termination ($P < 0.025$) is more

Table 4.11 Indicators of mental health and well-being, controlling on amount of unemployment, as the men go through the five phases

Indicators of mental health and well-being	Means by phases (standard scores)				
	Anticipation	Termination	6 Months	12 Months	24 Months
Depression					
Less unemployment	0.22	-0.04	-0.10	0.28	0.26
More unemployment	0.51	0.61	0.42	0.38	0.18
Low self-esteem					
Less unemployment	0.05	-0.16	-0.22	-0.11	0.17
More unemployment	0.25	0.27	0.21	0.17	0.12
Anomie					
Less unemployment	-0.24	-0.46	-0.45	-0.51	-0.50
More unemployment	0.10	0.17	0.11	0.06	-0.18
Anxiety-tension					
Less unemployment	0.17	-0.32	-0.36	-0.08	-0.04
More uenmployment	0.12	0.26	-0.04	-0.11	-0.10
Psychophysiological symptoms					
Less unemployment	-0.15	-0.39	-0.26	-0.11	0.14
More uenmployment	0.25	-0.03	-0.17	0.15	0.27
Insomnia					
Less unemployment	-0.05	-0.17	-0.20	0.06	-0.15
More unemployment	-0.13	-0.17	0.03	0.04	0.00
Anger-irritation					
Less unemployment	0.20	-0.07	-0.05	-0.06	0.19
More unemployment	-0.13	-0.27	-0.38	-0.31	-0.52
Resentment					
Less unemployment	-0.01	-0.12	-0.26	-0.06	-0.02
More unemployment	0.23	0.22	0.10	0.21	-0.16
Suspicion					
Less unemployment	-0.08	-0.75	-0.81	-0.53	-0.55
More unemployment	-0.58	-0.28	-0.36	-0.25	-0.40

clearly attributable to differences in the severity of the unemployment experience. By the last two phases, the groups are again quite similar. On psychophysiological symptoms the two groups are farthest apart at Anticipation (not significant), thus suggesting that amount of unemployment has no effect on this scale. Insomnia is another scale which reveals no sensitivity to amount of unemployment.

Anger-irritation reveals changes which are different from those noted so far. Specifically, the group with more unemployment starts out somewhat below the other group (not significant) and shows a downward trend (the change from Anticipation to 24 Months is significant, $P < 0.01$). The group with less unemployment shows minor fluctuations but no overall trend. At 24 Months the two groups are clearly separated ($P < 0.005$) with the group with less unemployment showing higher levels. The resentment scale reveals the group with more unemployment to be somewhat higher at all phases except the last one. However, none of the differences between the two groups is reliable. The last scale, suspicion, shows one finding which is reasonably attributable to amount of unemployment: between Anticipation and Termination, the group with less unemployment goes down, while the other group goes up ($P < 0.005$ for difference in trends). At Termination and 6 Months, the group with more unemployment is higher than the other group ($P < 0.05$), even though at Anticipation they were quite a bit lower. With later phases the two groups converge.

Let us now turn to results of analyses in which Employment Status at time of interview is the control variable. The major findings are presented in Table 4.12. The first set of changes deals with the transition from Anticipation to Termination according to whether the man goes on to reemployment or to unemployment. In this analysis, incidentally, the two groups are quite similar at Anticipation and thus initial differences do not complicate the interpretation of results, as they tended to do for some scales in Table 4.11. It can be seen in Table 4.12 that for five of the nine scales Depression, Low Self-Esteem, Anxiety-Tension, Anger-Irritation and Suspicion, there is a significant difference in the trends for both groups; moreover, in these same five instances the group that goes on to reemployment shows a significant decrease, while those becoming unemployed at Termination tend to show a small, nonsignificant increase.

The second set of runs in Table 4.12 concerns the transition from Termination to 6 Months. In no instance do we find significant support for the predicted relationships; namely, that men becoming reemployed will show a sizeable drop, men remaining unemployed will show some increase, and that those continuing on their new jobs will be intermediate. The small group of men who are remaining unemployed is particularly interesting since on most of the scales they show some decrease, even though they are continuing in a presumably stressful situation. (If one removes the 2 men out of 12 who are actually experiencing a transition from reemployment to unemployment, the magnitude of the observed decreases is greater. For example, the first five scales in Table 4.12 show an average decline of over a half of a standard deviation. But, of course, because of the small size of this group, these decreases are not significant except for one scale, Psychophysiological Symptoms.) It is interesting to contrast these findings with the data on the indices of economic state and on the deprivation scales.

Table 4.12 Indicators of mental health and well-being, controlling on employment status at time of interview.

Indicators, mean changes and significances	Amount of change* from Anticipation to Termination for men who at second phase are: Reemployed (N = 47)	Unemployed (N = 53)	Amount of change* from Termination to 6 Months for men who go from: Empl. to Empl. (N = 43)	Unempl. to Reempl. (N = 41)	Unempl. to Unempl. (N = 12)	Amount of change* for all transitions from unemployment at one phase to reemployment at the next phase (N = 50)	Amount of intra-person difference between all occasions when employed and when unemployed** (N = 50)
Depression							
Mean change+	-0.43	0.30	0.00	-0.16	-0.29	-0.24	-0.18
Significance of change	<0.05	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Significance of group difference	<0.01			n.s.		...	...
Low self-esteem							
Mean change+	-0.42	0.22	0.08	-0.02	-0.22	-0.08	-0.14
Significance of change	<0.05	n.s	n.s.	n.s	n.s.	n.s.	n.s.
Significance of group difference	<0.05			n.s.		...	...
Anomie							
Mean change+	-0.15	-0.02	0.5	0.14	-0.42	-0.05	-0.01
Significance of change	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Significance of group difference	n.s.			n.s.		...	...
Anxiety-Tension							
Mean change+	-0.45	0.18	-0.15	-0.21	-0.37	-0.31	-0.28
Significance of change	<0.025	n.s.	n.s.	n.s.	n.s.	<0.05	<0.05
Significance of group difference	<0.01			n.s		...	...
Psychophysiological Symptoms							
Mean change+	-0.30	-0.18	0.08	0.17	-0.61	0.17	0.30
Significance of change	n.s.	n.s.	n.s.	n.s.	<0.05	n.s.	<0.05
Significance of group difference	n.s.			n.s.		...	...
Insomnia							
Mean change+	-0.25	0.04	-0.06	0.26	0.30	0.09	0.14
Significance of change	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Significance of group difference	n.s.			n.s.		...	...

* Positive score indicates an increase over time; negative score indicates a decrease.
**Difference computed by taking values when unemployed minus values when employed; datea for Anticipation not included.
+ In standard scores.

(continued)

Table 4.12, continued.

Indicators, mean changes and significances	Amount of change* from Anticipation to Termination for men who at second phase are: Reemployed (N = 47)	Amount of change* from Anticipation to Termination for men who at second phase are: Unemployed (N = 53)	Amount of change* from Termination to 6 Months for men who go from: Empl. to Empl. (N = 43)	Amount of change* from Termination to 6 Months for men who go from: Unempl. to Reempl. (N = 41)	Amount of change* from Termination to 6 Months for men who go from: Unempl. to Unempl. (N = 12)	Amount of change* for all transitions from unemployment at one phase to reemployment at the next phase (N = 50)	Amount of intra-person difference between all occasions when employed and when unemployed (N = 50)
Anger-Irritation							
Mean change	-0.39	-0.01	-0.02	0.05	-0.04	-0.05	-0.02
Significance of change	<0.005	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Significance of group difference	<0.05			n.s.		...	...
Resentment							
Mean change	-0.11	0.01	-0.06	0.03	-0.20	-0.16	-0.05
Significance of change	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Significance of group difference	n.s.			n.s.		...	...
Suspicion							
Mean change	-0.55	0.17	-0.03	0.11	-0.22	0.19	0.28
Significance of change	<0.01	n.s.	n.s.	n.s.	n.s.	...	...
Significance of group difference	<0.025			n.s.		...	...

* Positive score indicates an increase over time: negative score indicates a decrease.
**Difference computed by taking values when unemployed minus values when employed; data for Anticipation not included.
+ In standard scores.

On Relative Economic Deprivation and Relative Economic Change, this group of men clearly continues to go up between Termination and 6 Months (over one half of a standard deviation). On the deprivation scales (see Table 4.5), the group shows some small increases (e.g., use of one's skills, feelings of security and respect), but gives also evidence of some declines (on feelings that things one is doing are interesting, and on some other components of the summary scale not shown in that table, such as feeling active and busy). And on the indicators of mental health and well-being, we have just seen that they mostly go down. The major conclusion would seem to be that it is not always wise to predict continued response to prolonged stress from the evidence of sensitivity to brief stress.

The last two columns in Table 4.12 examine: a) all transitions from unemployed status at one phase to employed status at next phase, and b) the within-person differences between occasions when unemployed and when employed, no matter what their sequence or duration. Only two variables show significant differences; for Anxiety-Tension the differences are in the expected direction (higher Anxiety-Tension when unemployed), while for psychophysiological symptoms the difference is an unexpected one--lower levels of these symptoms when a man is unemployed.

The data in the last column of Table 4.12 were also examined separately by company. Because of the differences in the unemployment experience by company setting, a little over two thirds of these men are from Dawson; hence, the numbers here get pretty small for significance testing. Nevertheless, the results are quite suggestive in that the men in the urban setting (Baker company) show larger differences: Resentment, -0.83; Anomie, -0.44; Depression, -0.41; Anger-Irritation, -0.37; Anxiety-Tension, -0.36; Low Self-Esteem, -0.32 (the inter-company differences for resentment and anomie are significant). On Psychophysiological Symptoms, the Baker men also show a larger effect (0.65), but for this scale, it is the values for occasions of unemployment which are lower. The contrast with the deprivation scales (Table 4.5) is an interesting one, since for those measures the measures the rural men (Dawson) showed the larger differences. It would almost appear that the rural men responded to the plant closing experience with work-role-related deprivation measures, while the urban men responded with more general mental health changes.

Let us now turn to Table 4.13 and the data on number of job changes as the control variable. The clearest effect of this variable can be seen for Depression: the two groups are fully equivalent at the first three phases. Then between 6 Months and 12 Months (when most of the job changes took place), the men with more job changes go up ($P < 0.05$), while the men with fewer job changes continue their gradual decline ($P < 0.05$ for difference in changes for the two groups). The results for Anomie are quite similar: the men with fewer job changes continue their decline between 6 Months and 12 Months, while men with more job changes go up during this period ($P < 0.05$ for the difference in trends). The remaining scales show a somewhat similar pattern of findings, in that all of them reveal the greatest excess for the men with more job changes to take place at 12 Months. And since these men at Anticipation are generally below the men with fewer job changes, we are in effect seeing an upward trend between Anticipation and

Table 4.13 Indicators of mental health and well-being, controlling on number of job changes, as the men go through the five phases.

Indicators of mental health and well-being	Means by phases (standard scores)				
	Anticipation	Termination	6 Months	12 Months	24 Months
Depression					
Fewer job changes	0.43	0.25	0.17	0.07	0.17
More job changes	0.32	0.38	0.16	0.70	0.28
Low self-esteem					
Fewer job changes	0.18	-0.08	-0.02	-0.03	0.05
More job changes	0.12	0.26	0.02	0.16	0.25
Anomie					
Fewer job changes	-0.09	-0.16	-0.24	-0.51	-0.52
More job changes	-0.01	-0.12	-0.07	0.16	-0.10
Anxiety-tension					
Fewer job changes	0.13	-0.04	-0.24	-0.20	-0.14
More job changes	0.18	0.02	-0.14	0.05	0.01
Psychophysiological symptoms					
Fewer job changes	0.21	-0.22	-0.24	-0.13	0.22
More job changes	-0.16	-0.20	-0.18	0.25	0.19
Insomnia					
Fewer job changes	0.02	-0.10	-0.12	-0.09	-0.23
More job changes	-0.23	-0.26	-0.05	0.26	0.12
Anger-irritation					
Fewer job changes	0.01	-0.23	-0.40	-0.40	-0.36
More job changes	0.09	-0.10	0.01	0.12	0.01
Resentment					
Fewer job changes	0.12	-0.06	-0.23	-0.12	-0.14
More job changes	0.08	0.16	0.12	0.31	-0.05
Suspicion					
Fewer job changes	-0.14	-0.72	-0.74	-0.65	-0.68
More job changes	-0.55	-0.28	-0.38	-0.09	-0.21

12 Months for the men with more job changes and a downward trend for the men with fewer job changes. Thus, for example, the increase on Suspicion between Anticipation and 12 Months for men with more job changes is significantly different ($P < 0.01$) from the decrease for the men with fewer job changes. A similar difference in trends is also evident for Psychophysiological Symptoms, Insomnia, Anger-Irritation, and Resentment ($P < 0.05$ or less for the four scales).

Table 4.14 presents the data on Social Support as the control variable. It will be recalled that among the controls, the nine mental health scales were found to show small to moderate negative associations with social support. Stated in terms of the magnitude of the net difference between controls low versus high on social support, the values for the nine scales listed in order of Table 4.14 are: 0.44, 0.68, 0.37, 0.11, 0.32, 0.41, 0.32, 0.60, and 0.80. In other words, low self-esteem and resentment show the largest differences due to social support, while Anxiety-Tension and Suspicion show the smallest differences.

At Anticipation, three scales show a significant ($P < 0.05$ or less) effect of social support: Depression, Anxiety-Tension, and Suspicion. And in each instance, the two groups show a larger difference than would be expected on the basis of control data alone. At Termination, most scales show some convergence of the three groups so that the net difference tends to be somewhat smaller than expected from data on controls. This means that on the three scales which showed an effect of social support at Anticipation (Depression, Anxiety-Tension, and Suspicion), the transition from Anticipation to Termination is accompanied by increases for high social support men and decreases for low social support men (difference in all three trends significant, $P < 0.05$).

With later visits, the two groups tend to diverge, again suggesting an effect of social support. At 12 Months, anomie, anxiety-tension, and suspicion show a significantly greater difference; at 24 Months, depression and anomie also show these significant differences.

Let us now turn to Table 4.15 which controls for Amount of Unemployment and Social Support. As in the case of our discussion of Table 4.8, the fact that the group of men low on social support and high on amount of unemployment tends to have the highest means of all four groups at Anticipation (with the exception of Anger-Irritation and Suspicion) cannot be interpreted as reflecting support for the hypothesis that effects of amount of unemployment will be more severe among the less well supported men. Moreover, the differences in means at Anticipation are smaller than those seen in Table 4.8, and in fact only one scale (Anxiety-Tension) shows a significant interaction ($P < 0.05$) at this first phase.

Aside from these initial differences, the best way to examine the interactive effects of amount of unemployment and social support is to see what happens to the four groups over time. Perhaps the clearest difference in trends can be seen for Anomie. Men low on social support and with more unemployment show an upward trend in Anomie, while the other three groups show a downward trend. Specifically, the change scores for Anomie between

Table 4.14 Indicators of mental health and well-being, controlling on Social Support, as the men go through the five phases.

Indicators of mental health and amount of social Support	Means by phases (standard scores)				
	Anticipation	Termination	6 Months	12 Months	24 Months
Depression					
Low social support	0.91	0.55	0.63	0.60	0.74
High social support	-0.18	0.06	-0.17	0.08	-0.19
Low self-esteem					
Low social support	0.47	0.29	0.40	0.32	0.58
High social support	-0.13	-0.13	-0.29	-0.23	-0.20
Anomie					
Low social support	0.24	0.17	0.26	0.18	0.13
High social support	-0.34	-0.41	-0.49	-0.61	-0.70
Anxiety-tension					
Low social support	0.46	0.06	0.14	0.18	0.17
High social support	-0.21	-0.03	-0.43	-0.35	-0.26
Psychophysiological symptoms					
Low social support	0.18	-0.07	-0.04	0.27	0.51
High social support	-0.10	-0.35	-0.26	-0.21	-0.03
Insomnia					
Low social support	0.06	-0.04	0.13	0.22	0.15
High social support	-0.20	-0.32	-0.19	-0.12	-0.24
Anger-irritatation					
Low social support	0.18	-0.16	-0.07	0.00	0.06
High social support	-0.15	-0.18	-0.28	-0.37	-0.39
Resentment					
Low social support	0.47	0.16	0.20	0.34	0.33
High social support	-0.24	-0.01	-0.22	-0.18	-0.44
Suspicion					
Low social support	0.20	-0.35	-0.18	0.16	-0.15
High social support	-0.82	-0.71	-0.92	-0.91	-0.72

Table 4.15 Indicators of mental health and well-being, controlling on amount of unemployment and social support, as the men go through the five phases.

Indicators of mental health and well-being	Means by phases (standard scores)				
	Anticipation	Termination	6 Months	12 Months	24 Months
Depression					
Low social support					
Less unemployment	0.61	0.03	0.12	0.32	0.50
More unemployment	1.34	1.16	1.28	0.92	1.03
High social support					
Less unemployment	-0.26	-0.12	-0.36	0.24	0.01
More unemployment	-0.13	0.20	-0.21	-0.04	-0.34
Low self-esteem					
Low social support					
Less unemployment	0.27	-0.01	0.07	0.09	0.42
More unemployment	0.66	0.55	0.82	0.58	0.77
High social support					
Less unemployment	-0.22	-0.36	-0.57	-0.33	-0.10
More unemployment	-0.07	0.07	-0.23	-0.16	-0.28
Anomie					
Low social support					
Less unemployment	-0.01	-0.37	-0.20	-0.42	-0.36
More unemployment	0.51	0.85	0.85	0.88	0.72
High social support					
Less unemployment	-0.52	-0.57	-0.73	-0.61	-0.65
More unemployment	-0.30	-0.33	-0.43	-0.60	-0.73
Anxiety-tension					
Low social support					
Less unemployment	0.21	-0.48	-0.31	-0.03	-0.19
More unemployment	0.82	0.77	0.72	0.42	0.60
High social support					
Less unemployment	0.12	-0.12	-0.42	-0.12	0.13
More unemployment	-0.41	-0.11	-0.59	-0.54	-0.54

(continued)

Indicators of mental health and well-being	Means by phases (standard scores)				
	Anticipation	Termination	6 Months	12 Months	24 Months
Psychophysiological symptoms					
Low social support					
Less unemployment	-0.08	-0.31	-0.32	-0.19	0.10
More unemployment	0.52	0.26	0.31	0.79	1.00
High social support					
Less unemployment	-0.23	-0.50	-0.19	-0.02	0.18
More unemployment	0.05	-0.25	-0.53	-0.37	-0.18
Insomnia					
Low social support					
Less unemployment	-0.12	-0.25	-0.18	-0.15	-0.23
More unemployment	0.24	0.29	0.53	0.66	0.59
High social support					
Less unemployment	0.04	-0.05	-0.23	0.29	-0.07
More unemployment	-0.41	-0.51	-0.34	-0.45	-0.36
Anger-irritation					
Low social support					
Less unemployment	0.30	-0.23	-0.08	-0.18	0.06
More unemployment	0.18	-0.04	-0.04	0.21	0.06
High social support					
Less unemployment	0.08	0.14	-0.02	0.07	0.33
More unemployment	-0.25	-0.41	-0.62	-0.73	-0.88
Resentment					
Low social support					
Less unemployment	0.23	-0.04	-0.09	0.07	0.12
More unemployment	0.75	0.38	0.56	0.65	0.58
High social support					
Less unemployment	-0.30	-0.23	-0.46	-0.21	-0.17
More unemployment	-0.30	0.11	-0.25	-0.15	-0.62
Suspicion					
Low social support					
Less unemployment	0.31	-0.72	-0.43	-0.29	-0.53
More unemployment	0.09	0.18	0.13	0.67	0.31
High social support					
Less unemployment	-0.57	-0.79	-1.26	-0.81	-0.56
More unemployment	-1.09	-0.63	-0.72	-0.99	-0.84

Anticipation and 12 Months show a significant interaction ($P < 0.01$) between amount of unemployment and social support. Two other scales show such a significant interaction, Psychophysiological Symptoms ($P < 0.05$) and Anger-Irritation ($P < 0.01$); for a third scale, Suspicion, the trend is not quite significant. In contrast to these scales, there are other scales, such as Depression, Low Self-Esteem, and Anxiety-Tension, which do not give any evidence of an interaction effect over time: at Anticipation, the four groups separate themselves out and with later phases they pretty much maintain that separation.

Table 4.16 presents the data in which Number of Job Changes and Social Support are the control variables. It will be recalled from discussion of Table 4.13 that most of the main effect of job changes was seen at 12 Months, either in comparion with the previous phase (6 Months) or with Anticipation. Table 4.16 does not provide support for the hypothesis that this effect of job changes will be particularly strong among men with low social support. For example, on suspicion, the difference in trends between Anticipation and 12 Months due to Number of Job Changes is much greater among men with high social support, not low social support. To a lesser extent, this finding also holds for low self-esteem, psychophysiological symptoms, and anger-irritation. On the remaining scales (depression, anomie, anxiety-tension, insomnia, and resentment), level of social support does not seem to modify at all the effects of number of job changes.

Perhaps the best way to summarize the findings in Table 4.16 is to note that the group of men with fewer job changes and high social support starts out generally below the other three groups and shows further decline with later phases. However, none among the other three groups can be singled out as showing a dominant trend on the various scales. For example, an upward trend over time is seen sometimes among men low on social support and with fewer job changes (psychophysiological symptoms) sometimes among men high on social support and with more job changes (suspicion).

Let us look briefly at the relationship between the two indices of economic state and the nine mental health indices. At Anticipation and at Termination, none of the correlations with Relative Economic Deprivation is as high as $\pm$ 0.20. During the three later phases, several scales show moderate correlations: Anxiety-tension, average $r = 0.39$; low self-esteem, $r = 0.36$; depression, $r = 0.30$; insomnia, $r = 0.27$. The results with Relative Economic Change reveal only three correlations higher than $\pm$ 0.25, and they all appear at 6 Months: low self-esteem, $r = 0.39$; anxiety-tension, $r = 0.37$; and depression, $r = 0.34$.

It is also interesting to examine the associations between the mental health indices and the deprivation in the work role indices. Since this represents a total of 270 correlations (9 mental health indices, 6 deprivation scales, and 5 phases), we shall only comment on those pairs of scales which show an average intra-phase correlation of at least 0.30. These are: 1) Deprivation on feelings of security about the future with depression ($r = 0.37$), low self-esteem ($r = 0.44$), and anxiety-tension ($r = 0.35$). 2) Deprivation on feelings of getting ahead in the world and low self-esteem ($r = 0.31$). 3) Summary scale of 12 deprivation dimensions and depression

(r = 0.37), low self-esteem (r = 0.37), and anxiety-tension (r = 0.38). A closer examination of these correlations by phase revealed no systematic tendency for the correlations to vary according to phase of the study. In short, it appears that only three mental health scales (depression, low self-esteem, and anxiety-tension) show moderately high associations with any of the six scales reflecting deprivation in the work role.

Let us, finally, consider the data on the third company, Cryland. On psychophysiological symptoms, the men start out near normal levels (means 0.16 and 0.20 for the first two phases) and then go up significantly ($P < 0.001$) to a mean of 0.63 for the remaining visits, which is significantly higher ($P < 0.01$) than controls. On the Resentment scale, the men start out already significantly higher than controls (mean of 0.47, $P < 0.05$) and go on to a mean of 0.81 for the later visits ($P < 0.001$ for difference from controls). On depression the men are higher than controls at first phase (mean of 0.59, $P < 0.025$), but do not show any further changes (mean of 0.61 for later phases). On low self-esteem the men start out at the level of controls at the first two phases (mean of -0.05) but show a significant increase ($P < 0.025$) by the time they reach a mean of 0.29 at last phase. On the remaining scales, no significant effects are apparent; the men do show a decrease on anger-irritation, but this is not different from the decrease over time found among the controls. Overall, then, the Cryland men show significant increases on three scales (psychophysiological symptoms, resentment, and low self-esteem) as they go through the experience of prolonged anticipation and involuntary job changes. The high levels of depression are somewhat ambiguous since no changes over time are evident.

CATEGORIES OF SELF-DESCRIPTION FROM AN UNSTRUCTURED TEST

During the course of the interview, the respondent was presented with a self-administered test. He was given a sheet of paper with the following instructions: "On this page it says 'I Am' and there is a blank line. Please complete each 'I Am' sentence by describing yourself in any way you want." The respondent was then asked to fill in the six blank lines each of which began with "I Am...". The intent of this sentence completion test was to get at some of the concerns of the respondents in a more unstructured way. It was an exploratory approach, intended to supplement the fully structured, self-report items analyzed in the previous section.

The respondents found this part of the interview more burdensome than other sections. The task was a strange one to them and it was met with some resistance and, probably, defensiveness. It is very doubtful that it can be viewed as a projective test in which the respondents revealed more than they intended. In this section we shall present some basic results which are only meant to supplement the findings using the already discussed measures, deprivation in the work role and the indices of mental health and well-being.

The content of the responses to the open-ended task was coded into the following major categories: 1) family and home; 2) work, money, and security; 3) health; 4) self; 5) people and activity; and 6) edu-

Table 4.16 Indicators of mental health and well-being, controlling on number of job changes and social support, as the men go through the five phases.

Indicators of mental health and well-being	Means by phases (standard scores)				
	Anticipation	Termination	6 Months	12 Months	24 Months
Depression					
Low social support					
Fewer job changes	1.01	0.49	0.63	0.43	0.68
More job changes	0.91	0.68	0.63	1.01	0.86
High social support					
Fewer job changes	-0.29	-0.05	-0.43	-0.37	-0.41
More job changes	-0.09	0.17	-0.13	0.51	-0.02
Low self-esteem					
Low social support					
Fewer job changes	0.46	0.09	0.34	0.34	0.41
More job changes	0.46	0.57	0.50	0.40	0.92
High social support					
Fewer job changes	-0.16	-0.29	-0.48	-0.47	-0.36
More job changes	-0.11	0.06	-0.28	-0.01	-0.08
Anomie					
Low social support					
Fewer job changes	0.27	0.12	0.36	-0.02	0.15
More job changes	0.22	0.23	0.07	0.58	0.10
High social support					
Fewer job changes	-0.53	-0.51	-1.01	-1.11	-1.29
More job changes	-0.17	-0.36	-0.15	-0.12	-0.20
Anxiety-tension					
Low social support					
Fewer job changes	0.53	0.13	0.09	0.15	0.16
More job changes	0.43	0.04	0.25	0.27	0.19
High social support					
Fewer job changes	-0.36	-0.25	-0.67	-0.63	-0.49
More job changes	0.00	0.01	-0.37	-0.09	-0.08

(continued)

Table 4.16, continued.

Indicators of mental health and well-being	Means by phases (standard scores)				
	Anticipation	Termination	6 Months	12 Months	24 Months
Psychophysiological symptoms					
Low social support					
Fewer job changes	0.32	-0.04	-0.02	0.24	0.65
More job changes	-0.11	-0.13	-0.08	0.43	0.26
High social support					
Fewer job changes	0.06	-0.46	-0.53	-0.57	-0.26
More job changes	-0.21	-0.25	-0.24	0.13	0.16
Insomnia					
Low social support					
Fewer job changes	0.19	0.05	0.15	0.15	0.04
More job changes	-0.24	-0.14	0.10	0.43	0.35
High social support					
Fewer job changes	-0.20	-0.29	-0.47	-0.39	-0.54
More job changes	-0.22	-0.34	-0.14	0.14	0.00
Anger-irritation					
Low social support					
Fewer job changes	0.10	-0.21	-0.21	-0.07	-0.04
More job changes	0.37	0.03	0.18	0.26	0.24
High social support					
Fewer job changes	-0.10	-0.26	-0.65	-0.80	-0.72
More job changes	-0.11	-0.11	-0.09	0.03	-0.11
Resentment					
Low social support					
Fewer job changes	0.61	0.06	0.18	0.35	0.43
More job changes	0.16	0.23	0.24	0.31	0.15
High social support					
Fewer job changes	-0.48	-0.20	-0.76	-0.69	-0.79
More job changes	0.03	0.12	0.05	0.32	-0.14
Suspicion					
Low social support					
Fewer job changes	0.32	-0.61	-0.35	0.06	-0.29
More job changes	0.12	0.09	0.13	0.25	0.12
High social support					
Fewer job changes	-0.71	-0.87	-1.23	-1.53	-1.14
More job changes	-1.02	-0.53	-0.70	-0.31	-0.38

Table 4.17 Distribution of responses to "I am . . ." sentence completion test, for controls, and for terminees by phases of study, social support, and employment status.

Cases, subsets, and phases	Number of responses	Percent of responses falling into different content categories					
		Family, home	Work, money, security	Health	Self	People, activity	Education, religion, politics, civic affairs
Urban controls	1006	16.3	19.0	6.0	33.7	18.0	7.1
Rural controls	468	16.7	18.8	4.5	27.1	24.4	8.5
Urban controls							
Low social support	465	15.5	18.7	5.8	37.2	14.6	8.2
High social support	541	17.0	19.2	6.1	30.7	20.9	6.1
Rural controls							
Low social support	180	22.2	24.4	5.0	20.6	21.7	6.1
High social support	288	13.2	15.3	4.2	31.2	26.0	10.1
Baker men (urban plant)							
Anticipation	240	15.0	26.7	5.0	25.8	17.5	10.0
Termination	216	18.5	35.6	4.6	18.1	14.4	8.8
6 Months	208	20.7	28.8	5.3	23.1	13.9	8.2
12 Months	207	19.3	25.1	4.8	27.1	15.5	8.2
24 Months	176	15.9	22.7	5.7	31.3	18.8	5.7
Dawson men (rural plant)							
Anticipation	286	22.7	24.8	3.1	27.3	18.9	3.1
Termination	280	16.8	31.8	4.6	25.7	18.2	2.9
6 Months	297	15.8	24.9	8.8	25.3	19.5	5.7
12 Months	243	19.8	27.2	10.7	18.5	19.3	4.5
24 Months	216	20.8	23.1	6.9	26.4	19.0	3.7
Baker men							
Unemployed at Termination	64	23.4	39.1	4.7	20.3	10.9	1.6
Employed at Termination	152	16.4	34.2	4.6	17.1	15.8	11.8
Dawson men							
Unemployed at Termination	197	13.2	28.4	6.1	29.9	19.3	3.0
Employed at Termination	83	25.3	39.8	1.2	15.7	15.7	2.4

cation, religion, politics, and civic affairs. (The last category is a collapsing of several infrequently used categories originally coded separately.) A little under 4% of all responses could not be fitted into any of the above; this "other" category was ignored in analysis. As can be imagined, a good deal of training of coders and progressive sharpening of criteria for coding was necessary before a reliable coding scheme was achieved. For reasons of space, we shall not give here the detailed coding rules or the reliability of the various categories. Suffice it to note the coders carried out their task without having any other information about the respondent (such as terminee versus control, employed versus unemployed, etc.).

Table 4.17 presents some of the basic data regarding this measure. The data for the controls are collapsed across visits and across individuals, and show the baseline frequencies of use of each of the categories. Since the intent here is a purely descriptive one (no significance testing will be performed), we have retained the unit of analysis as responses, not individuals. The urban and rural controls have a distribution of responses which is quite similar, except that urban controls have more references to self, while rural controls have more references to other people and to various activities. Controls who are high on social support tend to give more responses of the "people and activity" kind than the controls low on social support. Otherwise, social support seems to interact with the urban versus rural status of the controls, particularly for the category of "self". And only among rural controls, does level of social support make a difference in the use of categories involving family and home, and work, money and security.

The remainder of Table 4.17 gives the data for the terminees. At Anticipation, Baker men reveal more references to self (than expected from urban controls). At Termination, this difference is even more pronounced. With later visits (especially at 24 Months), however, the Baker men return to a distribution of responses which is very close to that for the urban controls. The pattern of results for Dawson men is similar for the category of work, money and security. Dawson men also show an increase in references to health (especially high at 12 Months), with corresponding mirror changes in references to self.

The bottom of Table 4.17 presents the data for Phase 2 (Termination), classified by employment status at the time of interview. Men who are unemployed in the urban setting have more references to family and home, and to work, money and security and fewer references to people and activity and to education, etc., than do the employed men. In the rural setting, the effect is quite different: the unemployed men have more references to self and to health and fewer references to family and home and to work, money and security, than do the employed men.

Men unemployed at later visits (6, 12, 24 Months) are too few to permit any rigorous analysis. However, the available data (96 responses from 14 men) are quite interesting: the prevalence of references to work, money and security drops down to 13.5%, while references to health are up to 17.7%. It might not be inappropriate to suggest from these data that for

these few men, concern with health (sick role) has replaced concern over the work role.

Among advocates of unstructured or "projective" tests, the assumption is frequently made that the subject's responses are particularly useful if he follows the instructions to "respond with what comes to your mind first." Because of this belief, the data in Table 4.17 were reanlayzed using only the first response each man gave to the sentence completion test. The results were essentially similar: the terminees gave an excess (compared with controls) of responses in the work, money and security category during the first three phases (particularly at Termination), but by 24 Months they gave somewhat fewer such responses than controls. References to self showed corresponding mirror changes. Moreover, the Dawson men showed a pattern of increasing references to health with later phases.

Table 4.18 presents the basic data on terminees, controlling for amount of unemployment and social support. Since controls show some differences by urban versus rural status and by low versus social support, the data on controls were used to compute expected distributions of responses for each particular group of terminees. The data in Table 4.18 are the deviations from expected, with positive scores indicating terminees using more of that particular content category. The control on amount of unemployment suggests that men with less unemployment had fewer self references while men with more unemployment had fewer references to people and activity and to education, etc. However, these differences are already partly apparent at Anticipation and thus it is difficult to interpret them as purely an effect of amount of unemployment. Both groups show the increased references to work, money and security, with some hint of a stronger effect among men with less employment. The increased references to health are only seen in later visits among men with more unemployment.

The data on social support reveal two reasonably clearcut findings: men high on social support have more references to family and home and fewer references to self, than do men low on social support (general effects of social support on the use of these categories, as computed from control data, are already removed). On references to work, money and security, level of social support does not seem to have a differential effect. However, it must be noted again that these differences are already apparent at Anticipation and thus it is hard to separate effects of anticipating the plant closing from later effects of job loss and unemployment.

The group of men with more unemployment who are also low on social support (data not shown in Table 4.18) are particularly striking in two respects: fewer than expected references to family and home, and more references to self. (None of the four groups created separately by the two control variables in Table 4.18 shows increased references to self.) Once again, however, they are different in this way already at Anticipation. During this first phase, these men low on social support and with more (subsequent) unemployment have 20% more self-centered references (self and work, money and security) and 18% fewer other-centered references (family and home, people and activity, and education, etc.), than do all the other terminees at this phase.

Table 4.18 Distribution of terminees' responses to "I am . . ." sentence completion test, by phases of study, amount of unemployment, and social support.

Subsets and phases	Number of responses	Percent of responses falling into different content categories (expressed as difference from expected, based on controls)					
		Family home	Work money security	Health	Self	People, activity	Education, religion, politics, civic affairs
Less unemployment							
Anticipation	247	...*	5.8	1.2	- 6.4	...	...
Termination	225	1.3	18.9	-2.6	-13.8	-2.7	-1.0
6 Months	244	3.6	9.8	...	-10.2	-4.1	...
12 Months	228	3.7	7.9	...	-11.0	...	...
24 Months	189	4.7	8.1	-2.7	- 6.9	-2.4	...
More unemployment							
Anticipation	241	3.8	6.8	-1.3	...	-6.7	-3.0
Termination	237	...	10.6	...	...	-6.7	-4.7
6 Months	243	-2.2	5.4	4.6	...	-3.9	-3.2
12 Months	222	2.4	6.8	5.4	- 4.2	-7.3	-3.0
24 Months	203	...	...	4.9	3.4	-2.7	-5.5
Low social support							
Anticipation	250	-4.1	4.8	...	...	...	-1.5
Termination	237	-4.8	14.1	-2.4	...	-4.1	-3.7
6 Months	243	-3.9	8.7	...	- 1.0	-3.2	-1.3
12 Months	213	-2.7	6.7	2.1	- 4.8	-1.6	...
24 Months	174	-3.4	5.4	...	5.0	-4.9	-2.5
High social support							
Anticipation	270	8.3	7.5	-2.0	- 6.9	-5.4	-1.5
Termination	259	5.7	14.4	1.2	-14.8	-5.4	-1.1
6 Months	262	5.6	6.2	3.5	- 9.2	-5.0	-1.0
12 Months	237	8.0	7.6	3.4	-10.3	-5.3	-3.3
24 Months	218	6.3	2.8	1.9	- 6.7	...	3.8

* Less than one percent difference.

Thus far we have been concerned only with the frequency of use of different content categories, irrespective of any evaluative or affective content. The coders' task, in fact, was a two-fold one: assign the response to the general content category and then assign it to a finer classification, generally representing a distinction between positive versus neutral versus negative statement, but sometimes also a finer content distinction. For the purposes of this data presentation, we shall be concerned with two additional distinctions: 1) all responses in the work, money and security category coded as worry or concern over finding or keeping a job, and over money and security; 2) all negative responses (criticism, dissatisfaction) falling in the categories of family and home, work, health, and self. In order to be able to analyze the data by individuals instead of by responses, each person for each visit received a score which was simply the number of responses that fit one or the other of those two designations, divided by the total number of responses (usually six). The controls showed no trends over time and hence the two scores for each control summarized his responses over all visits.

Since the two scores are based on the same pool of responses (six), there is a possibility of a built-in (artifactual) negative correlation between the two scores; for example, a person getting a score of 1.0 on one must get a score of 0.0 on the other. However, the actual correlations were positive; $r = 0.35$ for controls and $r = 0.17$ for the average intra-phase correlation among cases. Since the two categories of responses were sufficiently infrequent, it almost never happened that a high score on one necessarily forced a low score on the other.

Table 4.19 summarizes the data on the first index, the frequency of responses indicating concern over financial or job security. As with previous indices, the means are in standard scores, with the data on the controls used to obtain mean and standard deviation. However, the results must be interpreted more cautiously because of the skewed distribution of scores on this scale (frequent zero scores in the raw data). Baker men show a strong Anticipation effect ($P < 0.001$ above controls), remain high at Termination, show a sizeable drop by 6 Months, and a further small decline by 24 Months. Dawson men show no Anticipation effect but a sharp upturn at Termination ($P < 0.001$); at later phases their values are close to the Baker men. The control variable, amount of unemployment, shows its most clearcut effect at Termination, though men with more unemployment are already higher at Anticipation. Later visits show some flip-flopping of the two groups, but at 24 Months they certainly appear stabilized at the same level.

Additional analyses by employment status at time of visit show that men going from Anticipation to employment at Termination show a small decrease (not significant), while men going on to unemployment show a large increase (mean change of 2.21, $P < 0.001$); the difference in the changes between the two groups is reliable ($P < 0.025$). Between Termination and 6 Months, men going from unemployment to reemployment show a large drop (mean of -2.80), men remaining on their new jobs show a smaller drop (mean of -0.94), and men remaining unemployed show a further increase (mean of 1.21); the difference in changes among the three groups is significant ($P < 0.01$).

Table 4.19 Concern over financial and job security (scored from sentence completion test) of the men as they go through the five phases of the job loss experience.

Cases and subsets	Means by phases (standard scores) Anticipation	Termination	6 Months	12 Months	24 Months
All cases	1.04	2.14	0.72	0.52	0.13
Baker (urban plant)	1.75	1.79	0.72	0.68	0.18
Dawson (rural plant)	0.38	2.44	0.72	0.39	0.09
Less unemployment	0.69	1.64	0.51	0.79	0.12
More unemployment	1.21	2.78	1.00	0.24	0.13
Fewer job changes	1.01	2.63	0.53	0.90	0.35
More job changes	0.85	1.67	1.04	0.02	-0.11
Low social support	1.13	2.06	1.11	0.83	0.42
High social support	0.79	2.21	0.36	0.23	-0.13
Low social support &					
Less unemployment	0.71	0.88	0.54	1.06	0.22
More unemployment	1.85	3.86	1.89	0.54	0.69
High social support &					
Less unemployment	0.81	2.23	0.51	0.51	0.05
More unemployment	0.54	2.22	0.31	0.02	-0.25
Low social support &					
Fewer job changes	1.15	2.03	0.77	1.26	0.60
More job changes	1.35	2.58	1.82	0.09	0.12
High social support &					
Fewer job changes	0.81	3.40	0.21	0.48	0.03
More job changes	0.54	1.05	0.55	-0.03	-0.25

Controlling on number of job changes does not lead to any demonstrable effects of this variable: the higher levels at Termination among those with fewer (subsequent) job changes would seem to suggest that men with stronger concerns over security are more likely to seek and end up in more stable employment situations. However, the fluctuations during later visits reveal too much instability to make this a secure interpretation. Social support does not reveal much of an effect: men low on this variable show somewhat higher means (except at Termination), but this difference is never reliably greater than the net difference seen among controls (0.38 of a standard deviation).

Controlling jointly on amount of unemployment and social support reveals a pattern of findings familiar to us from previous tables. The men who are low on social support and with more unemployment have strikingly higher values at Termination and 6 Months. However, they are also high at Anticipation, so that not all of these differences at second and third phases are attributable to effects of experiencing more severe unemployment without the buffer of social support. If we zero in on the change from Anticipation to Termination, we see that only one group does not show a striking increase: men with low social support and less unemployment. This would be consistent with the interpretation that men low on social support have a weaker sense of reciprocal responsibility for the economic well-being of their family and thus, given that they experience less unemployment, they feel less concern over their financial and job security.

Controlling jointly on number of job changes and social support yields results which, at Termination, are consistent with two already made observations: a) men with fewer (subsequent) job changes are higher on concern over security; b) men with greater social support feel, temporarily, more concern over security. From Anticipation to Termination, it is the group low on (later) job changes and high on social support which shows the highest increase. However, they also show a prompt return to normal.

Table 4.20 summarizes the data on the second index, which involves negative responses (criticism, dissatification) falling in the categories of family and home, work, health, and self. Baker men show a more or less steady increase; at 24 Months they are significantly higher than controls and than Dawson men ($P < 0.025$ or less). Dawson men show an increase up to 6 Months (when they are higher than controls, $P < 0.05$) and then a return to normal level by 24 Months. Analysis of components of this total index reveals that the trend seen for Baker men is primarily due to the changes in references to self and health, while the trend seen for Dawson men is primarily due to changes in references to work and health.

The control on amount of unemployment does not show much of an effect, except on initial separation of the two groups at Anticipation (not quite significant, $P < 0.10$), which is then pretty much maintained at later visits. Additional analyses by employment status at time of visit confirm the insensitivity of this index to the severity of the job loss experience. Men going from Anticipation to employment at Termination go up about the same amount (mean of 0.17) as do men going on to unemployment (mean of 0.12).

Table 4.20 Negative evaluation of family and home, work, health, and self (scored from sentence completion test) of the men as they go through the five phases of the job loss experience.

Cases and subsets	Means by phases (standard scores)				
	Anticipation	Termination	6 Months	12 Months	24 Months
All cases	0.17	0.30	0.54	0.27	0.40
Baker (urban plant)	0.23	0.46	0.48	0.30	0.92
Dawson (rural plant)	0.12	0.16	0.59	0.26	0.00
Less unemployment	-0.07	0.08	0.34	-0.08	0.08
More unemployment	0.55	0.57	0.82	0.62	0.69
Fewer job changes	0.06	0.35	0.38	0.36	0.59
More job changes	0.47	0.32	0.85	0.15	0.21
Low social support	0.23	0.46	0.71	0.30	0.94
High social support	0.13	0.15	0.38	0.25	-0.08
Low social support &					
Less unemployment	-0.37	0.05	0.60	0.01	0.49
More unemployment	1.11	0.93	0.93	0.69	1.50
High social support &					
Less unemployment	0.31	0.12	0.00	-0.19	-0.43
More unemployment	0.12	0.30	0.74	0.57	0.15
Low social support &					
Fewer job changes	0.23	0.61	0.61	0.51	0.77
More job changes	0.40	0.17	1.00	-0.03	1.25
High social support &					
Fewer job changes	-0.17	0.03	0.06	0.27	0.28
More job changes	0.52	0.42	0.75	0.27	-0.35

Changes between Termination and 6 Months are not significantly different for the three groups (remaining employed, becoming reemployed, remaining unemployed) and the trends are not even in the predicted direction in that the only decrease is seen in the group remaining unemployed. These data are in contrast to the previous index (Table 4.19) which showed a clear sensitivity to employment status.

The control on number of job changes does not reveal a clearly interpretable pattern of results and at no point are the two groups reliably different from each other. Controlling on social support reveals a slightly higher level among men low on social support; at 24 Months, this difference is the largest and is significant ($P < 0.025$). However, the net difference among controls is 0.53 and the cases in Table 4.20 never show a difference which is reliably greater than this, or smaller.

Controlling jointly on amount of unemployment and social support reveals a significant ($P < 0.05$) interaction at Anticipation: among men low on social support, scores on this index are predictive of the later amount of unemployment. The long term trends are also suggestive of an interaction: men high on social support and with less unemployment show a steady downward trend, while the better supported men with more unemployment show temporary elevations but return to early levels by 24 Months. The less well supported men, irrespective of the unemployment experience, show an upward trend and a failure to stabilize.

Controlling jointly on number of job changes and social support reveals an effect of social support best seen by examining men with more job changes who differ on social support. Both groups start out at Anticipation at about the same level, but the well supported men, by 24 Months, have come down almost one standard deviation, while the men low on social support go up about the same amount. The men with fewer job changes show a moderate trend irrespective of level of social support.

JOB SATISFACTION

Because the major purpose of the study was to describe the consequences of plant closing and job loss on health and well-being of the affected men, rather than to describe the job seeking process and the new jobs obtained, job satisfaction is not a central variable in this study. This is because it cannot be measured when the men are unemployed and because it is presumably more sensitive to the nature of the new job than to the overall experience of job termination. Given these considerations, various aspects of job satisfaction were measured only with single items instead of using available, lengthier scales. Specifically, the men were asked: "How satisfied are you with the following: 1) the job as a whole; 2) the pay; 3) the men you work with; 4) the boss; 5) the type of work; 6) your chances of promotion; 7) the way you use your skills." Each item was followed with five scaled alternatives from 1 = very satisfied to 5 = very dissatisfied. The choice and phrasing of these items were guided by the listing of the basic job satisfaction dimensions identified in various literature reviews (e.g., Herzberg, et al., 1957; Robinson, et al., 1967; Vroom, 1964) and by previous studies measuring job satisfaction (e.g.,

Gurin, et al., 1960; Mann and Hoffman, 1960).

The data on controls revealed an average level of satisfaction which was about half way between "very satisfied" and "partly satisfied" for all scales but two (pay and promotion), which showed a lower level of satisfaction (between "partly satisfied" and "neither satisfied nor dissatisfied"). Controls did not show any significant urban-rural differences or any trends over time. The temporal stability of these single-item scales ranged from 0.21 for "the men you work with" to 0.61 for "the way you use your skills", with a mean of 0.43.

Table 4.21 presents the basic data on the cases. The scales are called job "dissatisfaction" because a high score reflects high dissatisfaction. During Termination, about half of the cases were unemployed and no job satisfaction data could be collected on them. Moreover, the men who are working at this phase have been on their jobs such a short time that job satisfaction data can only reflect the very first impressions. Therefore, it is wise not to pay too much attention to the results at Termination. Table 4.21 groups the components of job dissatisfaction into categories which might be roughly called: extrinsic (pay and promotion), intrinsic (the type of work and use of skills), and "social" (the men and the boss).

On dissatisfaction with the job as a whole, the cases show slightly elevated levels, with a return to normal levels only at 24 Months. On dissatisfaction with pay, Baker men show a drop between Anticipation and 6 Months ($P < 0.05$) and an eventual stabilization below the level of controls ($P < 0.01$ or less, for 12 and 24 Months). Dawson men, on the other hand, show themselves to be more satisfied at Anticipation than controls ($P < 0.001$) and than Baker men ($P < 0.01$). With later phases, Dawson men are very much like controls, which represents for them a significant increase in dissatisfaction ($P < 0.001$) from their initial levels. Overall, then, the urban cases show an increased satisfaction with pay while the rural men show increased dissatisfaction.

The data on dissatisfaction with chances of promotion do not provide meaningful baseline data at Anticipation: since their place of work was about to close down, their level of satisfaction with chances of promotion could not have a reasonable referent in reality. The values for later phases reveal levels of dissatisfaction which are only slightly below those for controls.

Dissatisfaction with the type of work shows elevated levels for Baker men at 6 and 12 Months ($P < 0.05$ for difference with controls); at 24 Months, they appear to come down. Dawson men show a pattern which is difficult to interpret: at 12 Months, the men show significantly higher values than at either 6 Months or 24 Months. If one pools the data with the next item, dissatisfaction with use of skills, both companies and both items show the same pattern: an increase between 6 and 12 Months and a decrease between 12 and 24 Months. This would seem to suggest that satisfaction with intrinsic aspects of the job gets reassessed as the men become more familiar with their new jobs and that stable evaluations of the job are not achieved in such a short period as one year.

The data on dissatisfaction with the men you work with reveal a significant ($P < 0.025$) increase for Baker men between Anticipation and the last two phases; Dawson men show a very slight drop in dissatisfaction. This pattern of findings is consistent with the previously made observations regarding the social context of the two companies (Gore, 1973): in the urban setting, where the men lived scattered throughout the city, the plant itself was an important focus of a sense of community, and with the plant closing down, this "community" died. But in the rural setting, the small town itself and the people in it were the major source of a sense of community; when the plant closed down, the community remained largely intact and social interaction with former co-workers who were friends was not so severely disrupted.

The data on dissatisfaction with the boss do not show any significant changes for Baker men. The Dawson men show levels of dissatisfaction during the last three phases which are significantly below controls ($P < 0.01$) and below their own levels at Anticipation ($P < 0.05$). And, as with the previous item, Dawson men stabilize significantly below the level of dissatisfaction for Baker men.

Table 4.22 presents some of the job dissatisfaction means obtained by controlling on the three already familiar variables. The data are presented only for the last two phases since certain subgroups (e.g., men with more unemployment or more job changes) cannot be expected to provide very meaningful job satisfaction data at earlier phases. Controlling on amount of unemployment leads to the following observations: 1) On extrinsic aspects (pay and promotion), men who had had more unemployment show significantly higher levels of dissatisfaction at one and two years after plant closing, than do men with less unemployment. However, this difference is due to the lower-than-controls levels of dissatisfaction among the men with less unemployment. 2) On intrinsic aspects (type of work and use of skills) the two groups are fairly comparable at 12 Months; at 24 Months, men who had had more unemployment show less dissatisfaction (significant for type of work, $P < 0.025$). 3) On "social" aspects (co-workers and boss) the two groups do not show a clearcut pattern for both items; however, there is a hint that at 24 Months the men with less unemployment sharply differentiate the men they work with (high dissatisfaction) from the boss (low dissatisfaction), while the men with more unemployment are close to the controls for both items. (None of the items showed significant differences at Anticipation.)

Controlling on number of job changes does not yield any significant differences; there is a hint that two years after plant closing men who experienced fewer job changes are somewhat less dissatisfied ($P < 0.10$) with their chances of promotion. Controlling on social support reveals the following: 1) At 12 Months men with low social support appear to have significantly more dissatisfaction with pay and with use of skills than men with high social support. 2) At 24 Months, the significant differences involve type of work, co-workers and the boss. However, these differences are approximately what one would expect as a result of the correlation of social support with the variables in question.

Additional runs which controlled simultaneously on severity of the

Table 4.21 Components of job dissatisfaction, as the men go through the five phases of the job loss experience.

Components of job dissatisfaction	Means by phases (standard scores) Anticipation	Termination*	6 Months	12 Months	24 Months
The job as a whole					
All cases	0.31	0.47	0.15	0.35	0.00
Baker	0.39	0.60	0.45	0.30	0.02
Dawson	0.25	0.17	-0.10	0.39	-0.02
The pay					
All cases	-0.56	-0.08	-0.31	-0.29	-0.27
Baker	-0.26	-0.27	-0.76	-0.73	-0.53
Dawson	-0.82	0.37	0.04	0.08	-0.06
Your chances of promotion					
All cases	...**	-0.24	-0.36	-0.16	-0.16
Baker	...**	-0.17	-0.23	0.06	-0.21
Dawson	...**	-0.38	-0.47	-0.38	-0.12
The type of work					
All cases	0.19	0.56	0.17	0.53	0.06
Baker	0.26	0.80	0.40	0.55	0.35
Dawson	0.14	0.03	-0.01	0.50	-0.16
The way you use your skills					
All cases	0.13	0.23	0.24	0.46	-0.04
Baker	0.13	0.52	0.18	0.38	0.21
Dawson	0.13	-0.39	0.28	0.53	-0.24
The men you work with					
All cases	0.12	0.13	-0.06	0.36	0.30
Baker	0.19	0.36	0.15	0.89	0.75
Dawson	0.07	-0.40	-0.23	-0.07	-0.05
The boss					
All cases	-0.20	-0.16	-0.51	-0.32	-0.25
Baker	-0.24	0.03	-0.34	-0.07	-0.02
Dawson	-0.17	-0.58	-0.66	-0.52	-0.43

* The data are based on 33 Baker men and 15 Dawson men who were employed at this phase

** Not a meaningful item, since the plant is about to close down

Table 4.22 Components of job dissatisfaction during later phases, controlling on amount of unemployment, number of job changes, and amount of social support.

Components of job dissatisfaction	Amount of Unemployment	Means for phases (standard scores) 12 mos.	24 mos.	Number of job changes	Means for phases (standard scores) 12 mos.	24 mos.	Amount of social support	Means for phases (standard scores) 12 mos.	24 mos.
The job as a whole	Less	0.15	-0.12	Fewer	0.39	-0.03	Low	0.57	0.07
	More	0.57	0.12	More	0.33	0.05	High	0.12	-0.07
The pay	Less	-0.57	-0.51	Fewer	-0.19	-0.29	Low	-0.05	-0.21
	More	0.01	0.00	More	-0.39	-0.21	High	-0.53	-0.32
Your chances of promotion	Less	-0.36	-0.41	Fewer	-0.28	-0.36	Low	-0.08	-0.13
	More	0.07	0.11	More	0.01	0.06	High	-0.25	-0.18
The type of work	Less	0.52	0.35	Fewer	0.44	0.14	Low	0.73	0.36
	More	0.54	-0.24	More	0.67	-0.04	High	0.31	-0.22
The way you use your skills	Less	0.61	0.03	Fewer	0.47	-0.01	Low	0.77	0.01
	More	0.30	-0.11	More	0.48	-0.09	High	0.15	-0.09
The men you work with	Less	0.53	0.50	Fewer	0.32	0.31	Low	0.58	0.67
	More	0.17	0.09	More	0.43	0.25	High	0.11	-0.05
The boss	Less	-0.24	-0.40	Fewer	-0.33	-0.41	Low	-0.20	0.07
	More	-0.40	-0.09	More	-0.28	-0.19	High	-0.45	-0.55

experience (weeks of unemployment, number of job changes) and social support did not reveal any notable interactions.

SOCIAL AND LEISURE ACTIVITIES

The results to be reported below are based on two different parts of the interview. In one section, the men were asked: "During the last four weeks: a) Have you and your wife (with or without children) done anything together for fun outside the house? b) Have you visited with any of your or your wife's relatives? c) Have you visited or done things together with any of your friends?" Coding of frequency of such activities led to four indices: leisure activities with family, with relatives, with friends, and a total index of social-leisure activities. The section of the interview dealing with leisure activities underwent expansion and revision after the study had begun; consequently, no data are available on Baker men for the first two phases. This, of course, limits the usefulness of these variables.

The other four variables discussed in this section involve four dimensions mentioned in Section 4.3 (deprivation in the work-unemployment role) but for which no specific data were presented: "1) How physically active are you? 2) How much of your time is filled with things to do; how busy are you? 3) How much do you get a chance to talk with people around you and enjoy yourself? 4) How much are you able to discuss your problems with the people around you when you are feeling low or when something bothers you?" As before, the actual measures used are deprivation indices, the discrepancy between actual and desired situation.

The data on controls do not reveal any significant rural-urban differences or any significant trends over time. The total index of social leisure activities shows a very modest correlation ($r = -0.20$) with relative economic deprivation.

Table 4.23 presents the basic activities data on cases. The data on Baker men start with the third phase (6 Months) and show a decline in activities with family and relatives between 6 Months and 12 or 24 Months. The total index reveals a level of activities at 24 Months which is significantly below controls ($P < 0.001$) and below the Dawson men ($P < 0.025$). The data on the Dawson men reveal mostly nonsignificant fluctuations at a level somewhat below that for controls. Only the index of activities with friends shows an increase over time which by 24 Months brings the Dawson men slightly above the controls. Because of the low level of activities already at Anticipation, it is difficult to attribute the subsequent low levels to the disruptive effects of the plant closing experience. Controlling on amount of unemployment and number of job changes (bottom of Table 4,23) reveals only one significant difference (at 6 Months, men with fewer job changes report fewer activities) and no pattern of clearly interpretable effects. Analysis of changes in social and leisure activities by employment status at Termination and 6 Months does not reveal any differential changes.

Overall, these data do not reveal a great sensitivity of social and leisure

Table 4.23 Indices of social and leisure activities, as the men go through the phases of the job loss experience.

Index of activities	Anticipation	Termination	6 Months	12 Months	24 Months
Frequency of family activities					
All cases	...	...	-0.19	-0.49	-0.42
Baker*	...	...	0.00	-0.47	-0.46
Dawson	-0.50	-0.29	-0.34	-0.50	-0.38
Activities with relatives					
All cases	...	...	-0.30	-0.61	-0.40
Baker*	...	...	-0.36	-0.92	-0.90
Dawson	-0.13	-0.02	-0.25	-0.38	-0.01
Activities with friends					
All cases	...	...	-0.31	-0.12	-0.03
Baker*	...	...	-0.32	-0.21	-0.28
Dawson	-0.37	-0.50	-0.30	-0.05	0.15
Total index					
All cases	...	...	-0.33	-0.51	-0.37
Baker*	...	...	-0.34	-0.71	-0.70
Dawson	-0.39	-0.31	-0.31	-0.37	-0.10
Total index					
Less unemployment	-0.25	-0.13	-0.24	-0.55	-0.33
More unemployment	-0.44	-0.46	-0.37	-0.47	-0.41
Total index					
Fewer job changes	-0.36	-0.42	-0.52	-0.42	-0.46
More job changes	-0.39	-0.18	-0.03	-0.63	-0.27

* Data not available for first two phases.

activities to the various phases of the plant closing experience. There is some evidence for a rural-urban difference, in that terminees in the urban setting show an eventual decline in activities with family and relatives, which cases in rural setting show a level of activities with relatives and friends which eventually increases to a level comparable with controls. Employment status and severity of unemployment do not seem to play much of a role.

DEPRIVATION OF ACTIVITY AND SOCIAL INTERACTION

Table 4.24 presents the data on an index of deprivation in activity level, which combines the two dimensions of "physically active" and "busy". As usual, a high score indicates a desired level of activity greater than the actual level. The overall fluctuations show a pattern of normal levels at Anticipation, somewhat elevated levels at Termination (particularly for Dawson men), a significant drop ($P < 0.005$) to 6 Months, a significant increase ($P < 0.025$) to 12 Months, and a small drop to 24 Months. The relatively low levels at 6 Months may be associated with being on a new job, while the relatively high levels at Termination and 12 Months may be associated with not working and with stabilizing on a new job, respectively.

Controlling on amount of unemployment reveals the men with less unemployment to have relatively low levels, except at 12 Months; the increase between 6 Months and 12 Months is significant ($P < 0.025$). The men with more unemployment start out significantly ($P < 0.025$) above the other group at Anticipation and show a significant increase to Termination ($P < 0.01$); they come down promptly at 6 Months and then stay at slightly above normal levels. Additional analyses by employment status at a particular phase show that men going from Anticipation to employment at Termination have a trivial decrease (-0.07), while those going on to unemployment at the second phase have a significant increase (0.61, $P < 0.025$); the difference between the two groups is also significant ($P < 0.05$). The transition from Termination to 6 Months is accompanied by a decrease for all three groups: those going from unemployment to employment, those staying employed, and those staying unemployed. Of the three, the first group shows the largest decrease (-0.85).

Controlling on the number of job changes reveals substantial fluctuations only among men with fewer job changes. However, since at Termination the two groups have not yet gone through most of the job changes which later led to their differential classification, the high levels of deprivation among the men with (subsequent) fewer job changes are difficult to interpret. Possibly, it could mean a self-selection effect: men who at this time (either unemployed or just starting on a new job) react with a great sense of deprivation in their activity level are more likely to seek out a stable job or hold on to the job they do get. Clearly, this self-selection effect is not in evidence at Anticipation. It is also interesting to note that this apparent self-selection effect is stronger among the subgroup of those who at Termination are unemployed: a mean of 1.54 for men with fewer subsequent job changes versus 0.23 for men with more job changes.

Controlling on social support does not reveal any main effect of this

Table 4.24 "Deprivation" in activity level, as the men go through the five phases of the job loss experience.

Cases and subsets	Means by phases (standard scores) Anticipation	Termination	6 Months	12 Months	24 Months
All cases	0.08	0.42	-0.17	0.27	0.11
Baker (urban plant)	-0.03	0.16	-0.02	0.42	0.18
Dawson (rural plant)	0.18	0.64	-0.28	0.14	0.06
Less unemployment	-0.26	-0.26	-0.34	0.24	-0.09
More unemployment	0.47	1.21	0.14	0.30	0.28
Fewer job changes	0.11	0.97	-0.14	0.50	0.31
More job changes	0.02	-0.03	-0.04	-0.04	-0.16
Low social support	0.13	0.53	-0.11	0.25	0.18
High social support	0.02	0.32	-0.23	0.29	0.04
Low social support &					
Less unemployment	-0.17	-0.54	-0.35	0.12	-0.01
More unemployment	0.58	1.92	0.21	0.41	0.41
High social support &					
Less unemployment	-0.37	0.09	-0.33	0.39	-0.18
More unemployment	0.38	0.66	0.08	0.21	0.19
Low social support &					
Fewer job changes	0.16	0.98	-0.23	0.42	0.47
More job changes	-0.03	0.08	0.15	-0.02	-0.36
High social support &					
Fewer job changes	0.05	0.96	-0.01	0.59	0.12
More job changes	0.05	-0.10	-0.17	-0.05	-0.04

variable. Among controls, the means on this variable for men low versus high on social support are 0.25 versus -0.20, respectively. Clearly, the cases show in Table 4.24 a much smaller separation due to social support.

Controlling simultaneously on amount of unemployment and social support reveals differences at Anticipation which reflect only the already seen main effect due to the less versus more unemployment classification. However, at Termination there is a clearcut interaction effect ($P < 0.01$): the men with low social support and more unemployment experience the greatest increase and reach the highest levels of "deprivation". With later visits, the interaction effect disappears and again one sees only a modest main effect due to amount of unemployment.

Controlling simultaneously on number of job changes and social support fails to reveal any interaction whatever: only the main effect due to the classification fewer versus more job changes is evident.

Table 4.25 presents the data on an index of deprivation in social interaction which is enjoyable and supportive: it combines the two items of "talk with people" and "discuss your problems". The overall fluctuations suggest a different pattern in the two companies: Baker men start out significantly above controls ($P < 0.005$) and show an additional increase at Termination. However, at 6 Months they promptly return to normal ($P < 0.001$ for drop between second and third phase) and do not show any further changes. Dawson men start out at normal levels and show a small decline to Termination, so that at this phase they are clearly below ($P < 0.001$) the Baker men. Their fluctuations are not significant except for the drop between 12 and 24 Months ($P < 0.025$).

Controlling on amount of unemployment reveals the two groups to be approximately equal at Anticipation. The change from Anticipation to Termination represents an increase for men with less unemployment and a decrease for those with more unemployment (additional, intra-company analyses reveal this effect in both companies), so that they are significantly different at Termination ($P < 0.05$). Men with more unemployment remain lower on deprivation until 24 Months, where the two groups cross over. Additional analyses reveal this pattern to be especially strong for the component referring to discussion of problems with others. The division of the terminees by number of job changes and by social support reveal only that those who have either many job changes or high social support have their deprivation reduced earlier and more dramatically than the others.

Controlling simultaneously on amount of unemployment and social support reveals a strong interaction effect at Anticipation ($P < 0.01$): among men who later experience more unemployment, those with low social support experience the most deprivation, while those high on social support experience the least. Since similar interactions predictive of subsequent unemployment were seen in Table 4.8, interpretive speculations offered before are appropriate here as well. However, the relative means at Termination for the four groups are quite different from those generally seen in Table 4.8: the group of men low on social support and with more unemployment experiences a drop of about one standard deviation, instead of maintaining

Table 4.25 Deprivation in social interaction, as the men go through the several phases of the job loss experience.

Cases and subsets	Means by phases (standard scores)				
	Anticipation	Termination	6 Months	12 Months	24 Months
All cases	0.33	0.24	0.05	0.11	-0.16
Baker (urban plant)	0.60	0.88	0.03	-0.02	0.02
Dawson (rural plant)	0.11	-0.26	0.06	0.22	-0.29
Less unemployment	0.26	0.51	0.19	0.21	-0.30
More unemployment	0.31	-0.08	-0.06	0.02	-0.04
Fewer job changes	0.48	0.28	0.22	0.37	-0.04
More job changes	0.06	0.11	-0.13	-0.26	-0.31
Low social support	0.71	0.37	0.44	0.65	0.12
High social support	-0.01	0.13	-0.34	-0.44	-0.42
Low social support &					
Less unemployment	0.38	0.58	0.47	0.75	0.07
More unemployment	1.20	0.17	0.40	0.54	0.18
High social support &					
Less unemployment	0.12	0.42	-0.16	-0.50	-0.73
More unemployment	-0.36	-0.28	-0.42	-0.39	-0.20
Low social support &					
Fewer job changes	0.96	0.52	0.53	0.92	-0.03
More job changes	0.37	0.18	0.28	0.17	0.40
High social support &					
Fewer job changes	-0.15	-0.02	-0.19	-0.30	-0.06
More job changes	-0.14	0.06	-0.41	-0.59	-0.74

(or increasing) its high levels, as seen for the other deprivation scales in Table 4.8. The overall trends for the four groups can be characterized as follows: a) Men low on social support and with less unemployment show moderately high and slightly increasing levels, but come down to normal levels between 12 and 24 Months. b) Men low on social support with more unemployment are different from the previous group primarily in their very high Anticipation levels at Termination. c) Men high on social support and with less unemployment show a modest peak at Termination, but steadily decline thereafter and reach lower-than-expected levels at 24 Months. d) Men high on social support and with more unemployment reveal very little fluctuation at levels somewhat below that for controls.

Controlling on social support and number of job changes reveals findings best summarized as follows: a) Men low on social support and with fewer job changes maintain high levels throughout the first year and do not come down to normal levels until at 24 Months. b) Men low on social support and with more job changes show little fluctuation at slightly elevated levels. c) Men high on social support and with fewer job changes also show little fluctuation at levels just below those for controls. d) Men high on social support and with more job changes show average levels for the first two phases and then steadily decline to levels below those for the controls.

CHAPTER 5

PHYSIOLOGICAL CHANGES

INTRODUCTION

In the preceding chapters the basic design of the study and the pattern of the analysis have been described. In Chapter 4 very detailed analyses of the psychological variables have been presented. The same basic set of tables were prepared for the physiological variables. However, it will frequently be inappropriate to present the same degree of detail for the physiological variables. This is in large part because we know more about the nature of these physiological variables, and they can be measured in grams, centimeters and seconds, so the use of standard scores is unsuitable, for the absolute values have meaning for the reader. In addition, the numbers of men per cell varies appreciably from one variable to another, but in no case do the numbers exceed those shown in Table 4.0. When the numbers are much smaller the actual numbers will be presented. This variability is partly due to irregular and unpredictable refusals to provide samples, occasionally to laboratory difficulties and with respect to expensive determinations (catecholamines and protein bound iodine) to selection for economy. These two problems have made the uniform tabulations of the preceding chapter mostly inappropriate. Furthermore, in certain instances, it became clear that a non-parametric approach was more useful because of a truncated distribution (epinephrine) or because too much of the variance lay in the normal range and it was the frequency of over-riding the relevant servo-mechanisms that was important (blood pressure, protein bound iodine, glucose). In evaluating the results it is well to keep in mind that except where otherwise specified, the full set of tables has been examined even though only certain interesting results are presented.

The variables to be considered fall conveniently into four groups: 1) related to cardio-vascular disease; 2) waste products eliminated via the kidneys; 3) a limited set of endocrine functions; 4) uric acid, serum glucose and pepsinogen each related to a specific psychosomatic illness. They will be presented and discussed in that order.

VARIABLES RELATED TO CARDIOVASCULAR DISEASE

In a sample of this size it was clearly impossible to test the hypothesis that coronary heart disease might be more frequent among the terminees than among the controls. However, a group of risk factors has been examined and in the next chapter the data will be assembled to see to what extent it is likely that coronary disease might be found with excessive frequency in a larger sample of terminees.

Serum Cholesterol

Serum cholesterol was measured in the Auto-Technicon, using method N-24a. The technical error of the method was estimated twice. The first time 38 duplicate determinations yielded a value of 4.0 mg/dl and the second time 30 duplicates gave a value of 4.7mg/dl. Lyophilized serum standards regularly fell within the expected range. The values of those individuals taking steroids were examined and were not found to be higher than those of other individuals in the same circumstances, so there were no exclusions from the analysis.

The analysis revealed a trivial seasonal variation conforming to the usual expectation of lowered values in summer, however, the differences were not as large as those described by McDonough and Hames (1967) and were not statistically significant. There was no tendency for the values to change sequentially in the controls, for the correlation with visit number was not significant ($r = 0.07$). The mean value for the controls, mean of ipsative means, was 235 mg/dl, S.D. - 37.

In Table 5.1 the mean serum cholerterol levels are presented in milligrams per deci-liter for each of the sub groups for each of the time periods. This table follows the pattern of the tables in the previous chapter except that figures are means rather than standard scores. Because the mean does not give a clear idea of the significance of various differences, symbols have been introduced between adjacent figures, whenever the change scores are significant from one phase to the next.

The two main findings from this table are that the values for the terminees are below those for the controls, 226 mg/dl versus 235 mg/dl (not significant) during anticipation and significantly below at 24 Months, 207 mg/dl versus 235 mg/dl ($t = 4.88$ $P < 0.001$). The explanation for this difference is not immediately obvious. The second thing that is striking is that no matter how the group is divided there is always a downward trend from the beginning to the end of the study. No such trend was observed in the controls. The drop from Termination to 12 Months is significantly greater for the Dawson men than for the men of Baker plant. It is interesting that there are no more significant between-group differences than one would expect by chance in analysis of this sort. In the last two sets the interaction of social support and length of unemployment or number of job changes is not significant either in the means or the change scores. The fact that Social Support does not seem to make a difference in this analysis does not negate the earlier positive finding (Cobb, 1974), it merely suggests that the effect is marginal so it shows up in some analyses and not in others. (The previous analyses used a split between the middle and lower thirds of Social Support scores while the present one uses a median split.)

There are a variety of possible explanations of the relationship between the controls and the terminees on this variable. The first and most attractive is that terminees are rather different from the controls and have cholesterol levels that are normally lower than those of the controls. This implies that the terminee levels were significantly elevated during anticipation and returned to normal as the study progressed. The second is that the

terminees are essentially similar to the controls and that changing jobs produces an overall drop in cholesterol that lasts for a long time, though in some groups there is a tendency for the levels to be rising again by 24 Months. Without more data, either earlier or later or both, it seems impossible to distinguish between these two explanations. No doubt those who are attracted to the stress theory will conclude that the first is correct. Others thinking that the new jobs probably involved heavier work than the old will be attracted to the second.

Figure 5.1 shows the changes in cholesterol as the men move from Anticipation to either unemployment or reemployment at Phase 2 (Termination) and on to Phase 3 (6 Months). Those who went from Anticipation to reemployment and continued employed had only small and insignificant drops in their levels. By contrast, those who became unemployed at Phase 2 had an average rise of 9 mg/dl ($P < 0.05$). In the next 6 months those who become reemployed had a large drop, 24 mg/dl ($P < 0.001$), and those who remained unemployed had a drop of 11 mg/dl ($P < 0.05$). The drop to reemployment is significantly greater than the drop for those who remained unemployed ($P < 0.05$).

When Figure 5.2 is examined we find the same general set of effects. The data set is, however, somewhat different. Here we are dealing with difference scores that were obtained by taking the mean for all values for a given man while in each of the specified conditions. Then the differences between these individual state specific means were averaged across men. Thus we see that the average difference between Anticipation and the mean of all times unemployed is only 8 mg/dl as opposed to the 9 mg/dl drop from Anticipation to Termination. This is understandable in view of the drop among those who remained unemployed indicated in Figure 5.1. As was noted above the levels continued to go down as adjustment to the new job proceeded. This results in the large and highly significant drops from Anticipation to reemployment and from unemployment to reemployment.

Blood Pressure

Blood pressure presented an unusual problem of analysis for there were too many instances of referral by staff for treatment of high blood pressure. Obviously, it was unethical for the research staff to sit by and watch someone in a severe hypertensive state when treatment could protect that person's future health. Eight cases and 29 visits are influenced by this behavior so an analysis of mean blood pressure is of dubious value. If one excludes all those instances in which the person was receiving antihypertensive medication one introduces one kind of bias, if one keeps them in one gets another kind of bias. If one completely excludes those cases who at any time received medication one has a third kind of bias. There seems then to be no fully logical way to analyze mean blood pressure; we have therefore taken to counting cases of hypertension. This analysis is presented in Chapter 6. In a preliminary paper (Kasl and Cobb, 1970) we took the second approach and analyzed all available data in considerable detail. The main findings from that analysis were as follows:

a) The controls were stable over time though there were some fluctuations between and within interviews.

Table 5.1 Mean serum cholesterol levels in mg/dl by phase of the termination experience.

Cases and subsets	Means by phase: Anticipation		Termination		6 Months		12 Months		24 Months
All cases	226		232	<>	217	<>	204		207
Baker (urban plant)	226		227		222		220		215
Dawson (rural plant)	227		235	◆	214	◆	191		202
Less unemployment	225		228	>	216		211		205
More unemployment	225		233	◆	218	◆	196	>	209
Fewer job changes	230		230	>	218	>	208		208
More job changes	217		231	<>	215	<>	200		207
Low social support	227		229	<>	214		208		203
High social support	219		227	>	220	<>	202		210
Low social support &									
Less unemployment	229		227	>	215		213		205
More unemployment	222		237	>	218		208		209
High social support &									
Less unemployment	220		229		217		210		205
More unemployment	227		230	>	219	◆	188	<>	209
Low social support &									
Fewer job changes	232		237	<>	220		216		209
More job changes	216		227		211		202		204
High social support &									
Fewer job changes	227		220		214		198		206
More job changes	218	<>	233	>	218	◆	197		209

Controls, Mean of ipsative mean = 235, Standard deviation = 37.
No sequence effects, no significant seasonal effect, no important drug effects.
> $P < 0.05$
<> $P < 0.01$
◆ $P < 0.001$

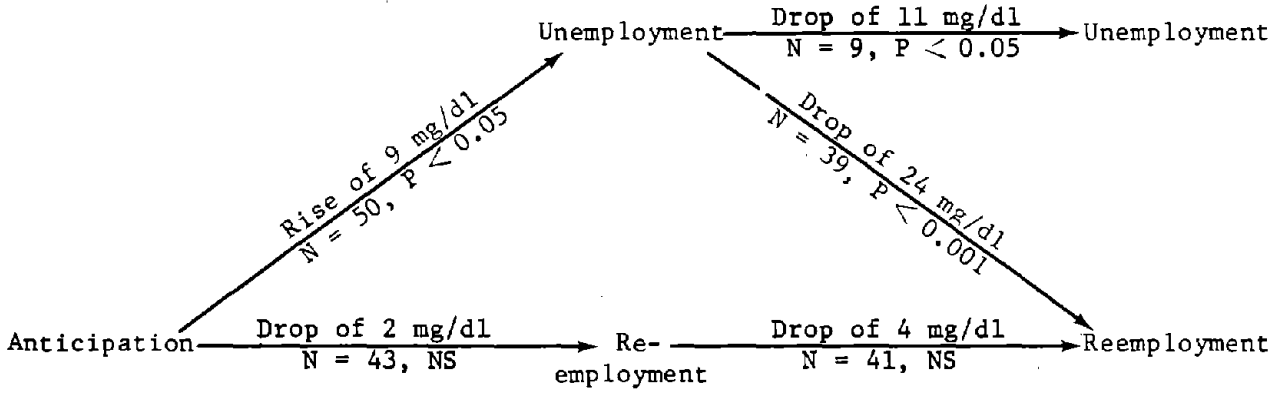

Figure 5.1 The effect of change of employment status between Anticipation and Termination and between Termination and 6 Months on mean change in serum cholesterol in mg/dl.

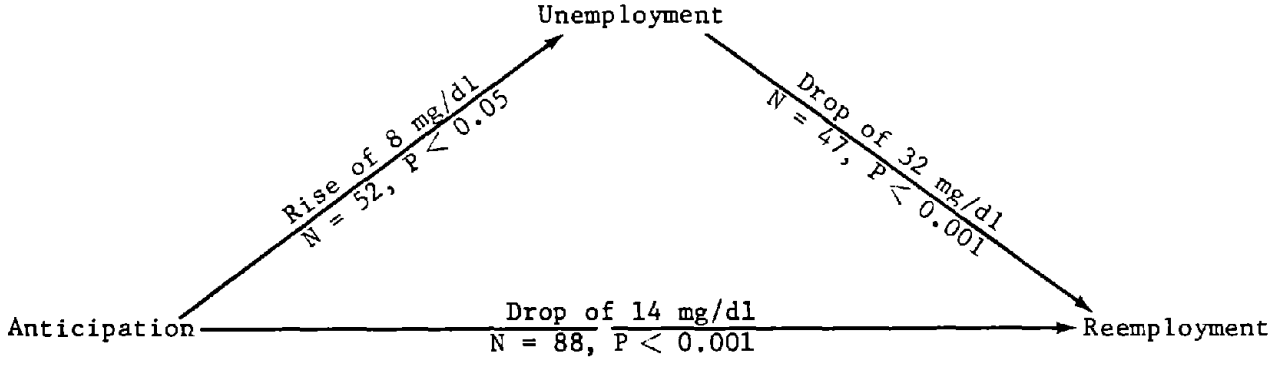

Figure 5.2 The effect of the unemployment experience on average change in cholesterol level. The difference scores were derived by taking the means of all values for a given man in each of the specified conditions and then averaging the differences between those individual means.

b) Blood pressure levels during anticipation of job loss and unemployment or probationary reemployment were higher than during the later periods of stabilization on new jobs. Anticipation alone produced as much elevation as unemployment or probationary reemployment.

c) Men whose blood pressures remained elevated longer had more severe unemployment experience, reported longer lasting subjective stress, were lower on ego resilience and failed to show much improvement in self-esteem or much reduction in irritation. These findings were more striking for diastolic than for systolic blood pressure.

d) The general pattern of response to unemployment was replicated in the second company. Further analysis adds little to these conclusions except to strengthen the last one.

In preparation for the discussion of hypertension, the procedures for blood pressure determinations will be reviewed here. The blood pressure was measured on four separate occasions during each round, to wit, at the beginning and end of each of the two visits which, as will be remembered, were two weeks apart. For analysis purposes, the mean of these four determinations was used.

The measurements were made with a mercury manometer and a velcro-fastened cuff 5½ inches wide containing an inflatable bag, 8 3/4 x 4 3/4 inches, and were read to the nearest even number. The subject was always seated. He was usually at a standard height table and the right arm was generally used. Both diastolic muffling and disappearance were recorded but only the disappearance was used in the analysis.

The nurses were trained and tested using the London School of Hygiene training tapes (Rose, 1965). The tests revealed coefficients of intra-class correlation of 0.97 and 0.98 for systolic and diastolic values respectively. The mean errors suggest that on the average the systolic readings were o.5 mm Hg (σ = 3.4) too high and the diastolic readings were 4.4 mm Hg (σ = 4.2) high. An investigation of digit preference indicated that when the first reading of the four ended in zero, as it did more frequently than one would expect, the deviation of that reading from the mean was no larger than when it ended in any other even number. We conclude that digit preference is a consistent phenomenon that is best dealt with by analyzing blood pressure data in groups of 5 mm Hg, or merely recording to the nearest 5 mm Hg.

Pulse Rate

Pulse rate was counted at the wrist over a period of 30 seconds and the result was multiplied by 2. It was counted just before the blood pressure was taken at the beginning and end of each visit. The values for each round were averaged and the results were analyzed in the usual way. The variances are rather large so most of the observed effects were not significant. However, it is worth noting that the 53 men who went from

Table 5.2 The interaction of psychological defenses and employment status on pulse rate at the phase of termination.

Employment status at phase 2	Psychological defenses: 0		1+		Total	
	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$
Unemployed	20	87.9	33	80.2	53	83.1
Employed	26	76.2	21	77.3	47	76.1
Totals	46	81.3	54	74.1	100	80.1

Overall σ = 7.96
t for interaction = 2.71, $P<0.01$

Anticipation to unemployment at Phase 2 had an average rise of 2.4 beats per minute ($P < 0.05$) while those 47 men who went from Anticipation to reemployment had an insignificant drop of 2.2 beats per minute. The difference between the mean pulse rates at the Termination visit, for the unemployed, 83.1 and for the reemployed, 76.7, is highly significant ($t = 4.01$, $P < 0.001$). The hypothesis was then formed that the elevation among the unemployed should be primarily in those who were without psychological defenses. Stated another way, the hypothesis is that there should be statistical interaction between employment status and psychological defense. The hypothesis is supported as can be seen in Table 5.2.

Body Weight

The men varied considerably in body weight but the Dawson men weighed on the average 188 pounds when first seen as compared to the Baker men who averaged only 174 pounds ($t = 2.26$, $P < 0.05$). The changes in weight though large for some people were mostly unexplained by the available control variables. The change from anticipation to employment whether direct or via unemployment involved a trivial and non-significant loss of about a pound. Baker men lost 2.7 pounds the first year and gained 4.8 pounds during the second year. The pattern for Dawson was irregular. However, the change from unemployment to later employed phases involved an average gain of 2.2 pounds. This gain was significant at the 0.05 level, and was equally large for each company. Social support and psychological defenses did not appear to influence the pattern of weight change.

Smoking Behavior

Analysis did not reveal any meaningful changes in the amount of cigaret smoking in relation to the termination experience. Our data collection and analysis may have been a little crude (see Appendix B), but the reports received did not suggest changes over time or in relation to the stresses of the experience. It may be that people change more rapidly in the amount they smoke than they do in their reports of that behavior. If a man thinks of himself as a pack-a-day man he may not report it when he moves up to a pack and a half a day for a relatively short period.

WASTE PRODUCTS AND RENAL FUNCTION

We started with the hypothesis that renal clearance rates would vary meaningfully over time as the men went through their termination experience, so serum specimens and timed urine samples were analyzed for urea and creatinine. The respective clearance rates were calculated and the data were examined. We were encouraged to do this by the observation of Richardson & Philbin (1971), that one hour creatinine clearance rates are reasonable facimiles of the 24 hour values.

The correlations among these variables and their association with catecholamine excretion rates (see Table 5.3) suggests that they are internally consistent and that there is not an unreasonably high correlation with urine flow. This reassures us that the data are not so heavily laced with errors in measurement of urine flow as to be unusable. The reader can

Table 5.3 Correlations among urine volume, clearance rates and catecholamine excretion rates across all catecholamine determinations (cases and controls combined over all time periods).

	Correlations				
Variables	1	2	3	4	5
1 Urine flow cc/min	0.46				
2 Urea clearance	0.46				
3 Creatinine clearance	0.37	0.91			
4 Uric acid clearnace	0.36	0.67	0.68		
5 Nor-epinephrine excretion	0.21	0.59	0.63	0.35	
6 Epinephrine excretion	0.28	0.45	0.41	0.25	0.38

quickly assure himself that partialling out urine flow from the other correlations makes only trivial changes from the first order correlations. However, meaningful patterns did not emerge. It is not that there were no patterns but that they were so complex as to be uninterpretable. This led us to focus on serum levels and to look at excretion rates as a source of explanation for variations in the serum levels.

Urine Flow

Urine flow in cubic centimeters per minute, estimated over a period of at least 90 minutes, is of interest despite some borderline significant confounding with season. The simple information as to whether coffee was consumed in the preceeding three hours did not make an appreciable difference in urine flow. Probably the coffee consumption would have to be tackled at a more detailed level in terms of timing and amount to demonstrate its well known diuretic effect.

During the phase of Anticipation, the urine flow of the Baker men was elevated ($t = 3.77$, $P < 0.001$) above the level for controls. By 24 Months their flow had fallen to below that for the controls; an obviously significant drop. For the Dawson men, there was an insignificant decrease from Anticipation to 24 Months.

Serum Urea Nitrogen

Serum urea nitrogen determined by Technicon Method 15C, was analyzed with respect to all the various control variables indicated in Table 5.1 and no signficant changes with time were identified. In fact no meaningful changes of any sort were uncovered. There was a small but consistent urban-rural difference. The possibility that this was a technical artifact could not be ruled out, since the rural samples were run later than the urban samples. It is reassuring to have one variable in the set which is totally unresponsive to the environmental events under consideration.

Serum Creatinine

Serum creatinine is the next variable. It was determined in the auto-analyzer by Technicon Method N11B. The technical error of the method determined from 40 duplicates is 0.07 mg/dl. The creatinine level in the serum has generally been assumed to be a very stable characteristic of the individual, influenced primarily by renal disease. As reported earlier (Cobb, 1974), the mean level in the controls was not subject to seasonal or sequence effects. There were a few outlying values, but they were not removed because there was no clear evidence that renal failure was involved.

The details of the analysis are laid out in Table 5.4. The most striking finding is depicted in Figure 5.3, namely the highly significant drop from 6 Months to 12 Months. This occurs in both companies and in essentially every subdivision of the material. It is followed by a rise to the final value at 24 Months that is a little less consistently significant though uniformily present. The only inconsistency is the large rise among the men of the Dawson plant at 6 Months. This peak was significantly greater for

Table 5.4 Mean serum creatinine levels in mg/dl by phase of the termination experience controlled for specified variables.

Cases and subsets	Means by Phase: Anticipation	Termination		6 Months		12 Months		24 Months
All cases	1.12	1.13	<>	1.23**	◆	1.05*	<>	1.19
Baker (urban plant)	1.14	1.10		1.07	<>	0.98***◆		1.12
Dawson (rural plant)	1.10	1.16	<>	1.34***	◆	1.10		1.23
Less unemployment	1.12	1.10	<	1.18	◆	1.01	<>	1.12
More unemployment	1.12	1.15		1.28**	◆	1.08	<	1.24
Fewer job changes	1.11	1.15		1.25*	>	1.08	<>	1.22
More job changes	1.13	1.11	<>	1.22*	◆	1.01**	◆	1.14
Low social support	1.14	1.12		1.24	<>	1.01**	<>	1.14
High social support	1.11	1.14	<	1.22*	◆	1.08		1.23
Low social support &								
Less unemployment	1.15	1.07		1.16	<>	0.98*	<	1.11
More unemployment	1.12	1.18		1.32	>	1.06		1.18
High social support &								
Less unemployment	1.08	1.13		1.21	<>	1.05	<	1.14
More unemployment	1.13	1.15		1.24*	<>	1.09		1.29
Low social support &								
Fewer job changes	1.12	1.13		1.28	>	1.02		1.10
More job changes	1.17	1.11		1.18	<>	1.00*	<>	1.21
High social support &								
Fewer job changes	1.11	1.18		1.21		1.14		1.39
More job changes	1.10	1.11	<	1.24*	◆	1.02*	>	1.10

Mean of ipsative means for controls $\bar{x} = 1.130$, $\sigma = 0.169$, N = 73
* Significantly different from controls $P < 0.05$
** Significantly different from controls $P < 0.01$
*** Significantly different from controls $P < 0.001$
> $P < 0.05$
<> $P < 0.01$
◆ $P < 0.001$

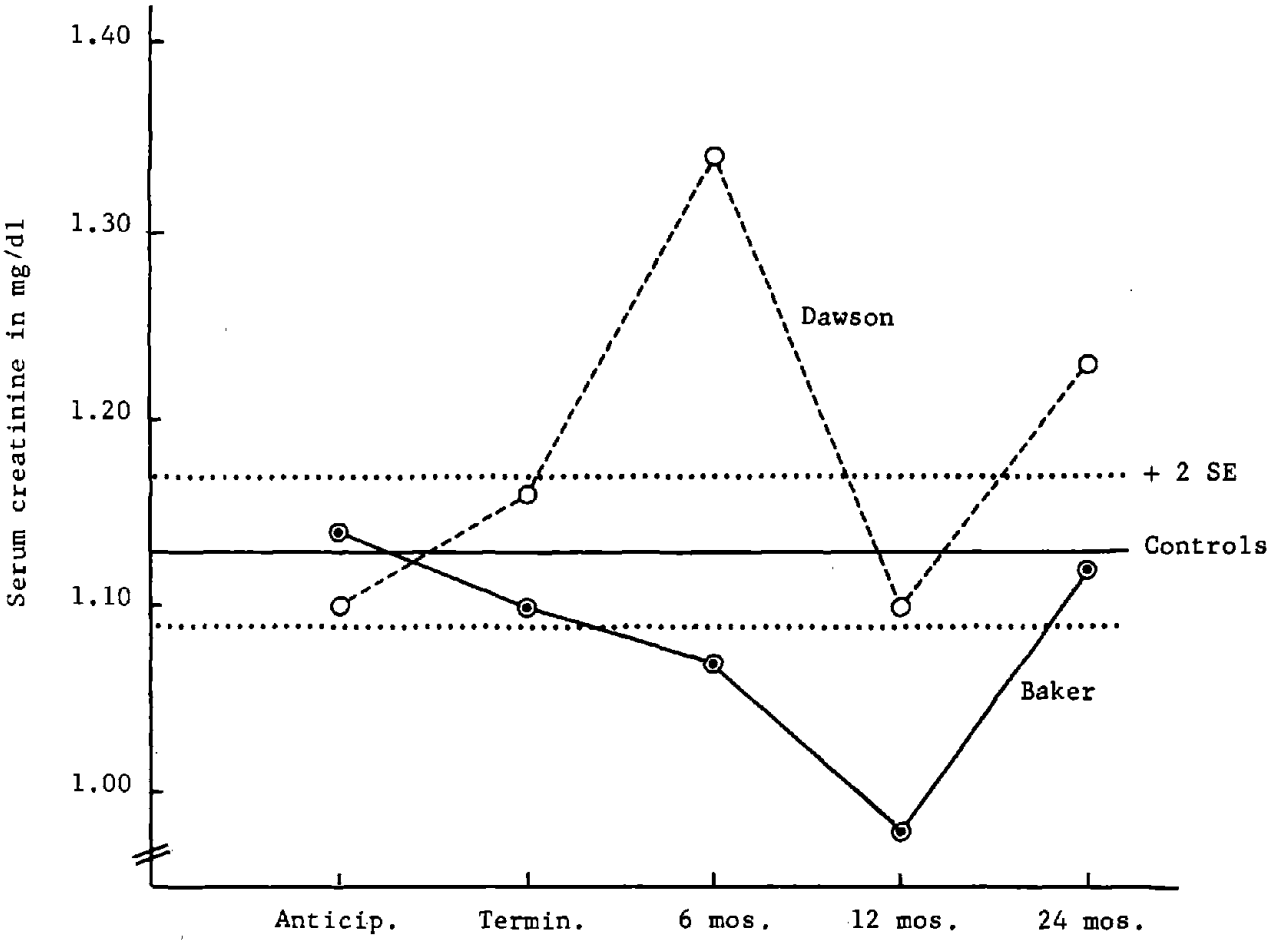

Figure 5.3 Serum creatinine levels by company compared with controls.

those Dawson men with one or more psychological defenses, but this by no means explains the peak.

The pattern in Figure 5.3 remains unexplained even after considerable examination. It is not explained by any of the events we have been considering nor by any of the control variables. If we had not already ruled out seasonal effects we might have considered that as a possibility for explaining the peak at 6 Months, but it certainly would not have explained the significant low at 12 Months.

The consistency of the drop at 12 Months cannot be a laboratory artifact for the determinations on the respective companies were done about a year apart and a systematic error affecting the twelve month samples, but not those before or after and not the controls done at the same time, is highly improbable.

Examination of the excretion rate data suggests that the changes are largely due to changes in production rate, for the estimated mean excretion rates were highest in Dawson men at 6 Months and lowest in Baker men at 12 Months. Clearly when both serum levels and excretion rates are high, production must also be high and vice versa.

These highly significant, but rather curious, findings must be interpreted with caution, because they were unexpected and remain unexplained. They do suggest that serum creatinine levels are worthy of further investigation in relation to social and psychological factors. In this connection it is worth remembering that Levi (1972) found creatinine excretion to be higher on days when subjects were working on a piece work basis than when they were working on a salaried basis. If creatinine is elevated by some set of job stresses one might speculate that the drop to 12 Months was the honeymoon effect on the new job and that by 24 Months the honeymoon was over. This is of course rank speculation but it is intended to provoke those of an investigative turn of mind to pursue this matter.

Uric acid will be considered in the final segment of this chapter.

MEASURES OF NEURO-ENDOCRINE FUNCTION

In this section we will deal with the urinary catecholamines nor-epinephrine and epinephrine and with protein bound iodine which is a measure of thyroid function. In both instances, funds were insufficient to analyze all the available samples. The procedures for selecting will be noted in the appropriate places.

Nor-epinephrine

In the past, studies of social and psychological influences on urinary catecholamines have mostly been done on patients (Cohen, et al., 1961; Sloan, et al., 1966; Theorell, 1970) or in the experimental laboratory (Frankenhaueser, 1971). Relatively fewer studies have been done in the natural environment as was done, for instance, by Klimmer, et al. (1972), we undertook to examine the variation in catecholamine output in timed urine specimens

taken on individuals at home over the course of the health visit. The basic hypothesis was that the average nor-epinephrine excretion rate would be elevated in those men whose jobs were abolished during the phases of Anticipation, Termination and Readjustment (6 months after the Termination), but that they would return to normal at least by 24 months after the Termination.

The men were asked to void at the beginning of the visit and the time was noted. They generally remained seated during the interview which lasted at least 90 minutes. At the end of the interview, they were asked to empty the bladder completely into the bottle provided. The specimens were acidified and iced immediately. On return to the laboratory, always within seven hours, the specimens were measured and aliquots were frozen. At a later data, nor-epinephrine was determined fluorometrically by a method slightly modified from that of von Euler and Lishajko (1961). The 24 recoveries averaged 96% $\pm$ 7%; the test retest correlation on 16 duplicate determinations was 0.88; and 55 repeat determinations on 4 specimens suggested that 95% of repeat determinations would lie within $\pm$ 12% of the mean for the sample.

Before starting the analysis it was necessary to look for extraneous sources of variance. Six specimens on three men (two terminees and one control) were rejected on the basis of drugs that would influence the results. Two men were taking rauwolfia and one was taking quinidine. Two cases continuously on orinase were indistinguishable in level and pattern from the rest, so they were not excluded. With respect to those occasions on which alcoholic beverages, primarily beer, were drunk within three hours of the urine collection, there was no clearly definable pattern. Since these cases did not increase the overall variance appreciably, it was decided not to exclude the relevant specimens. Likewise, extremes of urine flow and of creatinine clearance did not appear to increase the variance so no further cases were rejected. There was no main effect of tobacco, but as will be seen below, caffeine-containing beverages, primarily coffee, had an interesting interaction with the environmental stress.

With respect to time of day, all the specimens were collected between 10 a.m. and 10 p.m. There was a slight tendency for afternoon specimens from control men to average higher (35γ/min.) than late morning (29γ/min.) or early evening specimens (26γ/min.), but the differences were not significant and there was not any serious confounding of the time of day that the specimen was taken with variables of interest. In particular there was no tendency for the specimens of later phases to be taken at a different time of day from those taken at earlier phases. Though the number of control specimens was only 49, they were well distributed over the seasons and there was no obvious seasonal variation. It was expected that there would be a novelty effect as noted by Tolson, et al., (1965), but the change over time in the controls was irregular and the slope of the regression on visit number was not significantly different from zero ($P < 0.06$).

After thus clearing the decks we felt prepared to go ahead with the analysis. Multiple specimens were analyzed on 39 of the 100 terminees, but there were some specimens missing at every phase except at the 24 Month visit. At that 24 Month visit, specimens from an additional 22 men were analyzed to increase

the power of the test of the hypothesis that by that time the terminees would have returned to normal. A few of these 22 men were for various reasons not included in the final sample of 100 terminees; however, there was no reason to believe that their 24 Month catecholamine levels would be influenced by the irregularities in their experience or reporting. Finally, 49 specimens on 23 of the 74 controls were available for analysis. Two men gave five specimens each, nine men each gave three specimens and twelve men gave one specimen each. The subsetting for nor-epinephrine was not entirely random. Rather, there was a bias in favor of the more cooperative who provided us with the most complete set of specimens.

Because of the small numbers, a full analysis as in Table 5.1 was not possible. As will be seen, it is however possible to do some collapsing and derive some interesting findings. These nor-epinephrine data were reported earlier (Cobb, 1974) and are presented here using the somewhat more conservative approach adopted for this monograph; namely two-tailed significance tests and mean of ipsative means rather than means across all specimens in a particular cell. Because the within person variance is so large the conclusions do not change appreciably.

Table 5.5 shows that nor-epinephrine output was elevated through 12 months when compared to the controls and only at the Termination visit was the difference not uniformily statistically significant. The mean value at 24 Months, 29.5γ/min.,(S.D. = 17.2) is remarkably close to the mean of the ipsative means for the 23 controls, 28.4γ/min., (S.D. = 12.5). Incidentally, the urines for the 22 men who were added at the 24 Months visit had a mean of 27.4γ/min., so it is clear that these later additions were not different from the men who were in from the beginning. Furthermore, the difference between Baker and Dawson is not significant at any phase, and none of the change scores are significant.

Observing that neither the between company differences nor the change scores were significant, it seemed reasonable to combine the data from the phases of Anticipation and Termination; and from 6 Months with 12 Months. Ipsative, that is within man, means were calculated for each of the resulting two periods and these were used as the basis for the further calculations. In Table 5.6, which lies immediately below 5.5 on the same page, one can see the result of this collapse. Here all the differences from controls are at least borderline significant ($P < 0.05$) and the difference between Baker and Dawson at Anticipation and Termination is reliable at the $P < 0.05$ level. In terms of change scores, only the change from Anticipation and Termination to 24 Months for the total group is significant at $P < 0.05$ though the change from 6 Months and 12 Months to 24 Months is extremely close to significant at this level.

Analysis of the effect of Number of Job Changes and Social Support proved unrewarding but the examination of the relationship to weeks of unemployment led to interesting further analysis. The results shown in Table 5.7 are not significantly different by number of weeks of unemployment, but are sufficiently striking to arouse some curiosity because they run counter to the original hypothesis. Though the men with less unemployment have significantly elevated levels of nor-epinephrine excretion at both periods,

Table 5.5 Mean excretion rates of nor-epinephrine in gamma/min by phase of the terminees experience by company.

Company	Phase									
	Anticipation	(N)	Termination	(N)	6 Months	(N)	12 Months	(N)	24 Months	(N)
All cases	45.6*	(30)	42.8	(28)	45.4**	(23)	43.2*	(32)	29.5	(50)
Baker Urban plant	69.1**	(7)	59.7*	(7)	52.3**	(8)	50.8**	(6)	29.0	(27)
Dawson Rural plant	38.4*	(23)	37.2	(21)	41.7*	(15)	41.5*	(26)	30.0	(23)

Controls (N 23) $\bar{x}$ 28.4 σ = 12.5

Table 5.6 Means of ipsative mean excretion rates of nor-epinephrine gamma/min by grouped phases of the terminee experience.

Company	Phase					
	Anticipation & Termination	(N)	6 Months & 12 Months	(N)	24 Months	(N)
All cases	48.2*	(34)	43.1*	(33)	29.5	(50)
Baker Urban plant	71.9**	(8)	53.5***	(7)	29.0	(27)
	>					
Dawson Rural plant	41.0*	(26)	40.3*	(26)	30.0	(23)

Drop for all cases from Anticipation and Termination to 24 Months
t = 2.10
P < 0.05

* P < 0.05 for difference from controls
** P < 0.01 for difference from controls
*** P < 0.001 for difference from controls

> Difference between rows is significant P < 0.05.

Table 5.7 Means of ipsative mean excretion rates of nor-epinephrine in gamma per minute by grouped phases of the termination experience by weeks of unemployment in the 12 months following termination.

	Phases					
Weeks of unemployment	Anticipation & Termination	N	6 Months & 12 Months	N	24 Months	N
Less	56.9*	(17)	49.0*	(16)	33.0	(23)
More	39.6	(17)	37.6	(17)	25.8	(24)

* P<0.01 for difference from controls

Table 5.8 The effect of nor-epinephrine excretion rate during anticipation on the subsequent length of initial unemployment, for those who didn't drink coffee.

	Initial unemployment in weeks			
Nor-epinephrine γ/min., phase 1	<4	4-12	13+	Total
< 15	...	...	2	2
15-29	1	5	2	8
30-49	4	3	...	7
50+	2	1	...	3
Total	7	9	4	20

gamma = -0.95 P < 0.01

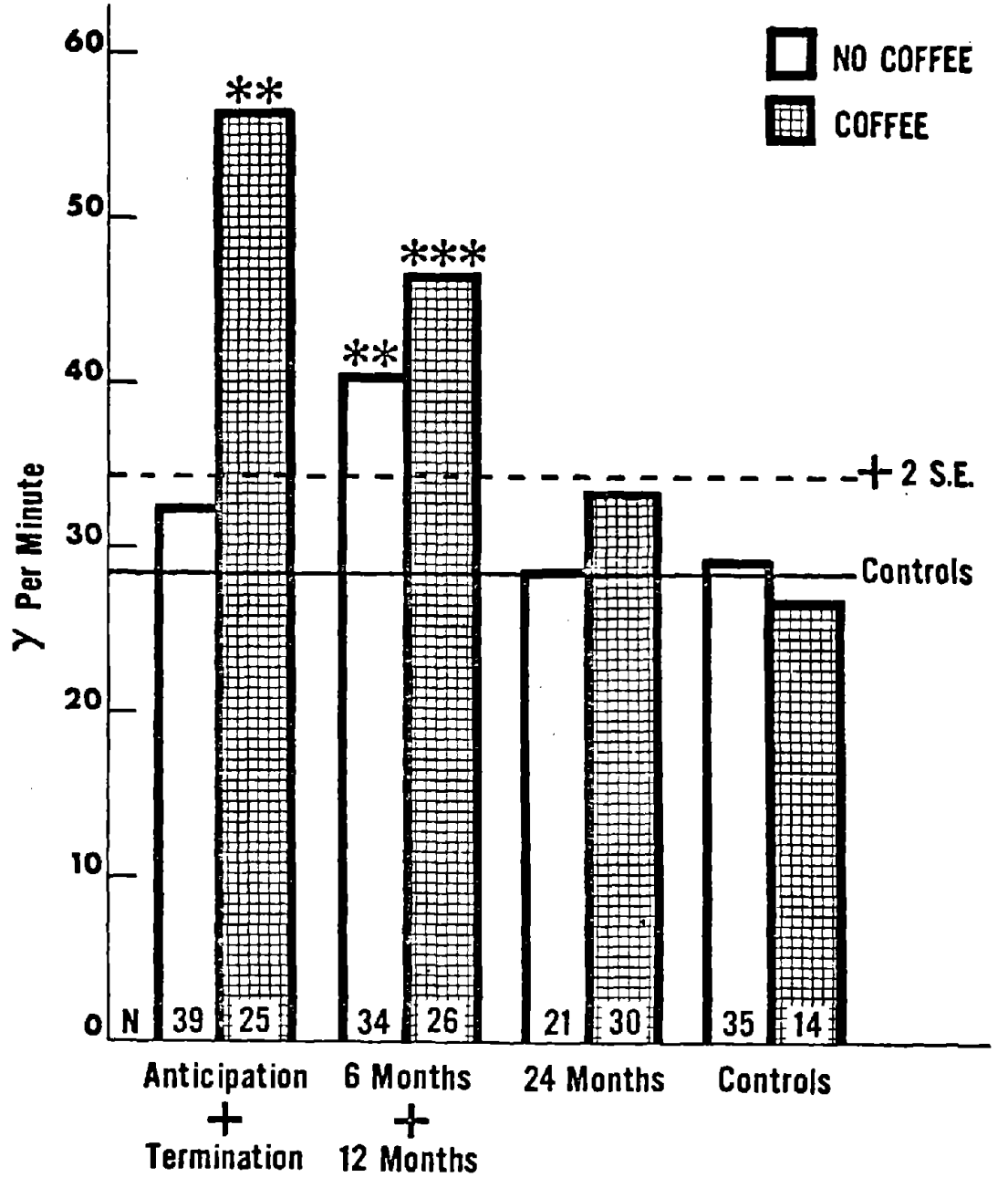

Figure 5.4 Nor-epinephrine excretion rate in γ per minute by phase and by whether or not coffee or another caffeine-containing beverage was taken in the last three hours. N equals number of observations. ** $P < 0.01$; *** $P < 0.001$; 1.tail. (Reproduced with permission from Psychosomatic Research Vol. 18, 1974.)

Table 5.9 The effect of coffee on the ipsative mean excretion rate of nor-epinephrine in gamma per minute for the anticipation and termination visits.

Effect of coffee	Number of men	$\bar{x}$	σ
No coffee at any of the observations in anticipation and termination	14	33.3	17.2
Coffee at one time, no coffee at the other	10	39.6	19.1
Coffee at all of the observations in anticipation and termination	10	77.8	47.3

$F = 7.18$ df 2,31 $P<0.005$
Coffee vs. no coffee $t = 3.10$ $P<0.01$

the differences between those with less and those with more are not significant and none of the change scores are significant.

The above finding rather suggests, but certainly does not prove, that those with elevated nor-epinephrine rates may try to avoid unemployment. A refinement of the hypothesis would be to predict that men who have elevated excretion rates at Anticipation would have the shortest time of unemployment prior to taking their first jobs. Since as we will see below, coffee tends to interact with termination stress to produce excessive levels, we will confine our attention in Table 5.8 to those men who have had no caffeine-containing beverage in the three hours preceeding the urine sample. The result, though the numbers are small, $N = 20$, is a striking association $\gamma = -0.95$, $P < 0.01$. This leads us to believe that those people who were aroused to the point of elevated nor-epinephrine output during the period of anticipation, were particularly likely to take the first job offered. Though these men avoided unemployment they did not avoid further job changes. They had about as many job changes per man as did those with less elevated levels.

Finally, we came to the issue of coffee and other caffeine containing beverages. It has been repeatedly observed that caffeine increases the excretion rate of catecholamines (Klimmer, et al., 1972; Levi, 1967; Bellet, et al., 1969). Figure 5.4 reproduced from (Cobb, 1974) is interesting because it simply does not confirm this finding for those who are relaxed at home. Furthermore, the finding is replicated in two different groups, the controls and the terminees, at 24 Months. At the 6 months and the 12 months periods, the differences between the coffee drinkers and others is equivocal, but during Anticipation and Termination the effect appears striking and is significant. It is important to note that this analysis is based on individual samples using the logic that, since the sum of squares within is as large as the sum of squares between people, taking samples or people as the unit of analysis should yield the same result. Also the significance levels are based on one tailed t-tests. The important point to be derived from this figure is that for those who were relaxed at home there was no difference in nor-epinephrine excretion rate between those who took coffee or other caffeine-containing beverage in the three hours preceeding the urine sample and those who did not, if they were relaxed at home.

It is now appropriate to make a more conservative examination of the evidence that there is an effect of coffee during the period of Anticipation and Termination. Table 5.9 presents the data. Those men who took no caffeine beverage at either time had a mean of 33.3γ/min. and those who took it both times averaged 77.8γ/min. The difference between the coffee and no-coffee groups are large and reliable, $P < 0.01$. It would appear that for those who are already aroused caffeine produces a large increase in nor-epinephrine output, but for those who are relaxed at home it does no such thing. This suggests that more of our neuro-endocrine research should be done on persons who are relaxed at home rather than on those who are anxious about the experimental procedure in an unfamiliar surrounding.

Table 5.10 The effect of caffeine on mean of ipsative mean epinephrine excretion rates in gamma per minute by grouped segments of the termination experience.

	Effect of caffeine							
	Coffee at all relevant visits		Coffee at some visits and not at others		No coffee		F	P
Phases	N	$\bar{x}$	N	$\bar{x}$	N	$\bar{x}$	F	P
Anticipation & termination	10	19.4*	10	6.3	14	4.3	11.65	<0.001
6 Months & 12 Months	9	6.8	9	12.9	15	7.2	2.0	NS
24 Months	15	6.9	0	...	34	4.9	...	NS
Controls	5	5.2	4	4.1	14	5.0	...	NS

* P<0.001 for difference from all controls.
Change to 24 months = P<0.01.

Table 5.11 Frequency distribution of epinephrine excretion rates in gamma per minute at anticipation and termination by amount of unemployment during the first 12 months following termination.

	Epinephrine excretion rate gamma/minute				
Amount of unemployment	<3	3-6	7-24	25+	Total
Less	2	5	5	5	17
More	6	6	5	0	17
Total	8	11	10	5	34

γ = -0.58 P<0.05
Note: The coffee drinkers are almost exactly equally distributed between the two groups.

Epinephrine

Epinephrine was determined in the same procedure and on the same samples as nor-epinephrine, (18 recoveries $\bar{x}$ = 89%, test-retest correlation = 0.41, N = 21). No seasonal or sequence effects were noted. No tobacco effect could be identified but smoking was so confounded with coffee drinking that it was difficult to be sure. With the exception of a few cases of laboratory difficulty the set of men and visits is identical with that used in the nor-epinephrine analysis.

The most important finding is that caffeine has an effect on epinephrine similar to and more striking than the effect on nor-epinephrine (see Table 5.10). Again there is no effect on men relaxed at home, be they controls or terminees, 24 Months after the plant closing. In fact, there is also no discernable effect during the period 6 to 12 Months after Termination. However, during the combined period of Anticipation and Termination essentially all the elevation occurs in those who took coffee or other caffeine-containing beverages at all the relevant visits. The mean of the ipsative means for the 10 men who drank coffee at that time was 19.4γ/min. as opposed to 4.9γ/min. for the 23 controls. The difference is highly significant, $t = 4.79$, $P < 0.001$. The mean change score for the nine coffee drinking men with determinations done both at Anticipation plus Termination and at 24 Months was also significant, $t = 3.91$, $P < 0.01$. This demonstration that both of these catecholamines respond in the same way to caffeine strongly suggests that this is not a casual finding.

The finding with respect to the other usual variables of the analysis are either uninteresting or hopelessly confounded with coffee drinking. There is, however, one exception and that is the amount of unemployment. This variable is completely independent of coffee and the same association of less unemployment with high excretion rates at the early visits that was seen for nor-epinephrine is found here. The data are presented in Table 5.11. The association is measured by Goodman and Kruskel's gamma as -0.58, $P < 0.05$. The relationship of the epinephrine rate to the length of the period to first full-time job is similar to that found for nor-epinephrine but is not significant.

Protein Bound Iodine

Protein bound iodine was used as a measure of thyroid function. The determinations were done by the method of Barker, et al., (1951) in another laboratory. The technical error of the method was 0.2 mg/dl based on 40 duplicates. Those with known iodine ingestion determined from the drug and xray questions, were excluded. T-3 determinations were performed on all high values and on a sample of low values. The correlation between the two approaches to assessing thyroid function was 0.96, across 80 samples.

Protein bound iodine was determined for the first year on the terminees in the Baker plant and on the urban controls. Because of budgetary restrictions placed on us in later stages of the study these determinations could not be continued. Only two simple facts can be gleaned from the limited analyses

that are possible. The first is that, as a variety of observers have reported, e.g., Thompson & Knight (1963), the protein bound iodine level is higher in the cold than in the warm months. The second is that consistent with the observation of Levi (1972) this is a variable that is responsive to environmental stress. The data are too thin to be worth presenting in detail. However, it should be noted that 29% of 41 terminees as opposed to 5% of 38 controls had a value of 7.0 mg/dl or greater in either the first or second phase ($t = 3.03$, $P < 0.01$). Furthermore, 4, or 10%, of the terminees but none of the controls exceeded 8.0 mg/dl. Since the terminations took place in December, all the Phase 1 and Phase 2, Anticipation and Termination, observations were in the cold months. The observations were in the cold months. The observations for the controls were more evenly distributed throughout the year so the seasonal effect is contributing slightly to this finding.

FUNCTIONS RELATED TO OTHER DISEASES

Diabetes (Hinkle & Wolf, 1956), peptic ulcer (Weiner, et al., 1957) and gout (Mueller, et al., 1970) have all been thought to have some connection with social stress. Since none of them, with the possible exception of ulcer disease, occur with sufficient frequency for study in a sample of this size, relevant physiological paramenters have been selected. Serum glucose will be discussed first. This will be followed by a discussion of pepsinogen, the stomach enzyme that is relevant to ulcer disease. Finally, uric acid, the cause of gout, will be examined.

Serum Glucose

Serum glucose was measured at each round in the autoanalyzer by method N2B. The technical error of the method was 1.9 mg/dl on 40 duplicate determinations. During the interview, data were obtained about all food and drink ingested in the preceding three hours. The serum values for glucose average about 10% higher than those for blood, so that a serum glucose of 130-135 mg/dl would be the upper limit of usual range for post-prandial values.

Initially these data were analyzed as if serum glucose were a continuous variable, taking into account the amount eaten in the last three hours. The results suggested the findings to be presented below but the variances were so large that no statistically valid conclusions could be drawn. As we thought about the matter, we realized that the bulk of the variance was in the range usually considered normal, i.e., the range maintained by the normal servo-mechanisms. The important thing was the over-riding of these servo-mechanisms and the achievement of clearly elevated levels.

In an arbitrary fashion it was decided to select 130 mg/dl as the level of concern, to neglect the issues of recently ingested food and known diabetes, and to count the proportion of men reaching or exceeding this level at any time during the study. The level of 130 mg/dl might seem a little low but we wanted to have enough cases for reasonable statistical testing. Twenty percent of the controls exceeded this level at some time during the study. There were 6 known diabetics among the 74 controls (8%) and 4 among the terminees (4%). Eliminating the diabetics would not have affected the

Table 5.12 The percent of men who had a serum glucose level of 130mg/dl or greater at any time during the study, by company and stress level.

Company and number of job changes	Percent of time unemployed					
	< 10%	N	10% +	N	Total	N
Baker						
0-2	0%	(13)	43%	(7)	15%	(20)
3+	27%	(11)	43%	(7)	33%	(18)
Total	12%	(24)	43%	(14)	24%	(38)
Job changes t = 1.30	NS					
Time unemployed t = 2.16	P<0.05					
Dawson						
0-2	15%	(13)	24%	(17)	20%	(30)
3+	60%	(5)	58%	(12)	59%	(17)
Total	28%	(18)	38%	(29)	34%	(47)
Job changes t = 2.79	P<0.01					
Time unemployed t = 0.64	NS					
Baker vs. Dawson t = 1.02	NS					
Total						
0-2	8%	(26)	29%	(24)	18%	(50)
3+	38%	(16)	53%	(19)	46%	(35)
Total	19%	(42)	37%	(43)	29%	(85)
Missing data = 15						
Job changes t = 2.80	P<0.01					
Time unemployed t = 1.83	NS					

Table 5.13 The percent of terminees who had a serum glucose level of 130 mg/dl or greater at any time during the study, by psychological defense and stress level.

Defense and number of job changes	Percent of time unemployed					
	< 10%	N	10% +	N	Total	N
No defenses						
0-2	5%	(20)	38%	(8)	14%	(28)
3+	40%	(10)	88%	(8)	61%	(18)
Total	17%	(30)	56%	(16)	33%	(46)
One or more defenses						
0-2	17%	(6)	25%	(16)	23%	(22)
3+	33%	(6)	27%	(11)	29%	(17)
Total	25%	(12)	26%	(27)	26%	(39)

Missing data = 15

Proportion low stress (20/46 vs. 6/39)	t = 2.82	P<0.01
No defense, time unemployed	t = 2.78	P<0.01
No defense, job changes	t = 3.43	P≈0.001
High stress, no defenses 88% vs. 1+ defenses 27%	t = 2.89	P≈0.01

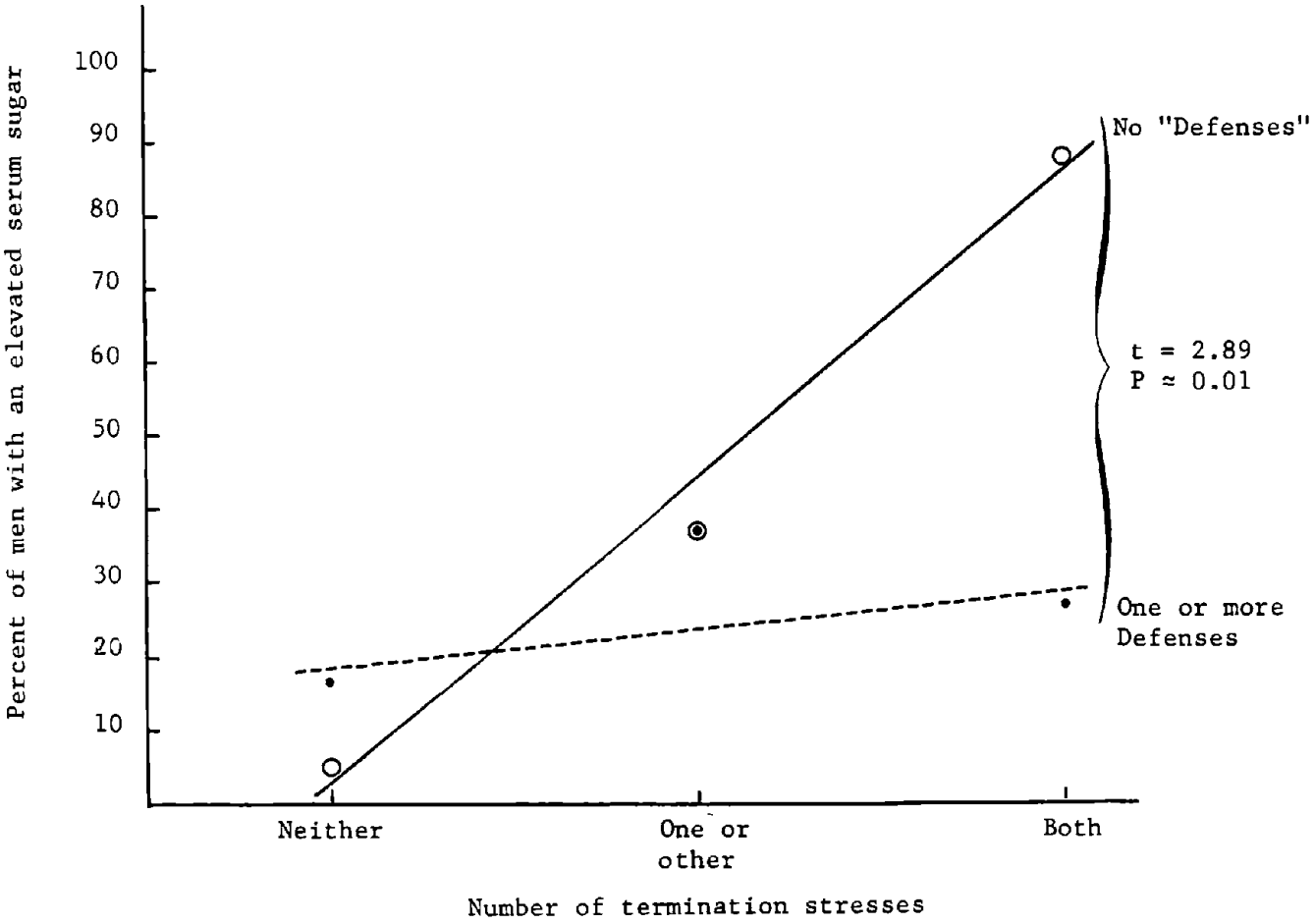

Figure 5.5 The effect of degree of termination stress on the probability of having an elevated serum sugar among those with and without "Psychological Defense".

conclusions. In retrospect it would have been interesting if we had had the challenge of food for all cases but, of course, we had to visit the subject at a time convenient for him. It would, of course, have been possible to use a lower cut off point for those who had not taken a meal in the last three hours. If we had used 120 mg/dl for those visits not preceeded by a meal, we would have added three cases; and identified two more at an earlier phase of the study. These cases would not have altered the conclusions. Perhaps this is a good point at which to remember that the interviews tended to recall and focus on the unpleasant aspects of the whole experience, so the physiological state during the interview may well not be representative of the interval from phase to phase. The blood sample was drawn at the end of the interview.

The bottom segment of Table 5.12 shows that of the 85 terminees on whom adequate data were available, 25 or 29% had an elevated blood sugar at some time during the study. This is not strikingly greater than the experience of the controls (20%) especially when one considers that many of the controls were visited on only three occasions. However, as one examines the body of the table one finds that there is a very considerable relationship to the job loss experience. The group experiencing few job changes and little unemployment is seen to have only 8% of persons with an elevated blood sugar, as opposed to the group with many job changes and more time unemployed, of whom 53% had at least one elevated blood sugar. The upper parts of the table show the effects to be present in both companies to an approximately equal extent.

The next table, 5.13, shows that blood sugar elevations are strongly influenced by out measure of psychological defense. The first thing that strikes one is that those with no defenses had a substantially and significantly larger proportion of persons in the lowest category of stress, 43% (20/48) as opposed to only 15% (6/39) among those with one or more defenses. It seems natural for those with inadequate psychological defenses to protect themselves by avoiding stressful situations. The second thin that is apparent is that while among those with one or more defenses neither termination stress has any effect, among those with no defenses; both main effects are significant. Perhaps the best way to see what is going on here is to look at Figure 5.5. Here the assumption is made that many job changes are equivalent to much unemployment and that the average effect is assigned to the one or the other category. It is clear that the regression of percent with elevated blood sugar on employment stress level is much steeper for the "undefended". Social support did not make any difference.

This result is interesting for its implications for the practice of medicine. It suggests that an elevated <u>blood</u> sugar (120 mg/dl or greater) is reason to inquire about environmental stress before starting to worry about diabetes. The analytical experience is also instructive because it has revealed the failure of mean glucose levels to bring out the important truth residing in the data. Hopefully this approach of counting people with elevations rather than averaging levels will be used in future studies of stress and blood sugar.

Pepsinogen and Uropepsin

Pepsinogen and uropepsin are the same substance. The only difference is that pepsinogen is measured in the serum and uropepsin in the urine. This precursor of a protein digesting enzyme comes from the lining of the stomach. Peptic ulcer is thought to be unduly frequent among persons with either pepsinogen or uropepsin, or both, elevated (Weiner, et al., 1957; Mirsky, et al., 1952).

The pepsinogen determinations were done by the method of Mirsky, et al., (1952) adapted to the use of only 1 cc. of serum. The technical error of the method ranged from 10 to 26 units. There were no significant sequence or seasonal effects. The data are presented by company and by phase in Figure 5.6. The patterns are so remarkably similar as to suggest that they must have some meaning. The rise between 12 and 24 Months after Termination for the Dawson men is a significant change ($t = 3.37$, $P < 0.01$). So also is the rise for the Baker men at this time ($t = 2.02$, $P \simeq 0.05$). The meaning of this striking terminal rise is not clear. No such late rise occurred in the controls and it is unlikely that this is a methodologic artifact for the determinations on the two companies were done at different times, about a year apart. The rise from Anticipation to Termination is significant only for Dawson ($t = 2.92$, $P < 0.01$).

As is obvious from the diagram, the variances are large, as are the between group differences. This fact makes evaluation of the effects of the termination stress and of the control variables difficult. Essentially no further patterns that are both meaningful and statistically significant emerge.

The uropepsin determinations were done by the method of West, et al., (1952). This procedure is difficult because the endpoint of paracasein deposit on the walls of the test tube is difficult to read. Furthermore, we had considerable difficulty obtaining and maintaining a satisfactory source of milk to use as the substrate. For these reasons, only the urines from the Baker plant and from the urban controls were examined. There were no sequence or seasonal effects in this rather small control group.

The results are presented in Figure 5.7. These results do not make much more sense than the pepsinogen results but the drop from 12 to 24 Months is highly significant ($t = 4.62$, $P < 0.001$) and the peak at 12 Months is significantly different from the control value ($t = 2.50$, $P < 0.02$).

These results are recorded here in the hope that when these two variables are better understood an explanation of the changes will appear. The fact that the uropepsin excretions are dropping during the period when the serum levels are going up raises some interesting questions for further examination in later studies.

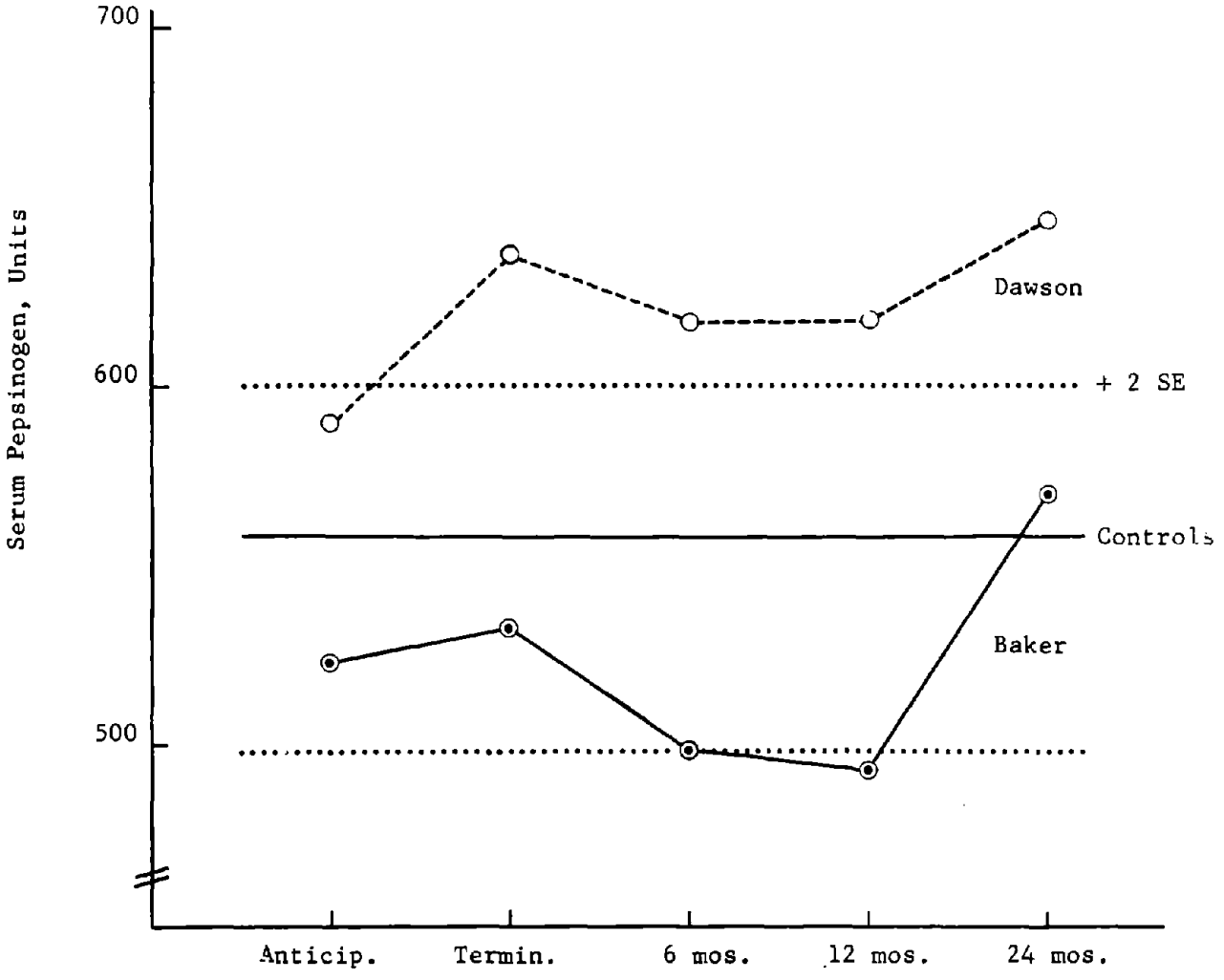

Figure 5.6 Pepsinogen levels by phase of the study for Baker and Dawson separately, and for the controls.

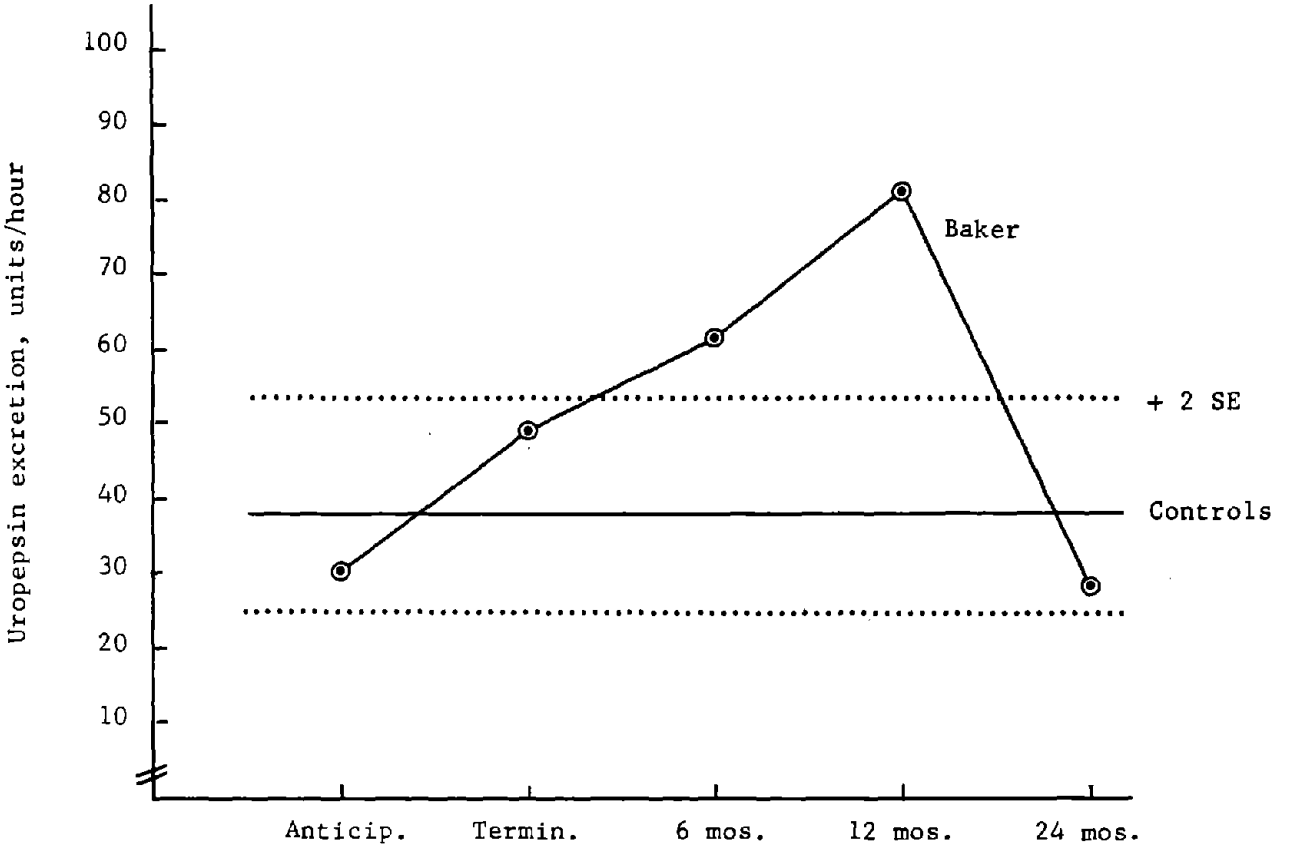

Figure 5.7 Uropepsin excretion rate in units per hour for the men of Baker plant and for the controls.

Serum Uric Acid

Serum uric acid is of interest because of its relationship to gout and because of its higher levels among people of high achieved status (Mueller, et al., 1970). There are two attractive hypotheses about the association of high status and high uric acid levels. The first hypothesis says that since about 20% of the variance in uric acid might be accounted for by heredity (French, et al., 1967) those who inherit high levels are thereby stimulated to achieve high status (Dunn, et al., 1963). The second says that elevated levels occur in response to stress, including the stressed associated with achievement. In this study, there is some evidence supporting both hypotheses.

Before examining these matters, let us look at the methods involved. Uric acid was determined by Technicon method N-136. The technical error of the method, as determined from 40 serum samples run in duplicate, was 0.06 mg/dl. The variability in urine would be somewhat greater because the urates crystalize on cooling and are somewhat difficult to redissolve after thawing. Periodic comparisons were made with the spectrophotometric uricase method (Liddle, et al., 1959). The samples ranged from 3.7 to 11.1 mg/dl and were interspersed over a period of two years. The mean for the uricase method was 6.06 mg/dl and the mean for the Technicon method was 6.04 mg/dl; and the agreement was as good at the ends of the scale as in the middle.

There were no detectable seasonal effects nor was there any tendency for the values in the controls to change systematically over time. Six terminees and two controls were taking drugs that might have affected the uric acid levels. The relevant determinations were removed from the analysis, but the effects on the conclusions were trivial.

The concept that uric acid levels might be associated with some stimulation to achievement is supported by the finding of an association of elevated uric acid levels with an aggressive approach to termination evidenced by early resignation, i.e., at own convenience rather than at company convenience. This matter could only be sensibly examined at the Baker plant because the Dawson administration was quite flexible in permitting men to resign at their own convenience. By contrast, the Baker plant was rigid and a man had to give up his severance pay of several hundred dollars if he resigned early. There were 13 men from Baker who resigned early. Twelve of these men were not visited until after they had resigned. The mean level of uric acid in the serum for those men, across all time periods, is 6.77 mg/dl which is significantly higher ($P \simeq 0.01$) than the mean of the controls. It is also higher ($P < 0.005$) than the mean of 5.72 mg/dl for men in Baker who are reemployed when seen one month after their job loss. This comparison is particularly appropriate since it holds constant the company from which they came, their current employment status, and the fact that they had recently experienced a job change.

The evidence connecting elevated uric acid levels with stress was first presented by Rahe & Arthur in 1967. This was then supported by Kasl, et al., (1968), in preliminary report from this study and by further data on navy recruits undergoing underwater demolition training (Rahe, et al., 1968;

Table 5.14 Mean serum uric acid levels in mg/dl by phase of the termination experience.

Cases and subsets	Means by phase				
	Anticipation	Termination	6 Months	12 Months	24 Months
All cases	6.28* >	6.06	5.95	6.00	5.79
Baker (urban plant)	6.55** <>	6.02	5.67	6.00	5.76
Dawson (rural plant)	6.05	6.09	6.16	6.01	5.82
Less unemployment	6.39* <>	5.95	5.83	6.11	5.75
More unemployment	5.97	6.06	5.90	5.93	6.01
Fewer job changes	6.29	6.05	5.909	6.01	5.88
More job changes	6.00	5.89	5.815	5.94	5.69
Low social support	6.16 >	5.85	5.98	5.94	5.54
High social support	6.31*	6.25* <>	5.92	6.07	6.02
Low social support &					
Less unemployment	6.38 <>	5.80	5.90	6.22	5.71
More unemployment	5.81	5.78	5.87	5.55	5.34
High social support &					
Less unemployment	6.40	6.12	5.77	5.97	5.78
More unemployment	6.29	6.40	6.06	6.15	6.22
Low social support &					
Fewer job changes	6.25	5.83	5.95	5.99	5.61
More job changes	5.69	5.29	5.65	5.65	5.41
High social support &					
Fewer job changes	6.34	6.34 >	5.85	6.04	6.25
More job changes	6.20	6.15	5.91	6.10	5.86

Controls, mean of ipsative means = 5.815, σ = 1.058, N = 73
* Significantly different from controls P<0.05
** Significantly different from controls P<0.01
> P<0.05
<> P<0.01

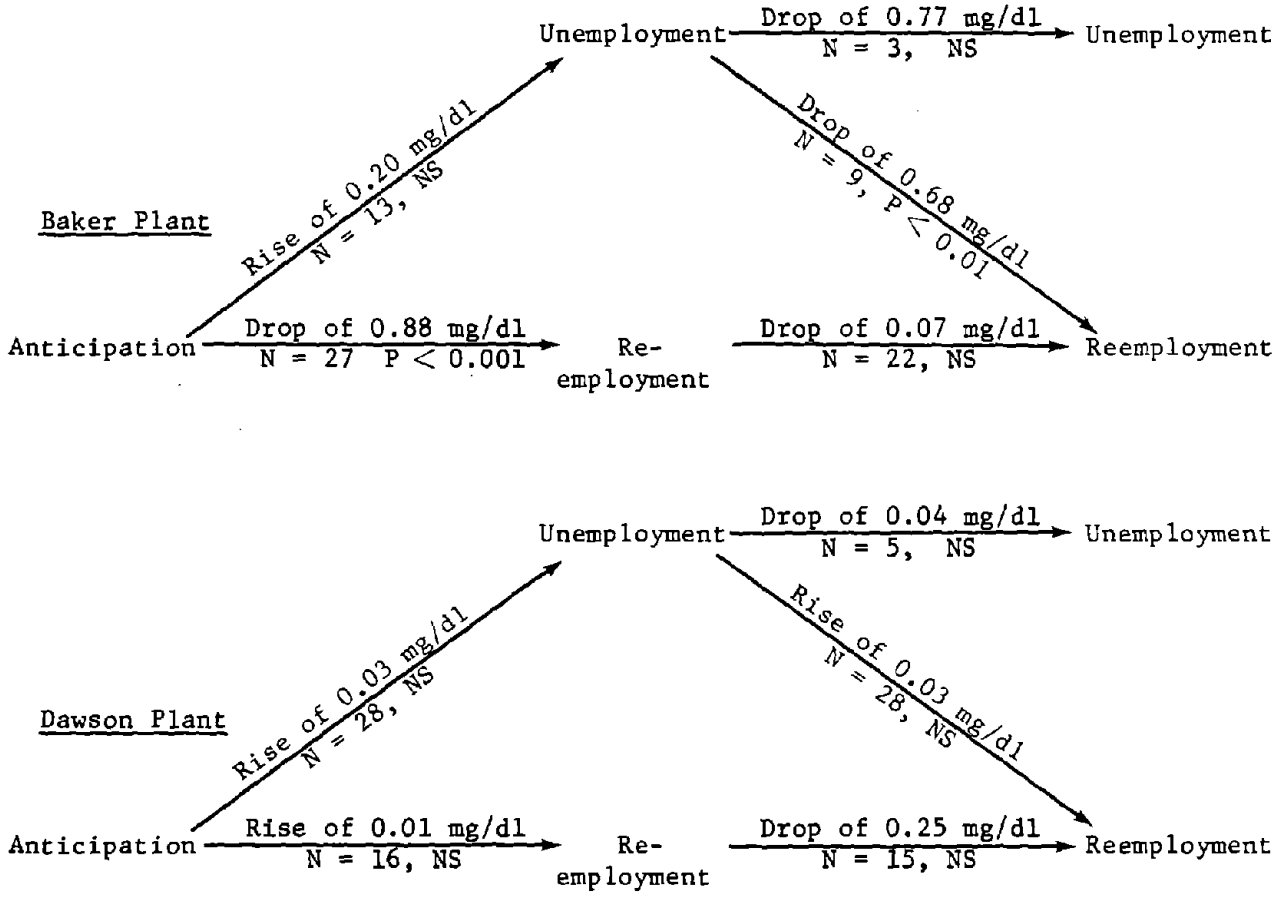

Figure 5.8 The effect of the change of employment status between Anticipation and Termination and between Termination and 6 Months on mean change in serum uric acid levels in mg/dl, Baker and Dawson plants compared.

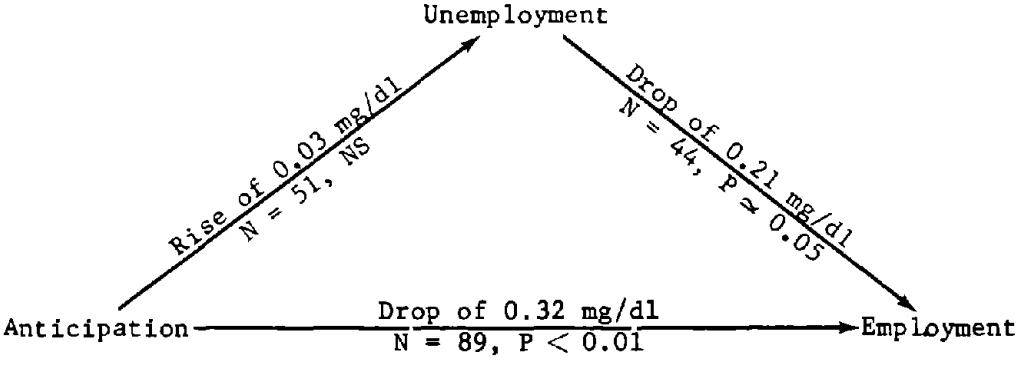

Figure 5.9 The effect of unemployment experience on average change in serum uric acid levels. The difference scores were derived by taking the means of all values for a given man in each of the specified conditions and then averaging the differences between these individual means.

Rubin, et al., 1970). The evidence from this study is presented in Table 5.14. Here it appears that the mean serum uric acid level for all terminees was significantly elevated during the phase of Anticipation, 6.28 mg/dl as opposed to 5.82 mg/dl for the controls ($P < 0.05$). Most of the elevation was due to the men of Baker plant, those with less unemployment, and those with high social support.

The specific relationship to the job change is illustrated in Figure 5.8. Here it can be seen that in Baker plant the 13 men that were unemployed at the Termination visit and were subsequently reemployed, had an insignificant rise of 0.20 mg/dl and a subsequent significant drop of 0.68 mg/dl. Likewise, those who sent directly from Anticipation to reemployment at the second round of visits, had a similarly large and highly significant drop. Thus we see that in Baker plant average levels were elevated nearly 1 mg/dl during the phase of Anticipation and dropped promptly into the normal range with reemployment. The gradual return to normal shown in Table 5.14, bespeaks the various patterns of reemployment. Those five men who were still unemployed at Phase 5, two years after Termination had a mean of 7.6 mg/dl representing no drop from their levels of 7.5 mg/dl during Anticipation. The changes at Dawson depicted in the lower part of the figure were all trivial and insignificant. The reason for the difference between plants is not clear.

The main point seems to be that there was an appreciable and significant drop associated with settling into the new job. This is illustrated in Figure 5.9 where it appears that in the reemployed condition the men had on the average significantly lower uric acid levels than in either the anticipation or unemployment states.

Two additional points should be noted. First, at the Cryland plant where the men experienced anticipation without termination the mean level was higher but not significantly higher than the level for controls. Second, in a preliminary paper (Cobb, 1974) a protective effect of social support was noted. The data presented were incorrect. It appears that high social support is associated with a tendency to persistently high levels of uric acid in the serum among the terminees. Interestingly enough, the pattern is the same for the controls. However, the difference between high and low social support is not significant at 24 Months nor among the controls.

One of the men from the Dawson plant is reported to have developed gout about six months after the closing. He was a vigorous man who found a new job promptly, and much of the time he was working at a second job as well. Before the closing his uric acid level was 7.9 mg/dl. At the post-termination visit it had risen to 8.5 mg/dl and at the 6 Months visit it was 9.6 mg/dl. That was the last observation because he refused the 12 Month and 24 Month visits. However, his wife reports that about seven months after the closing he had a severe attack of arthritis that his physician called gout. At that time his serum uric acid was reported by his physician to be 9.8 mg/dl and he was advised to take uricosuric drugs.

Finally, the data on excretion rates suggest that the changes may be more due to changes in excretion than to changes in production because in

general when the serum values are going down, the excretion rates are going up and vice versa. This is far from certain and should be properly examined in future studies.

CHAPTER 6

DISEASES

INTRODUCTION

Now that we have examined in considerable detail the physiologic changes associated with job termination, it is appropriate to proceed to the data on diseases. Here, the data are rather more meager and are usually confined to indicators of diseases and/or reports of treatments for diseases. This is due to the fact that it was obviously not possible to subject all the participants in this study to repeated and detailed medical examination. However, some data are available on peptic ulcer using Dunn's index (Dunn & Cobb, 1962) on arthritis, data on observed joint swelling and on hypertension, reports of treatment and actual blood pressure observation. Beyond this, there are only limited observations, but some of these provide food for thought.

The main problem with the analysis in this area arises from the fact mentioned in Chapter 2 that the controls appear to be somewhat sicker than the terminees, which was apparently due to a selection bias. Specifically, only 15% of the controls rated their health as excellent on the initial interview, as opposed to 20% of the terminees. Furthermore, at the end of the whole series of data-collection episodes, the nurse went back and summarized the record. One of the questions she was required to answer was with regard to an estimate of potential disability based on known chronic conditions that might interfere with occupational activity. In doing this, the nurses rated 31% of the controls as potentially disabled, but only 21% of the terminees were assigned to this class. This problem will be dealt with in more detail as we come to specific diseases for which it is relevant.

MORTALITY

In a limited attempt to ascertain if there was excess mortality among the terminees, we followed 208 employees of the Baker plant to three years after Termination. In that three year period, eight of them died. This is only one more death than might have been expected on the basis of the United States age, sex, race specific mortality rates. However, one man committed suicide shortly before the closing and really should have his death counted as related. Even with this addition, the mortality is not significantly in excess of expected.

Two completed suicides in the two years from the beginning of the terminations, three and one half months before the final closing, is about thirty times the expected number. The Poissen distribution would suggest that this is significant at $P < 0.01$, but intuitively the number seems rather

small for drawing a generalizable conclusion that suicide was in excess. But when one realizes that during this period there were additionally at least one attempted suicide and one serious threat, one pays more attention. We say at least because these happened among the 46 Baker men who were in the study. We do not know anything about threats or attempts in the other 152 men. Of the nine deaths, four were due to myocardial infarction. This is about what one would have expected. However, three of these were sudden unexpected deaths without previously known coronary disease, which is about three times the usually expected proportion.

In the preceeding chapter, it has been shown that cholesterol levels and blood sugar were at times elevated. Though the self reports did not prove it, we are inclined to believe that there was some increase in smoking related to times of tension and to times of inactivity. Later in this chapter it will be shown that there was a temporary increase in hypertension. Finally, we have already noted some increase in catecholamine output during the early phases of the study and a rise in pulse rate associated with unemployment. To those familiar with factors contributing to the risk of coronary disease this narration will certainly suggest that the unemployment experience raised the risk. Some of the consequences may be felt in an excess of coronary deaths later on. Only a much larger study could assess the magnitude of this risk.

DYSPEPSIA

At the initial visit each man was asked, "Have you ever had an ulcer?" If the answer was yes and it was further reported to have been proven by X-ray or at operation, the man was classified as having a pre-existing peptic ulcer. At each round of visits the men were asked the questions in Dunn's peptic ulcer index (Dunn & Cobb, 1962) and were classified as positive if during the last four weeks they reported stomach pain that, 1) awakened them at night or came on before eating or two or three hours after eating, and 2) was relieved by milk or food. Those positive were asked to estimate the proportion of the last 28 days on which they were affected.

Table 6.1 shows the results. The controls seem to have a greater proportion with pre-existing ulcers. Twenty percent of the controls have a history of proven peptic ulcer as opposed to only 8% of the terminees. This difference is significant ($P < 0.02$). During the first year following Termination, six men were identified as having new ulcers by the report of a positive peptic ulcer index, while during the equivalent period for the controls (approximately 93 person-years of observation) only two cases appeared.

The important differences are to be found at the bottom of the table. Here we are concerned with the proportion of time in episode and it is apparent that though there are only half as many pre-existing cases of ulcer among the terminees as among the controls, the terminees have only 1/16 as many days of ulcer activity per thousand days of observation, and these all occurred during the period of anticipation. This means that none of the pre-existing ulcers were active during the termination and readjustment phases. This finding suggests that pre-existing ulcers among the terminees may have healed as a result of the termination. The ratio is reversed for

the new ulcers. Here the ratio is about 17 to 1 in the opposite direction, and the main activity is at 6 months and 12 months after termination. This supports the hypothesis that change of job had something to do with these new ulcers. The fact that most of the ulcer activity took place on the new job rather than during anticipation or unemployment leads one to suspect that it is the quality of the new job that is at issue rather than the experience of change or the period of unemployment. Since the numbers are small the conclusions must be tentative.

At this point, it should be noted that the t-test results are in parentheses. This is to remind us that the tests are not quite appropriate, in that the days of activity are not fully independent. Reexamination of this matter in terms of mean days of activity per case confirms the finding, but at a lesser significance level.

Gore (1973) examined the hypothesis that social support would moderate the effect of the social stress on ulcer activity. She was surprised to find a significant difference in the controls, but not among the terminees. The numbers are of course awfully small, so the failure to find support for the hypothesis cannot be taken as evidence against the hypothesis. Gore then went on to consider the possibility that it was the home situation which was particularly relevant here, as suggested by Cobb, et al., (1969). The measure of marital hostility used in the earlier study did in fact make a highly significant difference in the proportion of days with activity for those who had an old ulcer. There was, however, no difference in the incidence of new ulcers that could be related to the level of marital hostility. This might be interpreted as a further suggestion that the ulcer onsets were job-related. Again, the caveat about small numbers is important and the interpretation should be taken more as a hypothesis for further study than as a reasonable deduction from the facts.

Mirsky (1958) found ulcer cases only in men with the highest pepsinogen levels. Surprisingly, the new ulcer cases did not clearly come from among those with the highest pepsinogen levels. This naturally raises some questions as to the likelihood that those positive on the index had duodenal ulcer. This is why the section is headed dyspepsia rather than peptic ulcer. Because of the proven validity of Dunn's (1959) index and because gastric ulcer, the principal source of confusion, is relatively rare in the United States, we are inclined to believe that the findings are relevant to duodenal ulcer, but proof is lacking.

Finally, it is of considerable interest to note that, without systematic inquiry, we learned of three wives of terminees who were hospitalized for peptic ulcer between two months before and two months after Termination, giving an annual incidence rate of 9%. We have no knowledge of ulcers that were not hospitalized. Peptic ulcer is rare in women; the prevalence was estimated by Sydenstricker (1926) to be 0.4% by interview in Hagerstown, Maryland. Since the United States mortality rate from peptic ulcer in women has changed little over the years, this is probably still an appropriate figure for comparison. Since the incidence of a chronic disease has to be lower than the prevalence, we are possibly dealing with a hundred fold excess of onsets of peptic ulcer in these women.

Table 6.1 Peptic ulcers old and new in terminees through 12 months compared to controls.

Number and ulcer activity	Terminees	%	Controls	%	P
Number of men	100		74		
Number with pre-existing proven ulcers	8	(8%)	15	(20%)	0.02
Number with newly positive peptic ulcer index	6	(6%)	2	(3%)	NS
Ulcer activity per 1,000 person days observation					
For old ulcers	0.5		8.1		(<0.001)
For new ulcers	14.0		0.8		(<0.001)

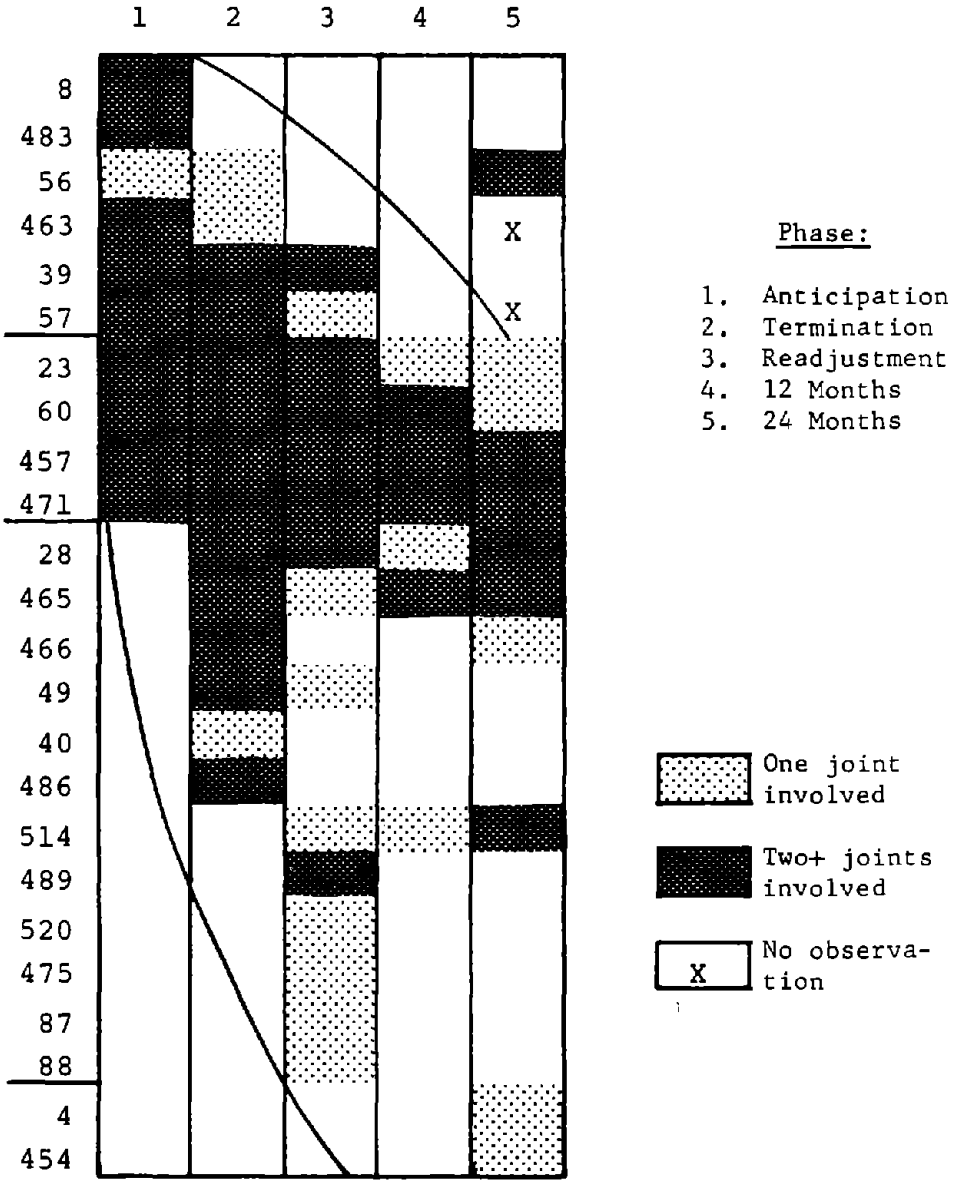

Figure 6.1 The distribution of episodes of observed joint swelling by phase of the study, among the 100 men who experienced job termination.

ARTHRITIS

The first look at the problem of arthritis in the men was confusing because again, the bias of the controls in favor of illness was apparent and no very striking pattern could be seen. However, it was decided to give special attention to the most reliable and valid indicator that we had, namely, observed joint swelling. Having spent quite a number of years doing arthritis surveys, one of us was well-equiped to train the nurses in the recognition of swollen joints (Cobb, 1971). Here a very detailed examination of the data proved rewarding, as is seen in Figure 6.1. Across the top, the phases of the study are indicated. At the left the individual cases that were observed to have joint swelling at any time are identified. The shaded cells represent the occasions on which this swelling was observed. The lighter shading represents a single joint and the darker two or more joints swollen. The cases are divided into groups. In the uppermost group of six cases, all had joint swelling during the period of anticipation and all were free of swelling at 12 months. The curved line might be said to represent their recovery.

The second group is composed of four cases that were continuously active. The third group is the most interesting, for none of them had joint swelling during anticipation and all of them were observed to have swelling on one or more occasions beginning either in the phase of termination or the phase of readjustment. In all, there are 12 such cases. They appear as those in the first group disappear. The final group of two cases shows swelling only at 24 months. They are presumably unrelated to the termination. The initial point prevalence is again higher for the controls: 19% as opposed to 10% for the terminees. These are both appreciably higher than the 6.9 to 7.8% that would be predicted for this age group by the Pittsburgh Arthritis Study (Cobb, unpublished) or the National Health Survey (NCHS, 1966), respectively.

When we look at the annual incidence rates in Table 6.2, the pattern begins to emerge. It is apparent that the incidence of new attacks of arthritis involving two or more joints is significantly greater at Phase 2, Termination, than during all the later phases put together. Referring back to Figure 6.2, this involves five new cases (black cells) occurring in three months' time, giving an annual incidence rate of 20%. Since that rate is predicated on an examination every three months (the interval from Phase 1 to Phase 2), the rates for the later phases and for the controls have been adjusted to such a frequency of examinations. When one drops down to just one or more joints swollen the difference between the early phases, 2 and 3, and the late phases, 4 and 5, for the terminees is even more striking, but the difference from controls becomes statistically non-significant because a good many of the controls had a short episode of swelling in a single joint.

Next, let us consider the possibility that there were two epidemics, not just the one we have been discussing. The other epidemic is the one which is on the wane at Phase 2. If we could show that the six cases in the first group had a different termination experience than the 12 cases in the third group, it would support the suggestion of two epidemics. Table 6.3 brings out just

Table 6.2 The annual incidence rates per 100 men for arthritis involving the swelling of two or more joints. Terminees at phase 2 compared to later phases and to controls.

Group and phase	Annual incidence
Terminees	
Phases 1-2	20%*
Phases 3-5	4%+
Controls	6%+

*The 5 cases observed are significantly greater than the 1 expected, based on the terminees' phases 3-5 $P<0.05$.
+Adjusted to four examinations per year for comparison with the three months interval for the terminees.

Table 6.3 Comparison of the distribution of the recovering cases with the new onsets of joint swelling with respect to unemployment experience.

Unemployment experience	Recovering cases	New onsets
Less than 4 weeks unemployment and only one job change	3	1
5-12 weeks unemployment and only one job change	3	4
13 or more weeks unemployment or more than one job change	0	7
Total	6	12

$\gamma=0.90$
$P<0.02$

Table 6.4 The effect of social support on joint swelling observed at any time during the study.

Number of simultaneously swollen joints	Social support			
	Low	Medium	High	Total
Two or more	12	5	1	18
Less than two	17	36	27	80
Total	29	41	28	98*
Percent with two or more joints swollen	41%	12%	4%	

*Two cases have missing data.
γ=0.73
P<0.0003

this point, for it demonstrates that those in the recovering group were quickly reemployed, suggesting that their recovery was associated with early stabilization in new jobs. On the other hand, the new onset group mostly experienced unexpected difficulty in reestablishing themselves at a time when unemployment in the state was at a minimum. We say "unexpected" because their mean employability rating was identical with that for the rest of the sample.

Finally, comes the question, "Was any identifiable group peculiarly susceptible to joint swelling?" Still focusing on two or more joints swollen, Table 6.4 identifies a negative association with social support. Those in the lowest category of social support have ten times the probability of having swollen joints as those in the higher categories. This was a somewhat unexpected finding but immediately draws one back to the observation that marital hostility is substantially related to rheumatoid arthritis in women (Cobb, et al., 1969).

It seems likely that there was an excess of joint swelling related to the termination. This fits with observations of Parkes (1972) that the bereaved seek treatment for arthritis, and of Cobb, et al., (1959) that those in the process of getting a divorce are unduly afflicted with arthritis. Though the senior author personally visited about half of those who had two or more joints swollen, though the questions of the RA Index were asked and latex fixation tests and serum uric acid determinations were done, and six cases met the ARA criteria for rheumatoid arthritis, there is not enough data to indicate the true relative proportions of rheumatoid disease, osteoarthrosis with over use and gout.

Again, we have some evidence for excessive disease activity around the time of termination; again, the numbers are small, and again the interpretation must be cautious. Now let us turn to hypertension.

HYPERTENSION

The best available indicator of hypertension as a disease was the initiation of an ongoing regime of anti-hypertensive medication. At the beginning of the study, 2% of the terminees and 8% of the controls were taking anti-hypertensive medication which they continued to take throughout the study. Five of the 100 terminees started on medication in the three months between phases 1 and 2; of these, four continued their medication for the remainder of the study. This gives an annual incidence rate of 20%. One more case was started at Phase 3; then there were no further cases for the remainder of the study. If the rate of incidence of new cases of continuous therapy, 16% per year, had prevailed for the succeeding 22 1/2 months of follow-up, we should have found 34 additional cases initiating therapy and would have had 50% of the men on anti-hypertensive therapy at the end of the study.

Among the controls, there were four men who started taking anti-hypertensive medication during nearly 100 man-years of observation, making an annual inception rate of 4%. However, there is no evidence that any of them continued the treatment beyond one month, so the proper comparison is an annual incidence of 16% at the time of termination to 0.5% in the later

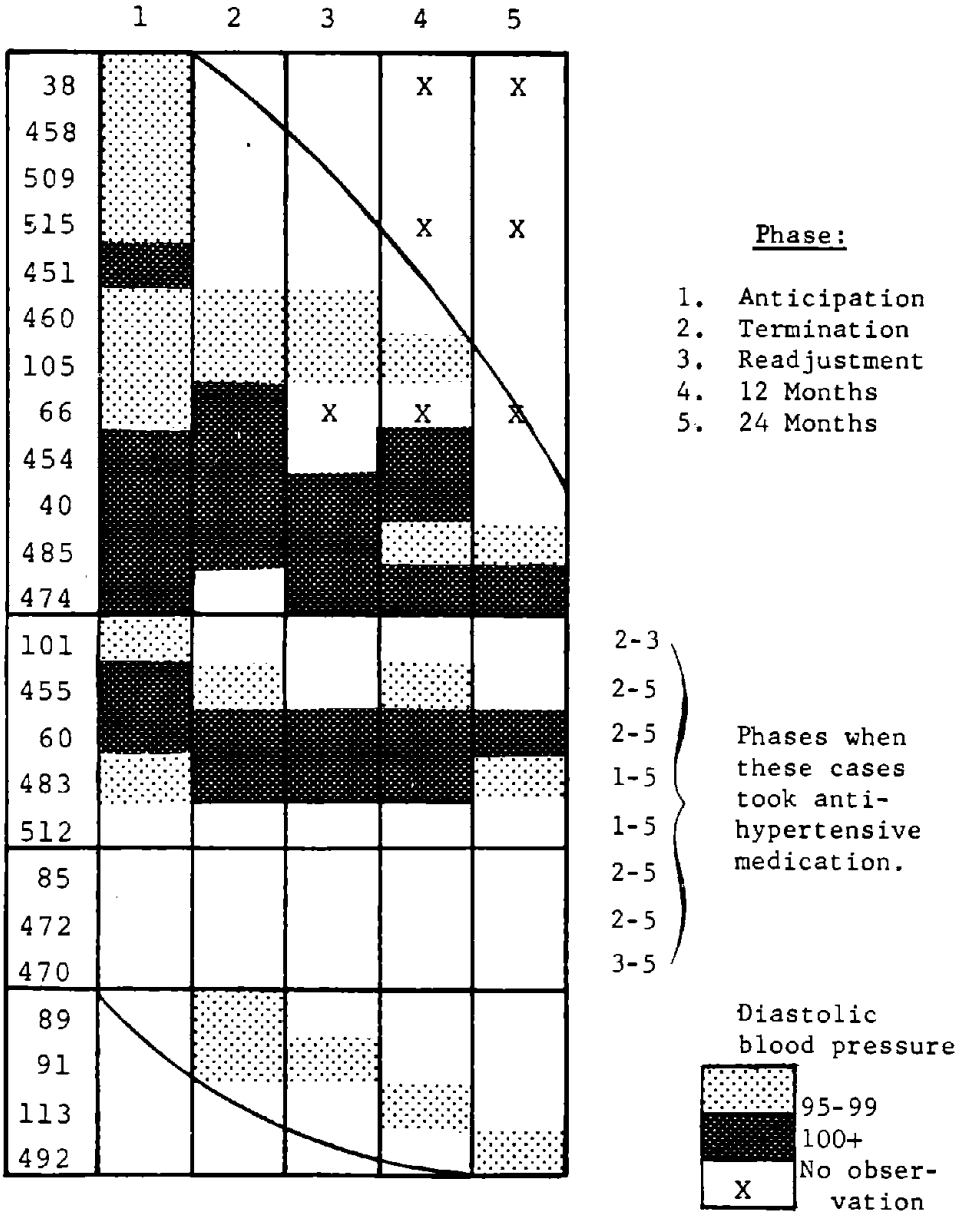

Figure 6.2 The distribution of episodes of hypertension by phase of the study among the 100 men who experienced job termination.

phases for terminee cases, and zero in the controls. In order to corroborate the suggestion of an excess of initiations of anti-hypertensive treatment in the terminees, the data on diastolic blood pressure were examined. For estimating a man's blood pressure at any phase we have used the average of four blood pressures taken on two different occasions two weeks apart. Figure 6.2 shows all the cases that had an average blood pressure of 95 mm Hg or over at any time plus those on anti-hypertensive medication. Diastolic blood pressures of 100 or over are indicated by heavy shading, 95-99 by light shading and below 95 by no shading. Remembering that on the average, the nurses read diastolic pressures 4.2 mm of Hg high, the selection of 95 mm Hg as the cut off point seems particularly appropriate. In the middle section of the diagram, cases number 483 and 512 were on anti-hypertensive medication throughout the study. In the former case, the treatment was mostly ineffective; in the latter case completely effective. The six adjoining cases, three above and three below are the additional cases that were placed on medication. For all but one of them, #470, this occurred at Phase 2, just after Termination. As can be seen, the medication was in varying degrees effective.

The upper part of the figure is even more interesting. Here are 12 cases, 11 of which were observed at least through Phase 3. All of them had average diastolic blood pressure of 95 or over during the period of Anticipation. All of them returned into the normal range by the end of the period except for two, and those two had an average drop of 11 mm of Hg during the study. In the bottom section of the figure are four cases who had brief episodes of diastolic hypertension. This experience should be contrasted to the controls where the four onsets exactly balanced the four offsets that occurred in the pre-existing cases.

There are at least two possible interpretations of this data set. First, it might be that changing jobs is good therapy for hypertension. The second is that threat of job loss induces a temporary hypertension which recedes as stabilization on the new job occurs. We favor the latter interpretation because of the therapy data. One must of course consider the possibility that the proportion going on therapy has something to do with readiness to take up the sick role. However, as will be seen in the next chapter, Phase 2 was a time at which complaining and using drugs was relatively low and physician visits were not unusual in frequency.

Grace and Graham (1952) have suggested that environmental threats may contribute to hypertension. Therefore, a possible interpretation of this finding is that the threat of unemployment contributes to the hypertension and that the hypertension recedes as stabilization in the new job takes place. If this were so, one would expect those who were least employable to be the most likely to have developed hypertension. Using an index of employability involving education, highest skill level, and number of job skills, we found that of those eight men in the lowest category of employability, five developed hypertension (diastolic = 100 mm Hg or greater) or were treated for hypertension during the early phases of the study. This is in contrast to the expectation of only one case if the cases had been equally distributed across all levels of employability.

Neither Social Support nor "Psychological Defense" clearly moderated the process of developing hypertension. There was a suggestion that Psychological Defense may show a difference in a larger series. This is mentioned only as a suggestion for future research.

DIABETES AND ALCOHOLISM

In the course of the entire study, 10 diabetics were identified as taking hypoglycemic agents. Six of these were among the controls and four were terminees. Of these 10 diabetics, two began taking hypoglycemic medication during the study and both of them were terminees. All we can conclude from this is that again we see evidence of some bias towards more illness in the control group. Certainly the discovery of two new cases among 100 men followed for two years can hardly be considered evidence of excessive incidence of diabetes.

Alcohol consumption was not a subject for routine inquiry because we believed the reports would be unreliable. However, for those who clearly were heavy drinkers entries were made in the nurses' notes. Among the controls five cases were identified as heavy drinkers. They all came from one company which tolerated drinking on the job. Among the terminees, eight were reported to be heavy drinkers and one was reported as an ex-alcoholic. Of the eight heavy drinkers, seven were indicated as having increased their drinking in connection with the stress of job change or to have decreased their drinking after things settled down. How much of this is related to the preconceived ideas of the field staff is hard to say. But it seems unlikely that it was all due to that. All of the current heavy drinkers among the terminees were in the upper half of scores on the RASI (resentment, anomie, suspicion, and independence) syndrome. (See Appendix C for description of the RASI measure). This was true also of four of the five drinkers from the control company. This strong association of RASI with heavy drinking deserves further investigation in other studies. The postulated association of heavy drinking with low social support fell short of statistical significance.

ALOPECIA AREATA

Alopecia areata is generally considered a condition in which emotional factors play a part. Cohen and Lichtenburg (1967) describe it in association with planned termination of psychotherapy and Parkes (1972) mentions it in association with bereavement. Two men had patchy loss of hair at the time of termination. One of them experienced the same thing earlier when the closing of the plant was first announced, with regrowth in the interval. A third man was described as having scabs in his scalp with some loss of hair both at the time of announcement and at the time of termination. Unfortunately, the nurses' notes on this third case are not clear enough to substantiate a diagnosis of alopecia areata, only a recurring scalp disease with loss of hair. No such hair loss was observed in the controls. As might be expected, all three cases were in the lowest category of psychological defense but the distribution was not significantly different from chance.

A CASE IN POINT

Alfred Slote (1969) in his chapter "The Invisible Cripple" describes the man he call Dave Masiak. This man was 55 years old, seemed below average in intelligence, had only an eighth grade education, had no skills and therefore relied on his strength, which had been impressive, to keep himself employed. Unfortunately, he suffered a back injury about two years before the closing and had to be put on light duty. During the year preceding the closing he gained a lot of weight and shortly before the closing he was found to have developed diabetes, hypertension and swollen joints. He became depressed, did not take his prescribed medications and threatened suicide. By two years after the closing he was still unemployed, but he is reported to have improved substantially and to have taken a janitorial job before the end of the fourth year after the closing. Of the 100 terminees studied, he was clearly the least likely to be reemployed and he suffered enormously.

TUBERCULOSIS: THE CASE THAT DID NOT REACTIVATE

Willis Ingram, as Slote calls him in his chapter "A Little Bit Here, and a Little Bit There, I Make Out," was a 56 year old black man who was operating a canning machine at the time of the closing of the Baker plant. He was slight and frail and had a history of pulmonary tuberculosis with a thoracoplasty (ribs removed to collapse part of his lung) in 1950 and a reactivation in 1960 with 11 months in the hospital. Within two weeks of his termination on December 3, 1965, his house was taken by eminent domain to clear the way for a freeway access.

When we thought about both job and home being taken away simultaneously, we remembered Holmes' (1956) work and predicted a reactivation of his tuberculosis. Little did we know the coping skills and the options open to this man. Two years after termination he was sending a son through college and living in a comfortable and well-appointed apartment in a house which he owned. He was comfortable, cheerful, and working banker's hours at making book in the numbers game. Along the way, he did have a bout of bursitis and an attack of dyspepsia, which might have been due to a duodenal ulcer. There was no reactivation of his tuberculosis.

OVERVIEW

It would appear that there was an appreciable excess of psychosomatic illness associated with these two factory closings. Some of this is more assoeiated with the previous job and subsides with adaptation to the new job, and some of it, notably arthritis and dyspepsia, appears related to the adaptation to the new job. Those who were low on the RASI syndrome seemed to be protected from excessive drinking and those with adequate social support were substantially protected from arthritis.

CHAPTER 7

ILLNESS AND SICK ROLE BEHAVIOR

Having dealt with psychological and physiological evidences of strain and with a small set of psychosomatic diseases it is appropriate to look at behaviors that relate to illness and the sick role. A perspective on this topic is best gained from the pioneering writings of Parson's (1951 and 1958), Mechanic's work (Mechanic, 1962; Mechanic and Volkart, 1961) and our own review paper (Kasl and Cobb, 1966). This perspective is very specifically longitudinal in its theoretical formulation but to date most of the empirical data have been derived from cross-sectional studies. In this chapter we will explore, somewhat further than in earlier reports (Kasl, et al., 1972 and Kasl, et al., 1975), changes over time with respect to the following behavior: complaining, being disabled, i.e., neglecting usual duties, taking drugs, and seeking medical care. The data are, of course, derived from the health diary that was maintained for the 14 days between the health visit and the self-identity visit.

DAYS COMPLAINT

The most important measure to be examined is Days Complaint. It is derived from the health diary and is simply a count of the number of days out of 14 on which the respondent checked off on the health diary that he "did not feel as well as usual."

The data on the controls reveal an over-all mean score of 2.11 (S.D. = 3.71) on Days Complaint; urban controls have a somewhat higher mean (2.31) than rural controls (1.68). Additional analyses on the controls showed no significant trends over time, but did reveal some seasonal fluctuations: December through February, M = 4.1; October and November, M = 2.3; March through September, M = 1.7. These seasonal fluctuations were checked with the sickness absence data at several comparable urban and rural companies (not otherwise participating in this study), and with the National Health Survey rates for acute conditions and days of restricted activity associated with acute conditions (Health Statistics, 1962). These latter sources yielded highly similar seasonal fluctuations (for men aged 25-64) to those in the present study.

In the next step, the values on Days Complaint for the cases were adjusted for a) the seasonal effects, b) the rural urban differences, and c) the case-control differences on the number of past illnesses or symptoms revealed during the initial interview. The adjusted Days Complaint measure is a standardized deviation score from "expected", where the data for controls generated the expected values.

Table 7.1 presents the changes in adjusted Days Complaint. Positive values

indicate that during that phase, the mean for the cases was above what would be expected, given the time of year or the rural-urban composition of the cases; negative values, conversely, indicate fewer Days Complaint than expected.

The data in Table 7.1 reveal remarkably similar fluctuations in the urban and rural companies. Specifically, these fluctuations can be described as follows: a) During Anticipation, when the men are still on their old jobs but are fully aware of the impending plant closing, the mean Days Complaint for the cases is significantly higher than the overall mean for the controls ($P < 0.005$). b) The cases show a significant drop from Anticipation to Termination ($P < 0.001$), a significant rise between Termination and 6 Months ($P < 0.001$), and a significant drop from 6 Months to 12 Months ($P < 0.005$). The change from 12 Months to 24 Months is significant ($P < 0.025$) in Baker men only. c) In an overall comparison of the first three phases (Anticipation of job loss, unemployment, and probationary reemployment for most men) with the final two (stabilization on new job), the adjusted Days Complaint shows a drop from the early phases of stress to later phases of stabilization in 78% of all the cases ($P < 0.0001$ for test of correlated means).

The Days Complaint measure is basically uncorrelated with age, education and the Crowne-Marlowe (1964) index of defensiveness; men high on the Ego Resilience Scale of Block (1965) tend to have fewer complaint days, but this is true for controls only ($r = 0.27$), and not for cases ($r = -0.08$). Moreover, the temporal stability (i.e., correlations between pairs of phase values) is rather low, as reflected by an average correlation of about 0.24. This is appropriate, since we do not wish to measure a stable characteristic of the person, but a changing aspect of perceived physical well-being, which can be sensitive to stressful social events.

The fluctuations seen in Table 7.1 were next related to the employment experience. The basic finding is that on those occasions when a man was unemployed, his Days Complaint tended to be no different from other occasions when he was employed. This is not unexpected, since the mean for Termination is quite low, and yet more men are unemployed during this phase than during any other phase. This suggests that the fluctuations in Days Complaint seen in Table 7.1 reflect primarily the process of reacting to the loss of a long held job (viz the strong anticipation effect) and to change in the work environment irrespective of whether the change is to a new job or to no work at all.

There were eight men who were unsuccessful in finding stable reemployment even by 12 Months or 24 Months and their mean adjusted levels of Days Complaint were quite high throughout the study (a mean of 3.6 above expected for all five phases). This suggests rather that poor health was interfering with their ability (or desire) to find work than that prolonged unemployemnt led to poor health. Of course, we do not know if these stably high levels of Days Complaint were typical for these men or whether the stress of the anticipation of plant closing precipitated feelings of poor health from which they never recovered.

Table 7.1 Mean days complaint (adjusted) of the terminees as they go through the phases of the job loss experience.

Cases and subsets	Means by phases* (standard scores) Anticipation	Termination	6 Months	12 Months	24 Months
All cases	0.44	-0.44	0.36	-0.22	-0.55
Baker (urban plant)	0.63	-0.38	0.44	-0.03	-0.57
Dawson (rural plant)	0.27	-0.50	0.30	-0.36	-0.53
Less unemployment	0.29	-0.47	0.02	-0.14	-0.83
More unemployment	0.70	-0.38	0.56	-0.29	-0.32
Fewer job changes	0.46	-0.59	0.09	-0.28	-0.50
More job changes	0.56	-0.20	0.65	-0.19	-0.60
Low social support	0.51	-0.56	0.48	-0.51	-0.40
High social support	0.41	-0.27	0.24	0.09	-0.67
Low social support &					
Less unemployment	0.39	-0.83	0.05	-0.51	-1.27
More unemployment	0.66	-0.18	0.98	-0.44	0.37
High social support &					
Less unemployment	0.17	-0.04	-0.02	0.48	-0.41
More unemployment	0.72	-0.55	0.36	-0.16	-0.86
Low social support &					
Fewer job changes	0.31	-0.70	0.15	-0.74	-0.35
More job changes	0.94	-0.17	1.04	-0.29	-0.50
High social support &					
Fewer job changes	0.68	-0.45	0.00	0.30	-0.69
More job changes	0.28	-0.22	0.38	-0.11	-0.65

*High score equals many days complaint.

Next, Days Complaint was related to the number of job changes and here also the results were uninteresting. Despite the fact that rather striking peaks of complaint are reached by those low on social support and with either more unemployment or more job changes the interaction effects are not significant. The only interaction effects that are significant are with number of job changes at Anticipation and at 12 Months; and with amount of unemployment at 12 and 24 Months. In these cases the interpretation is not clear, though it would seem that these men with high social support and either less unemployment or fewer job changes had a peak that was delayed from 6 Months to 12 Months.

During the 12 Month and 24 Month interviews, the men were asked to rate, retrospectively, the severity of the experience of this plant closing. "Now could you tell me how long you think it took before things got pretty much back to normal? A week or so; about a month; a few months; around half a year; not yet back to normal even now." The average response fell half way between "a few months" and "around half a year," with no differences between the two components. Only in Baker, however, was this subjective rating of severity associated with an objective index, the length and the recency of unemployment (gamma = 0.58, $P < 0.001$); in Dawson, there was no association (gamma = -0.03). It was also found that in both companies, men low on the Ego Resilience scale tended to rate the experience as more severe ($r = -0.23$, $P < 0.025$).

Men who rated the experience as more severe tended to have higher average Days Complaint; more so in Baker ($r = 0.44$, $P < 0.005$) than in Dawson ($r = 0.20$, ns). There was also a tendency for men rating the experience as more severe to have a smaller drop from the first three phases to the last two than men rating it less severe, but this association was not significant ($P < 0.10$).

The size of the drop from the early to the later phases, though not related to the subjective experience, was related in both companies to the Ego Resilience scale: men scoring poorly (low) on this general measure of adjustment showed a smaller drop between the first three phases and the final ones than those whose adjustment was good (gamma = 0.43, $P < 0.005$). This suggests that men who are poorly adjusted were slower in recovering from the elevated levels, characteristic of the earlier phases of stress. Previous analyses of changes in serum uric acid, serum cholesterol and blood pressure levels had revealed similar associations between ego strength and the rate of return from the early elevated levels.

Let us finally examine the question of how age and education might be influencing the fluctuations in Days Complaint seen in Table 7.1 (we have already noted that a man's level of complaint days at any one phase, or as an average of all phases, is not correlated with his age or education). The answer here is that both demographic variables have some influence, but only in Baker men.

Younger men were significantly higher ($P < 0.001$) at Anticipation than were older men, but by 24 Months the situation was reversed, with the younger men now being significantly ($P < 0.025$) lower. If we recall that the

younger men in this study (in their 40s or late 30s) were more likely to have dependent children still at home, then the above pattern is consistent with the interpretation that the anticipation of plant closing was more threatening to them, but that ultimately they recovered better from the total experience than the older men.

The better educated men were somewhat higher on Days Complaint at Anticipation ($P < 0.10$) than the poorly educated men, but on all subsequent phases the situation was reversed ($P < 0.05$) and the better educated men had lower values. This pattern of findings is consistent with the interpretation that after plant closing, the less educated men were realizing that their educational level might be a handicap in finding a stable reemployment and were thus under greater continual stress.

DAYS DISABILITY

This measure is likewise derived from the health diary and is a count of the number of days out of 14 when the respondent "didn't carry on usual activities" due to illness or injury. It meant that he was in the hospital, home in bed or at least stayed in the house even though not in bed. The measure is related to Days Complaint only in the sense that those receiving a zero score on Days Complaint also had a zero score on Days Disability. But many men who indicated days of not feeling as well as usual had at the same time no days when they didn't carry on usual activities.

The overall mean for controls was 0.65 (S.D. = 2.35), with the urban controls somewhat higher (0.83) than the rural controls (0.25). Aside from seasonal fluctuations, the controls showed no significant trends over time.

The scores on Days Disability were adjusted in the same manner as the scores on Days Complaint except that standardization was not undertaken. Table 7.2 presents the phase-to-phase fluctuations for the adjusted Days Disability. The results here are not very illuminating: the two companies do not show the same pattern of fluctuations, and the fluctuations are not very large, nor do they have any self-evident relationship to the anticipation-unemployment-reemployment cycle.

The Days Disability measure is not correlated with age, education or the Crowne-Marlowe index of defensiveness. As in the case of Days Complaint, men high on Ego Resilience have fewer Days Disability, but this is true only for controls ($r = -0.38$) and not for cases ($r = -0.10$). And the temporal stability is quite low (average correlation of 0.13).

Fluctuations in Days Disability were not related to the objective employment experience, since a man's values on those occasions when he was unemployed were not different from values on other occasions when he was reemployed. However, it was found that men whose employment situation had not stabilized by 12 Months or 24 Months tended to go up in Days Disability between the first three phases and the last two, while men whose employment situation had stabilized had a tendency to go down in Days Disability for the same comparison ($P < 0.005$, for the difference in trends).

In addition, the observed association with subjective index Severity of the Experience is consistent with the last finding: men who at 12 Months and 24 Months were rating the whole experience as severe (not yet back to normal) showed an increase in Days Disability from the first three phases to the final ones, while men rating the experience less severe showed a decrease ($P < 0.001$ for difference in trends.) The Ego Resilience scale was found unrelated to the amount and direction of change in Days Disability between the early and late phase.

Additional analyses were run on Days Disability to parallel those already carried out for Days Complaint. They can be summarized as follows: a) The index of job changes was not related to Days Disability, either for mean levels or changes across phases. b) The effects of age and education on fluctuations in Days Disability were apparent only in Baker and were similar to those already observed for Days Complaint. Younger men were higher at Anticipation than older men ($P < 0.005$), but by 24 Months they were lower ($P < 0.05$). The less well educated men were somewhat lower at anticipation than the better educated men (ns), but throughout the latter phases they were significantly higher ($P < 0.001$).

PERCENT DAYS COMPLAINT THAT ARE ALSO DAYS DISABILITY

Another way of looking at the measure of Days Disability and its relationship with Days Complaint is to construct a derived index: the percent of the Days Complaint that are also Days Disability. The normative data on all controls over all interviews reveal that on some 31.0% of the days on which the respondent indicated on the health diary that he did not feel as well as usual he also indicated that he didn't carry on usual activities. This derived index shows, among the controls, both rural-urban and seasonal effects. Urban controls are more than twice as likely as rural controls (36.0% versus 15.3% respectively) to fail to carry out usual activities when not feeling well. Moreover, during the fall and winter months (October through February), the value is 39.7% while during the remaining months it is 23.8%; both urban and rural controls show this seasonal effect.

Table 7.3 presents the phase-to-phase fluctuations for this derived index, both unadjusted and adjusted for rural-urban and seasonal effects. The negative values are a bit awkward in this instance but their interpretation is still straightforward. For example, an obtained value of 4.0% and adjusted value of -30.3% (Anticipation, Baker) simply means that given the time of year and urban setting, the expected value for the index was that 34.3% of the complaint days would also be checked off as disability days, but only 4.0% actually were.

It can be seen that the two companies show a different picture. In Baker the men's overall values are significantly ($P < 0.001$) below the values for urban controls. Moreover, the only significant fluctuation seen over the five phases are the extremely low values during Anticipation; the men's value are lower ($P < 0.001$) than for the average of their other visits. In Dawson, no phase-to-phase fluctuations are large enough to be statistically reliable, and no anticipation effect is apparent.

Table 7.2 Mean values in days disability (adjusted) as cases go through different phases of the job loss experience.

	Means by phases					
Company	Antici-pation	Termi-nation	6 Months	12 Months	24 Months	Overall
All cases	-0.17	-0.38	-0.08	-0.19	-0.30	-0.22
Baker (urban plant)	-0.74	-0.64	-0.30	-0.77	-0.61	-0.61
Dawson (rural plant)	0.32	-0.14	0.09	0.27	-0.07	0.09

Table 7.3 Percent days complaint that are also days disability as cases go through the different phases of the job loss experience.

	Means by phases					
Cases and subsets	Antici-pation	Termi-nation	6 Months	12 Months	24 Months	Overall
Unadjusted values, in percent						
Baker (urban plant)	4.0	21.7	13.5	21.6	22.5	15.6
Dawson (rural plant)	33.7	35.0	9.4	44.0	53.1	27.8
Adjusted values, in percent						
Baker (urban plant)	-30.3	-18.9	-16.7	-19.1	-15.4	-20.6
Dawson (rural plant)	10.2	8.1	0.6	14.5	23.1	6.7

Table 7.4 Mean days used drugs (for acute conditions only and adjusted for seasonal effects and rural-urban differences) as cases go through the different phases of the job loss.

	Means by phases					
Company	Anticipation	Termination	6 Months	12 Months	24 Months	Overall
All cases	0.88	-0.04	0.17	0.19	-0.52	0.16
Baker (urban plant)	1.23	0.06	0.54	0.26	-0.45	0.38
Dawson (rural plant)	0.58	-0.14	-0.03	0.13	-0.58	0.00

Additional analyses support the notion that the derived index is not very sensitive to the job loss and reemployment experience. For example, the values for men who are unemployed at a certain point in time are not strikingly different from the values for other occasions when the same men have later found a new job. Yet one might expect that when a man is without a job he might show a greater readiness not to carry on usual activities if he does not feel well than when he is working. The differences between Baker and Dawson, and between each company and its appropriate controls, further suggest that the meaning of this index is not invariant across different social settings, and that it may be much more situation-bound than Days Complaint.

All of this is not to say that it is an uninteresting measure. In an earlier report (Kasl, et al., 1975) we were able to show that social support measured by a different index than that used in this monograph reduced the likelihood of disability given that the person had some complaint.

DAYS USED DRUGS

This measure is simply a count of the number of days out of 14 on which the respondent recorded on the health diary that he used a drug (or drugs). The overall mean for the controls (5.35, S.D. = 6.1) was somewhat higher than the mean for the cases (4.41, S.D. = 5.6), but otherwise the phase means for the cases showed very little fluctuation. The temporal stability of this measure is fairly high ($r = 0.52$) and it is somewhat correlated with stable personality characteristics; for example, men low on Ego Resilience reported higher mean Days Used Drugs than did men high on Ego Resilience (5.29 versus 3.02, $P < 0.005$). These findings lead to the suspicion that there are strong individual differences in the habit of taking drugs (e.g., aspirin, tranquilizers, laxatives, etc.) and that these, together with the occasional presence of a chronic condition for which continuous medication must be taken, would preclude this index from being sensitive to stressful events.

A more refined coding of the health diary data included reasons for taking drugs. On approximately half of the occasions on which a drug was taken (51.2% for controls, 55.5% for cases), the reason was an acute condition or illness. Table 7.4 presents the data for a new index in which only days on which drugs were used for acute conditions are counted; the index is adjusted for rural-urban differences and seasonal effects in the same way as was Days Complaints in Table 7.1. The phase to phase fluctuations in Table 7.4 reveal a pattern that is quite similar for the two companies: Anticipation values are elevated, 24 Months values are depressed and the remaining phase means show minor fluctuations around the overall company averages. In the two companies, the downward trend from early to late phases is highly significant ($P < 0.001$).

It is also worth noting that the pattern of phase fluctuations in Table 7.4 resembles much more the changes seen for Days Complaint (Table 7.1) than it does the changes for Days Disability (Table 7.2) or Percent Days Complaint That Are Also Days Disability (Table 7.3). Thus even though Days Used Drugd for Acute Conditions appears on the surface to be less a measure of perceived health and more a measure of what a man does about his perceived state of

Table 7.5 Mean days saw doctor and mean dissatisfaction in social support as cases go through the different phases of the job loss experience.

Cases and subsets	Means by phases: Anticipation	Termination	6 Months	12 Months	24 Months
Days saw doctor					
Baker (urban plant)	0.09	0.37	0.20	0.19	0.03
Dawson (rural plant)	0.30	0.11	0.17	0.28	0.23
Dissatisfaction with social support					
Baker (urban plant)	0.39	1.00	0.36	0.31	0.43
Dawson (rural plant)	0.42	-0.11	0.05	-0.01	-0.13

health, it nevertheless behaves like Days Complaint (perceived health) and not like Days Disability (sick role behavior).

OTHER MEASURES BASED ON THE HEALTH DIARY

Another measure coded from the two week health diary was Number of Illnesses. The coding here is based primarily on the contiguity of days of not feeling as well as usual and the clustering of symptoms that are described by the respondent during a probe by the nurse. The measure is very similar to Days Complaint, with which it correlates fairly highly ($r = 0.55$ and $r = 0.49$ for controls and cases, respectively). Of course, it has a lower mean and variability (0.47, S.D. = 0.7, and 0.51, S.D. = 0.8, for controls and cases, respectively), and the probe for symptoms makes it a more focused, specific measure than the more general Days Complaint. The analysis of the data on Number of Illnesses replicated all of the patterns of changes described previously for Days Complaint. Also found were the associations with the subjective rating of the severity of the job loss experience and with the Ego Resilience measure. In short, these findings tend to strengthen our confidence in the results obtained with the primary measure, Days Complaint.

Another measure that was examined was Days Saw Doctor: the number of days out of 14 on which the respondent saw a doctor. This measure has too many zero scores to enable one to perform adequate analysis of the data or to observe striking fluctuations across phases. The overall mean for controls was 0.22 (S.D. = 0.86), while the cases had an overall mean of 0.20 (S.D. = 0.59); no seasonal effects or rural-urban differences were evident. The top of Table 7.5 summarizes the primary findings with this measure: In Baker, there was a significant increase ($P < 0.02$) between Anticipation and Termination in visits to a doctor, while in Dawson, there was a significant decrease ($P < 0.05$) for the same two phases; the difference in the trends between the two companies is highly significant ($P < 0.005$). No other phase to phase changes in Table 7.5 are significant.

The bottom of Table 7.5 shows the fluctuations in an index that reflects dissatisfaction with social support and consists of items dealing with the man's perceived inadequate opportunities for pleasurable socializing with friends, for discussing problems with them when feeling low, and so on. The means for the phases are based on standard scores (z scores) where the appropriate (urban or rural) control means and standard deviations are used as the reference points. It can be seen that in Baker, there is a highly significant increase in dissatisfaction with social support between Anticipation and Termination, while in Dawson, there is a significant decrease. These differential changes between Baker and Dawson are strikingly similar to the changes in Days Saw Doctor. It would thus appear that the latter measure, which indicates the activity a person may undertake as a result of his perceptions of his health, is more sensitive to fluctuations in social support than it is to changes in perceived health (Days Complaint).

CHAPTER 8

SOME PREDICTORS OF THE JOB LOSS EXPERIENCE

Chapters 4 through 7 have dealt with some of the consequences of the job loss experience. In this chapter, we shall examine the predictors of the job loss experience, a traditional concern of labor economic studies of unemployment. There are four variables characterizing the job loss experience with which we shall be concerned: 1) proportion of weeks unemployed during the 24 months after plant closing; 2) number of weeks after the plant closing before the respondent started working on his first full-time job; 3) number of job changes experienced during the first year; and 4) comparison of old and new job at 24 Months (average on seven job dimensions, 1 = new job much better to 5 = new job much worse). These variable have been introduced and discussed in Chapter 3. It will be noted that all but one of them cover the two year experience after plant closing. The job changes index reflects only the first 12 months, because it was felt that the accuracy of the respondents' recall at 24 Months, covering the whole previous year, was not comparable to the data for the first year during which several visits took place.

Two of the indices, proportion of time unemployed and number of weeks till first full-time job, are highly correlated ($r = 0.91$), so the findings on the two are very similar. It was therefore decided to present the findings on only the first of these variables, even though conceptually, the two measures could be tapping different aspects of the unemployment experience. In actuality, however, the high correlation indicates that men who found jobs promptly were unlikely to have much further unemployment. The two other measures, job changes and comparison of old and new job, are essentially uncorrelated with each other ($r = 0.09$) and with the two unemployment indicators (none of the four correlations exceeding ± 0.10).

The analyses performed for this chapter were correlations and stepwise multiple regressions. Following is the list of predictors used in these analyses. Variables which have not been described or used previously (e.g., Chapters 2 or 4) will be here explained:

1. Age

2. Education

3. Hourly pay: pay on original job before plant closing.

4. Number of years at company: number of years worked at original job.

5. Wage-earners: proportion of household members who are wage-earners; low x = high number of dependents.

6. Relatives nearby: number of relatives of respondent and his wife who live nearby.

7. R rates own health: global self-assessment of respondent's own health at initial visit; 1 = excellent to 4 = poor.

8. Number of symptoms: based on a health history checklist of 15 symptoms, conditions, or illnesses, which respondent admits to on initial visit.

9. Interviewer rates health: the nurse-interveiwer's evaluation of the man's pre-termination health status; 0 = not disabled, 1 = potentially disabled (has a chronic condition, such as diabetes or hypertension, which usually curtails longevity and which might conceivably interfere with ability to perform some job, but does not interfere with current job), 2 = minimally disabled (has a condition which is bothersome but doesn't seriously interfere with work), 3 = moderately disabled (has a condition which has imposed a restriction on the type of job he can do); since this rating was done at 12 Months, it is impossible to rule out the kind of bias in which the nurse's rating was influenced by the kind of unemployment experience the man actually had during the first year.

10. Illness behavior: mean of 3 items reflecting readiness to see a doctor, given presence of specified symptoms; low x = medical care seeking is highly likely; patterned after the index in Mechanic and Volkart (1961).

11. Need for approval: the Crowne-Marlowe scale of the need for social approval; high x = strong need for approval.

12. Flexibility-rigidity: the CPI Flexibility-Rigidity scale; high x = flexible.

13. Ego resilience: the Bloch Ego Resilience scale; high x = high ego strength or resilience.

14. Achievement risk: a modified Achievement Risk Preference scale, originally developed by Athinson and O'Connor (1966) as a possible alternative to the TAT-based measure of need for achievement; eleven items, all dealing with preference for achievement or competition situations in which the chances of success are about even versus chances are very low or very high; high x = preference for intermediate risk, presumptive of high need for achievement.

15. Number of defenses: a composite of several indices, described in detail in Chapter 2.

16. Relative economic deprivation: relative economic deprivation at Anticipation; see Chapter 4.

17. Insecurity: deprivation on feelings of security about the future at Anticipation; see Chapter 4.

18. Not getting ahead: deprivation on feelings of getting ahead in the world at Anticipation; see Chapter 4.

19. Lack of fulfillment: summary index of deprivation on the following four dimensions: chance to use one's best skills, feelings that things one is doing are interesting, opportunity to learn new things and gain new skills, being able to do things one's way; based on data at Anticipation; high x = very little fulfillment; see Chapter 4.

20. Depression: at Anticipation; see Chapter 4.

21. Anomie: at Anticipation; see Chapter 4.

22. Anger-irritation: at Anticipation; see Chapter 4.

23. Suspicion: at Anticipation; see Chapter 4.

24. Anxiety-tension: at Anticipation; see Chapter 4.

25. Serum uric acid: at Anticipation.

26. Serum pepsinogen: at Anticipation.

27. Serum cholesterol: at Anticipation.

Tables 8.1 through 8.3 present the basic correlations between the 27 selected predictors and the three outcome variables which were selected to characterize the unemployment experience. The data are presented: a) for all terminees, b) for Baker and Dawson men separately, and c) separately for terminees who are either below or above the median on Social Support. As an approximate guideline to significance testing of these correlations, the following can be notes, using two-tailed tests: a) for all men, $r = \pm 0.20$, $P = 0.05$; b) for Baker men, $r = \pm 0.30$, $P = 0.05$; c) for Dawson men, $r = 0.27$, $P = 0.05$; d) for men low or high on Social Support, $r = 0.28$, $P - 0.05$.

Table 8.1 gives the association with proportion of weeks unemployed during the two years after the plant closing. The three strongest predictors involve health status variables: global self-rating of health from poor to excellent, number of previous symptoms or conditions, and the nurse's rating as somewhat disabled. As noted above, the nurse's rating was obtained at 12 Months, and thus could be contaminated by her knowledge of the man's unemployment experience during the first year. The remainder of the correlations suggest that men who eventually experienced more unemployment:

Table 8.1 Predictors of proportion of weeks unemployed during two years after plant closing: Correlations.

Predictors	All Men	Baker	Dawson	Low on Social Support	High on Social Support
1. Age	0.26	0.17	0.34	0.05	0.45
2. Education	-0.16	-0.13	-0.18	-0.20	-0.13
3. Hourly pay	-0.16	-0.36	-0.06	-0.14	-0.20
4. Number of years at company	0.10	-0.01	0.17	-0.01	0.16
5. Wage-earners	0.31	0.33	0.29	0.22	0.40
6. Relatives nearby	0.18	0.20	0.22	-0.10	0.42
7. R rates own health	0.32	0.16	0.45	0.21	0.60
8. Number of symptoms	0.41	0.35	0.46	0.48	0.38
9. Interviewer rates health	0.54	0.52	0.56	0.33	0.73
10. Illness behavior	-0.27	-0.29	-0.26	-0.24	-0.31
11. Need for approval	0.22	0.11	0.30	0.17	0.24
12. Flexibility-rigidity	0.00	0.22	-0.21	0.05	-0.05
13. Ego resilience	0.03	0.12	-0.06	0.02	0.03
14. Achievement risk	-0.21	-0.01	-0.31	-0.11	-0.31
15. Number of defenses	0.09	-0.06	0.23	0.12	0.07
16. Relat. econ. depriv.	-0.15	-0.11	-0.15	0.09	-0.34
17. Insecurity	0.04	0.06	0.01	0.00	0.10
18. Not getting ahead	0.00	0.08	-0.09	0.07	-0.05
19. Lack of fulfillment	0.04	0.05	0.00	0.03	0.09
20. Depression	0.02	-0.10	0.10	-0.21	0.28
21. Anomie	0.04	-0.01	0.05	-0.19	0.24
22. Anger-irritation	-0.16	-0.23	-0.07	-0.35	0.04
23. Suspicion	0.01	-0.06	0.06	-0.18	0.21
24. Anxiety-tension	-0.02	-0.14	0.05	-0.12	0.08
25. Serum uric acid	0.26	0.21	0.32	0.13	0.36
26. Serum pepsinogen	0.30	0.06	0.43	0.02	0.45
27. Serum cholesterol	0.07	0.05	0.07	0.03	0.10

a) were somewhat older; b) came from households which tended to have fewer dependents and.or more than one wage-earner; c) were more likely to seek medical care in the presence of common symptoms; d) were somewhat higher on the need for social support; e) were somewhat lower on the need for achievement (i.e., preferred very low or very high probabilities of success, indicative of fear of failure); f) had initially higher levels of serum uric acid and serum pepsinogen. The pattern of these correlations suggests the influence of primarily two sets of variables: those which reflect undesirable characteristics from the prospective employer's point of view (older man, poorer health) and those which reflect the strength of motivation to find reemployment (fewer dependents at home, fear of failure, tendency toward illness behavior). The importance of the health status variables is probably due to the fact that they can be both an undesirable characteristic and an interference with adequate job-seeking motivation. The higher levels of serum uric acid and serum pepsinogen among those men who later experience more unemployment are compatible with the interpretation that these levels are indicative of stress reactions, and that the men under greater stress during Anticipation have a more difficult time finding a job. However, the variables which would indicated stress at the psychological level (variables 17-24) do not reveal any significant associations.

In scanning the correlations in the next two columns (Baker versus Dawson), we are interested in seeing to what extent the overall picture holds equally for both companies. The most conservative way to examine this issue is to test for the significance of difference between correlations. By this criterion, only one variable shows a significant inter-company difference and this is about what one would expect by chance in a set of 27 variables.

Differences in correlations due to level of Social Support are significant on: Age, Relatives Nearby, Interviewer Rates Health, Relative Economic Deprivation, Depression, Anomie, Anger-Irritation, Suspicion, and Serum Pepsinogen. Interpreting these differences is again a matter of speculation, since we cannot offer independent corroborating evidence in support of any one interpretation. Nevertheless, we offer the following interpretations.

Finding reemployment is probably primarily a function of the job market and none of the variables in Table 8.1 can probably greatly facilitate finding a job. (For example, Social Support is uncorrelated with proportion of weeks unemployed ($r = -0.01$) and having relatives nearby actually has a mild positive association with weeks of unemployment.) However, many variables have the potential to function as obstacles to prompt reemployment, or, at least, can act to reduce the motivation to find a new job promptly. Thus, for example, men who are low on Social Support do not see relatives living nearby as a potential source of help, i.e., such men feel that they are "on their own", and it doesn't matter much if few or many relatives are living nearby. However, men who are high on Social Support may feel that relatives are potential source of help, and the more such relatives there are around, the better are the prospects for help, such as financial assistance. The existence of many such relatives, in the presence of a high sense of social support, may thus reduce the urgency to find a new job quickly.

Table 8.2 Predictors of number of job changes experienced during the first year after plant closing: Correlations.

Predictors	All Men	Baker	Dawson	Low on Social Support	High on Social Support
1. Age	-0.17	-0.25	-0.13	-0.32	-0.09
2. Education	0.00	-0.09	0.06	0.09	-0.07
3. Hourly pay	-0.08	-0.14	-0.05	0.00	-0.17
4. Number of years at company	0.01	-0.34	0.19	-0.25	0.17
5. Wage-earners	-0.09	0.02	-0.18	0.20	-0.30
6. Relatives nearby	-0.03	0.08	-0.04	-0.05	-0.02
7. R rates own health	0.05	-0.01	0.10	0.17	-0.06
8. Number of symptoms	-0.05	0.05	-0.11	0.06	-0.12
9. Interviewer rates health	-0.12	0.11	-0.28	-0.11	-0.12
10. Illness behavior	0.01	-0.10	0.11	-0.17	0.26
11. Need for approval	0.01	-0.01	0.03	-0.10	0.05
12. Flexibility-rigidity	-0.20	-0.20	-0.21	-0.25	-0.19
13. Ego resilience	-0.02	-0.18	0.11	-0.21	0.11
14. Achievement risk	0.15	-0.08	0.27	0.06	0.22
15. Number of defenses	0.10	0.09	0.11	0.10	0.08
16. Relat. econ. depriv.	-0.24	-0.37	-0.14	-0.34	-0.12
17. Insecurity	-0.10	-0.02	-0.16	0.03	-0.18
18. Not getting ahead	-0.13	0.04	-0.24	-0.05	-0.17
19. Lack of fulfillment	-0.11	-0.19	-0.07	0.00	-0.20
20. Depression	-0.06	0.09	-0.15	-0.02	-0.03
21. Anomie	0.15	0.21	0.12	0.11	0.25
22. Anger-irritation	-0.03	-0.03	-0.03	0.00	-0.03
23. Suspicion	-0.07	-0.04	-0.09	0.03	-0.08
24. Anxiety-tension	-0.06	-0.03	-0.08	-0.01	-0.06
25. Serum uric acid	-0.10	-0.22	-0.03	-0.18	-0.05
26. Serum pepsinogen	-0.05	0.21	-0.15	0.21	-0.18
27. Serum cholesterol	-0.22	-0.44	-0.08	-0.32	-0.11

The stronger associations between older age and poor health status, (nurse's rating) and amount of unemployment among the men high in Social Support, may have a similar dynamic. Men who are older and in poor health may receive encouragement from spouse and friends and relatives which, essentially, carries the message: "Take your time in finding a new job; look for a job which will not be too demanding and threaten your health." But among men low on Social Support, the socially significant others do not act as a buffer which reduces selectively the pressure on an older man in poor health to find a job quickly.

The data on depression, anomie, anger-irritation and suspicion are somewhat more difficult to interpret since they involve modest negative associations among men low on Social Support and modest positive associations among men high on Social Support. At the descriptive level it appears that among men low on Social Support (who are on their own), presence of negative affective reactions at Anticipation is instrumental in finding a job more quickly, which thus removes the situational source of the threat which gave rise to the reaction in the first place. But among men high on Social Support, negative affective reactions at Anticipation may be instrumental in rallying significant others to provide emotional help and encouragement, and reduce the pressure to find a new job.

Overall, then, it would appear that high social support may legitimize (temporarily at least) the unemployment role, provided extenuating circumstances are present: older age, poorer health, status, psychological distress in anticipation. However, under conditions of low social support, such extenuating circumstances may never come into play, and thus influence job seeking behavior. It must be emphasized that these are mere speculations, i.e., hypotheses to be tested in the future. Moreover, it is not clear how suitable such an interpretation is in understanding the biological data, such as the differential role of serum pepsinogen.

Table 8.2 presents the correlations with number of job changes. The data on all terminees combined reveal only three significant correlations: men who experienced more job changes were more rigid, had a lower initial sense of economic deprivation, and were lower on serum cholesterol. Moreover, these three correlations are of exceedingly modest magnitude. The variable, Job Changes, presumably reflects both voluntary and involuntary components: a man does not like his first new job and decides to find another one, or the first new job provides only unstable employment and the man eventually becomes laid off or loses it altogether. It makes some sense that men who initially felt relatively better off economically should be more willing to make job changes before finding stable reemployment. However, the correlation with rigidity is difficult to interpret. And if high level of serum cholesterol at Anticipation is indicative of anticipatory stress, then the negative association would suggest that those experiencing lower stress at Anticipation are willing to make more job changes.

The next two columns of correlations (Baker versus Dawson), reveal two variables which have correlations significantly different from each other: number of years at the company, and the interviewer rating of health. (The correlations involving serum pepsinogen and serum cholesterol almost reach

Table 8.3 Predictors of evaluation of new job in comparison to original job (high score implies negative evaluation of new job): Correlations.

Predictors	All Men	Baker	Dawson	Low on Social Support	High on Social Support
1. Age	-0.06	-0.16	-0.08	-0.05	-0.08
2. Education	0.01	0.00	0.05	0.18	-0.19
3. Hourly pay	0.06	0.00	0.07	0.08	0.04
4. Number of years at company	0.02	-0.08	0.03	-0.09	0.11
5. Wage-earners	-0.02	0.02	-0.07	-0.04	0.00
6. Relatives nearby	0.14	0.11	0.09	0.16	0.11
7. R rates own health	0.01	0.04	-0.11	-0.33	0.33
8. Number of symptoms	0.04	0.32	-0.12	0.07	0.01
9. Interviewer rates health	-0.09	0.15	-0.25	-0.19	0.05
10. Illness behavior	-0.03	-0.22	0.13	-0.11	0.06
11. Need for approval	-0.05	0.19	-0.29	-0.07	-0.03
12. Flexibility-rigidity	0.13	-0.02	0.22	0.29	-0.05
13. Ego resilience	-0.08	-0.15	-0.01	0.05	-0.19
14. Achievement risk	0.11	0.16	0.15	0.09	0.13
15. Number of defenses	-0.24	-0.12	-0.32	-0.23	-0.27
16. Relat. econ. depriv.	-0.37	-0.55	-0.22	-0.55	-0.18
17. Insecurity	-0.03	-0.01	-0.07	-0.02	-0.02
18. Not getting ahead	0.22	0.03	0.30	0.37	0.05
19. Lack of fulfillment	0.12	0.11	0.07	0.15	0.11
20. Depression	0.06	0.06	0.06	0.04	0.20
21. Anomie	-0.01	-0.06	-0.10	-0.19	0.21
22. Anger-irritation	0.09	0.28	0.02	-0.05	0.28
23. Suspicion	0.07	0.53	-0.24	-0.11	0.30
24. Anxiety-tension	0.11	0.15	0.04	0.01	0.27
25. Serum uric acid	-0.06	0.16	-0.14	-0.17	0.08
26. Serum pepsinogen	0.23	0.07	0.32	0.26	0.21
27. Serum cholesterol	0.08	-0.01	0.12	-0.14	0.29

significance.) The reasons for these differential associations are difficult to ascertain.

Differences in correlations due to level of Social Support are significant on: number of years at the company, wage-earners, illness behavior, and serum pepsinogen. Again, it is extremely difficult to come up with plausible interpretations of these differences.

Overall, the variable job changes reveals only a few significant predictors. And while its general meaning is reasonably clear--it is an indicator of stabilization, or failure to stabilize, in post-plant closing and employment--it probably has multiple determinants, and the meaning of the associations with the few predictors is difficult to ascertain.

Table 8.3 deals with a different kind of an outcome variable, an evaluative comparison of the old and new job, retrospectively assessed at 24 Months. It is clearly not an objective outcome variable and the objective work setting determinants of this comparison are unknown to us. Nevertheless, it is an important outcome variable, since an assessment of the job loss experience should include some comparative sense of well-being and job satisfaction on the new job, compared with the original one.

The data on all terminees combined reveals a few significant correlations. Men who have a more negative evaluation of their new job: a) have fewer defenses, b) reported lower relative economic deprivation at Anticipation, c) had a greater sense of deprivation on feelings of getting ahead in the world, and d) had somewhat higher serum pepsinogen levels at Anticipation. The strongest correlation is with relative economic deprivation, and the implication of the association is that men who felt relatively well off economically while on their old jobs, are more likely to be critical of their new jobs. Since the scale Lack of Fulfillment does not significantly predict to the comparative evaluation of the new job, this suggests that economic factors, not self-actualization issues, are primary in how the new job gets evaluated.

The next two columns of correlations, Baker versus Dawson men, reveal several correlations which are significantly different from each other: Number of Symptoms, Interviewer Rates Health, Need for Approval, Relative Economic Deprivation, and Suspicion. In general, Baker men who are in poorer health who are more suspicious, but feel better off economically at Anticipation, are the ones who have a negative evaluation of their new jobs. In contrast the Dawson men with a negative evaluation of their new jobs are somewhat less sick, less suspicious, and are lower on the need for approval.

Differences in correlations due to the level of Social Support reveal significant findings for R Rates Own Health, Relative Economic Deprivation, Anomie, Suspicion, and Serum Cholesterol. The biggest difference involves the global self-evaluation of own health: men in poor health have a positive view of their new job if they are low on social support, and a negative view if they are high on social support. It is difficult to know what this means. The negative correlation can be obtained if the men in poor health either

Table 8.4 Predictors of proportion of weeks unemployed during two years after plant closing: Stepwise multiple regression.

Cases and subsets, order of entry of variable into stepwise regression			Cumulative variance accounted for with each entry	Beta	t-ratio	Multiple R
Baker men						
1st:	9.	Interviewer rates health	27.3%	0.377	2.86	
2nd:	3.	Hourly pay	35.2%	-0.297	2.29	
3rd:	5.	Wage-earners	41.9%	0.304	2.32	
4th:	6.	Relative nearby	46.8%	0.303	2.24	
5th:	10.	Illness behavior	54.8%	-0.297	2.23	0.741
Dawson men						
1st:	9.	Interviewer rates health	31.4%	0.559	4.73	
2nd:	16.	Relative economic deprivation	43.7%	-0.274	2.34	
3rd:	8.	Number of symptoms	52.6%	0.348	3.10	
4th:	11.	Need for approval	59.7%	0.277	2.49	0.773
Men low on social support						
1st:	8.	Number of symptoms	22.7%	0.466	3.41	
2nd:	22.	Anger-irritation	37.9%	-0.372	2.76	
3rd:	9.	Interviewer rates health	42.6%	0.222	1.65	0.653
Men high on social support						
1st:	9.	Interviewer rates health	54.0%	0.696	7.67	
2nd:	11.	Need for approval	63.3%	0.232	2.69	
3rd:	1.	Age	70.0%	0.252	2.88	
4th:	12.	Flexibility-rigidity	73.1%	-0.180	2.06	
5th:	7.	R rates own health	75.9%	0.176	2.00	0.871

a) attribute it to their old job and thus their new job appears relatively better, or b) lower their aspirations about what kind of a new job they can find. A positive correlation can be obtained if men in poor health either a) expect to receive special consideration on the new job, given their health status, and failing this, become critical of it, or b) expect that they should not have to work at all and are thereby critical of any job they are on. These are only speculations which, furthermore, would have to be linked up with level of Social Support.

The next two tables present the results of step-wise multiple regressions, first on proportion of weeks unemployed and second on evaluation of new job. Each table presents the data separately for the two companies, and for men low versus high on Social Support. The following information is provided: 1) the order of the variables as they entered the step-wise regression 2) the cumulative percent of variance accounted for as each variable was successively added 3) the final Beta coefficients (that is, the standard partial regression coefficients) when all the variables listed in that particular multiple regression have been entered in 4) the significance (t-ratios) of the Beta coefficients 5) the multiple correlation between that given set of predictors and the dependent variable.

The tables do not include varibles where the Beta coefficient had t-ratios of < 1.65 (i.e., $P = 0.10$, two-tailed test). However, no table will contain more than five predictors even if additional predictors had Beta coefficients which were also significant. This practice was adopted because with the relatively small numbers on which these multiple regressions are based, the danger of capitalizing on chance fluctuations increases severely after the first few variables.

Table 8.4 presents the results for predicting the proportion of weeks unemployed during the two years. As would be expected, the health status variables reveal the most important contribution. Among these the interviewer rating of health as potentially disabling or not has a rather dramatic contribution to the variance explained. The variance accounted for among men low on Social Support is notably lower than for men high on Social Support. The only result in Table 8.4 which is unexpected in view of the correlation in Table 8.1, is the role of flexibility-rigidity for men high on Social Support: given the contribution of the other variables, it would appear that, in addition, being rigid slightly increases the length of unemployment.

Table 8.5 gives the predictors of the comparative evaluation of the old and new jobs. Among Baker men, the best predictors of negative evaluation of the new job are: relatively high levels of economic well-being and of anger-irritation, and a high number of symptoms. For Dawson men, the list is quite different, including high serum pepsinogen and low suspicion. Among men low on Social Support, the role of Relative Economic Deprivation again stands out.

At this point, we wish to remind the reader that the present study was designed to examine health and behavioral effects of a permanent plant shutdown, and not variables which predict to the reemployment experience and to

Table 8.5 Predictors of evaluation of new job in comparison to original job: Stepwise multiple regression.

Cases and subsets, order of entry of variable into stepwise regression		Cumulative variance accounted for with each entry	Beta	t-ratio	Multiple R
Baker men					
1st:	16. Relative economic deprivation	29.7%	-0.623	4.87	
2nd:	22. Anger-irritation	42.8%	0.483	3.70	
3rd:	8. Number of symptoms	57.1%	0.415	3.24	
4th:	10. Illness behavior	64.5%	-0.266	2.05	
5th:	25. Serum uric acid	70.6%	0.256	1.98	0.840
Dawson men					
1st:	15. Number of defenses	10.1%	-0.338	2.39	
2nd:	26. Serum pepsinogen	23.1%	0.607	4.54	
3rd:	23. Suspicion	41.3%	-0.550	4.16	
4th:	1. Age	48.1%	-0.269	2.14	
5th:	11. Need for approval	52.7%	-0.252	1.78	0.726
Men low on social support					
1st:	16. Relative economic deprivation	29.8%	-0.696	5.55	
2nd:	18. Not getting ahead	49.7%	0.373	3.01	
3rd:	15. Number of defenses	59.9%	-0.344	2.67	.774
Men high on social support					
1st:	7. R rates own health	11.0%	0.325	2.00	
2nd:	15. Number of defenses	18.0%	-0.266	1.65	0.425

job satisfaction on a new job. Nor-epinephrine excretion rate which was shown to be a predictor in Chapter 5 could not be included in this analysis because it was done on too small a sample. The data in this chapter are only an adjunct to the main purpose of the study. The sample is small and intentionally homogeneous regarding many socio-demographic and occupational variables. Consequently, the findings in this chapter will be of only limited interest to labor economists who study job loss and reemployment. We present these data primarily in the spirit of drawing a more complete picture of the study subjects and their experience.

CHAPTER 9

SUMMARY AND CONCLUSIONS

INTRODUCTION

This study is a longitudinal investigation of the health and behavioral effects of job loss and of the ensuing unemployment and/or job change experience. It reflects a research strategy of trying to identify significant social events of stressful nature that are predictable and can thus be studied in their natural setting with sufficient scientific rigor. The design may also be seen as an approach to the study of life events that is complementary to the more typical current approach of adding up life events into one global score but not examining any event in depth.

We were able to identify two plants that were going to shut down permanently and where all the employees would lose their jobs. In this way, we were able to accumulate a cohort of men whom we could then follow at regular intervals during a period of up to two years as these men went through the stages of anticipation of job loss, plant closing and employment termination, unemployment (for most), probationary reemployment and stable reemployment.

The target population was composed of male blue-collar workers at these two plants. The men were married, in the age range of 35-60 and had worked at the company an average of 17 years. Of the men eligible for study, 79% agreed to participate.

The men were seen in their homes by public health nurses, with the schedule of visits being as follows:

> Phase 1. Anticipation: The first nurse visit took place some four to seven weeks before scheduled plant closing; the men were still on their old jobs but they were already well aware of the impending shutdown. We have called this the Anticipation Stage.
>
> Phase 2. Termination: The second nurse visit took place some five to seven weeks after plant closing. At this point the men were either unemployed or they had found a new job but were still in the probationary period of employment.
>
> Phase 3. 6 Months: The nurse visits during this phase took place some four to eight months after plant closing. Some men were seen only once, but for some 60% of the men there were actually two nurse visits during this phase. For these latter men, the average of the two values for each study variable is used in data analysis. During Phase 3, more and more men found new jobs; some were still unemployed, and a few had made another job change.

Phase 4. 12 Months: Here the nurse visit took place one year after plant closing. Most men had achieved a stable reemployment situation, but some were experiencing further job changes and a few remained unemployed.

Phase 5. 24 Months: The last nurse visit took place approximately two years after the plant closing. A sizeable minority of men had experienced additional job changes and unemployment during the previous year.

During the course of each round of visits to the man's home, the nurse collected blood and urine specimens, took blood pressure, pulse rate, height and weight, and use a structured interview schedule to collect diverse social-psychological and health data. These included his current employment situation, his economic circumstances; his subjective evaluation of his job and financial situation; questionnaire measures of mental health and affective reactions; and physical health data. Because there were a great many data being collected, two nurse visits were necessary; these two visits came two weeks apart and during this period the men kept a health diary with a daily record of their health.

Many of the data collected are based on standardized, explicit (precoded) interview schedules and questionnaire measures, developed over a period of four months of pretesting. The public health nurses, all of whom were experienced interviewers, received two to three weeks of training in the use of the interview schedule and questionnaires. This training was designed primarily to ensure uniformity of interview behavior and strict adherence to the interview schedule, its questions and its built-in probes.

The design of the study involves the use of controls who were continuously employed men in comparable jobs. They were followed for almost the same length of time and exactly the same assessment procedures were used.

The 100 men who lost their jobs came from two companies. One was a paint manufacturing plant located in a large metropolitan area. The men were largely machine operators, assistants in the laboratory and clerks in the shipping department; the work was relatively light for most of them. The other plant was located in a rural community of some 3,000 people. It manufactured display fixtures used by wholesale and retail concerns, and the men were machine operators, assembly line workers and a few tool and die makers.

The 74 controls came from four different companies and were quite comparable to the cases on major demographic characteristics, type of work, and the rural-urban location of the plant. One was the maintenance department in a large university and the men were largely machinists and carpenters. The second company was a plant that manufactured parts for heavy trucks; it was located in a large metropolitan area, and the men were machine operators and assembly line workers. The other two companies were both rural manufacturing concerns where the men were likewise machine operators and assembly line workers.

JOB LOSS EXPERIENCE

The unemployment experience of the men in the urban company, herein referred to as Baker plant and the rural company, Dawson plant, can be described as follows. Overall, the men experienced an average of about 15 weeks of unemployment during the two years following the closing of the plants. In Baker plant the experience, during the first year was less severe: 65% were reemployed at the Termination visit proximately six weeks after the plant closed and the men averaged 8.2 weeks unemployed in the first year. The Dawson men had a more difficult time finding a job; only 30% were reemployed at the Termination visit and they experienced 12.5 weeks of unemployment in the first year. During the second year, the situation was reversed and more men in Baker than in Dawson experienced additional periods of unemployment. Thus by the end of the two year period, the cumulative experience of the men in the two companies was about the same. The men ended up in jobs that were similar to their old jobs, both in status and in pay. In the intervening year, however, the average union pay scale had increased about 10 cents per hour. The combination of time out of work, plus the loss of a step in pay increase that would reduce the amount of wages earned over the average 19 remaining years of employment, amounts to some 5,000 dollars to 6,000 dollars per man as a loss in total life time earnings.

A separate analysis of the social context of the two companies (Gore, 1973) has revealed that in the urban setting, where the men lived scattered throughoutout the city, the plant itself was an important focus of a sense of community and social support. With the plant closing, this "community" died (Slote, 1967). But in the rural setting, the small town itself and the people in it were the major source of a sense of community and social support for the men. When the plant closed down, the community and its social organization remained largely intact, and social interaction with former co-workers who were friends was not so severely disrupted. This issue of social support is impportant in certain segments of the analysis.

The most important economic setback to the Baker men was the loss of their accumulated pension benefits. They were returned 40 dollars per year of service which was surely less than the amount of money that had been deducted from their pay over the years, without interest. At Dawson, although pensions became vested, they ranged from only 17 cents to 63.14 dollars per month depending on the length of service. Three years after the plant closing only 47 of the 100 terminees had any sort of retirement benefits in their current employment.

The men described their experience as somewhat disturbing, as requiring several months for return to normal, and as involving about as much life change as getting married. Those who had the most unemployment and the least social support viewed the experience as more stressful than the others.

PSYCHOLOGICAL FINDINGS

The findings in the psychological area are summarized in Table 9.1. As in all summaries much is hidden. On the other hand some generalities appear. First, the two subjective reports of economic state showed some overall effects in that there were patterns of change and differences from controls which bespoke relationships meaningful to the experience of losing a job. Effects during the period of Anticipation were doubtful or absent but unemployment effects were definite. However, the effect of the number of job changes on these variables was the opposite of that which had been predicted. That is, those with the most job changes reported the fewest economic problems. Perhaps that is why they dared to change again. Social support had little effect on these two variables.

The deprivations, covering five dimensions of the job, showed rather consistent effects. They were influenced by the amount of unemployment, the number of job changes in the first year and by social support.

The affective states were less striking in their response in any overall way to the termination stress. However, those with more unemployment did respond with strikingly, and very significantly, more anxiety tension than those with less, and some of the other variables were sensitive to the number of job changes. The pattern of response for six out of the nine was influenced by social support.

In the miscellaneous category, the "self identity" reported on a sentence completion test consisting of six opportunities to complete the sentence "I am....." revealed interesting but complex changes. These must be studied in the original to be appreciated. Here again social support had an effect in that those high on social support had more family and home references and fewer references to self.

PHYSIOLOGICAL CHANGES

As can be seen from Table 9.2, a considerable number of physiological variables were recorded. Smoking is included here because of its influence on the risk of developing coronary heart disease. Compared to the preceeding table on psychological variables, the pattern of analysis is the same but the pattern of the results is rather different. There is a clear tendency for overall effects to be visible but less responsive to amount of unemployment and number of job changes. Several of the variables show changes during the period of Anticipation. There was almost no variable affected by social support.

The findings with regard to the catecholamines, nor-epinephrine and epinephrine are interesting in that during anticipation, there was striking interaction of stress with caffeine in boosting the urinary output of these substances. Coffee and related beverages had no effect on the output of men who were relaxed at home. Elevated catecholamine output during anticipation was predictive of prompt reemployment that might or might not be stable. The studies of serum glucose, serum pepsinogen and serum uric acid

Table 9.1 Summary of psychological findings.

Measure of strain	Overall effect	Anticipation effect	Unemployment effect	Job change effect	Moderation by social support
Relative economic deprivation	+	±	+	-*	±
Relative economic change	+	0	+	-*	0
Deprivations					
Security	+	+	+	+	+
Getting ahead	±	0	++	++	+
Respect	+	0	+	+	+
Use skills	++	0	++	+	+
Interesting work	+	0	0	+	+
Summary scale	+	0	+	++	+
Affective states					
Depression	0	0	+	+	+
Low self esteem	0	0	±	0	0
Anomie	+	0	+	+	+
Anxiety-tension	0	0	++	0	+
Symptoms	0	±	0	+	+
Insomnia	0	0	0	+	0
Anger/irritation	0	0	+	+	+
Resentment	0	±	0	+	0
Suspicion	0	0	+	+	+
Miscellaneous					
Self identity	++	+	++	0	+
Job dissatisfaction	+	±	+	0	0
Social activities	0	0	0	0	0
Activity level	++	0	0	+	+
Social interaction	+	0	0	0	+

*Effect opposite to that hypothesized.

Table 9.2 Summary of physiological findings

Measure of strain	Overall effect	Anticipation effect	Unemployment effect	Job change effect	Moderation by social support
Cholesterol	+	±	+	0	±
Pulse rate	±	0	+	0	0
Body weight	±	0	+	0	0
Smoking	0	0	0	0	0
Urine flow	±	+	0	0	0
Serum urea nitrogen	0	0	0	0	0
Serum creatinine	+	0	0	0	0
Nor-epinephrine	+	+*	-**	0	0
Epinephrine	+	+*	-**	0	0
PBI	+	±	--	--	--
Glucose	+	--	±	±	0
Pepsinogen and uropepsin	±	0	0	0	0
Serum uric acid	+	+	±	0	0

*Interaction with coffee.
**Unemployment effect was in the opposite direction from that hypothesized.

Table 9.3 Summary of the disease findings.

Measure of strain	Terminee Control Difference	Anticipation effect	Unemployment effect	Job change effect	Moderation by social support
Suicide	+	--	--	--	--
Dyspepsia	+	--	--	+	±
Joint swelling	+	+	+	0	++
Hypertension	+	+	0	0	0
Diabetes	0	--	--	--	--
Alcoholism	±	--	--	--	--
Alopecia	+	+	--	--	--

suggest that in a larger sample, diabetes, peptic ulcer, and gout might have appeared as unduly frequent.

DISEASES

Under disease we come to a review of the risk factors for coronary heart disease, cholesterol, body weight, blood pressure, catecholamines and serum glucose. The pattern of change in all but two, smoking and body weight, is such as to suggest a conclusion that one might find an excess of coronary heart disease among terminees. Suicide, dyspepsia, joint swelling, hypertension and alopecia seemed to be in excess among the terminees. The effect of social support in protecting against joint swelling is notable.

REPORTED HEALTH AND ILLNESS BEHAVIOR

The index, Days Complaint, which is the proportion of days on which the respondent reported in the health diary that he did not feel as well as usual, showed seasonal variation. After adjustment for season, it showed a striking Anticipation effect followed by a big drop at Termination and a rise again at 6 Months. A similar pattern is discerned in the use of drugs for acute conditions. The patterns of disability and physician visits were irregular and at best understandable only in terms of complex explanations.

PREDICTION OF JOB LOSS EXPERIENCE

A correlation and regression analysis predicting to three measures of the experience, proportion of time unemployed in the whole two years, number of job changes, and comparison of the old with the new job was presented. The multiple regression analyses were run separately for the two plants and for those high and low on social support. The principal conclusions from all this are that health is a dominant factor in relation to the proportion of time unemployed; the number of job changes is not really predictable from the variables available; and there is no consistency across company in the prediction of the subjective evaluation of the new job.

CONCLUSIONS

1. Though it is not reasonable to generalize from the present experience, limited to two plants closing and one threatening to close, all involved with one union, one gets a sense that neither companies nor unions nor government prepare adequately to deal with the human problems that result from the closing of a plant. That this is not a trivial problem is pointed out by Caloren (1974) who indicates that for the 18 months ending June 1972, the chance of an automobile worker in Ontario being terminated due to a shutdown or closure was 15%. This means an average expectation, if one may generalize, that one automobile worker in 10 will be subjected to termination each year.

2. The life time earnings loss to these men who were terminated in a time of high employment was relatively small but not trivial, perhaps

5,000-6,000 dollars per man.

3. Pensions constituted a major loss.

4. In the psychological sphere the personal anguish experienced by the men and their families does not seem adequately documented by the statistics of deprivation and change in affective state. Those of us who visited these men in their homes feel that what we saw is somehow better represented in Alfred Slote's book, Termination. This is not saying that effects in this area were not observed, it is merely that the numbers don't seem commensurate with the very real suffering that we observed. Two things probably account for this. First, the measurement techniques for subjective states are imperfect; and second, the adaptive capactities of man are such as to reduce the effects are striking. Indeed, in some men they may have been so transitory as to have been missed.

5. The physiological changes in these men were such as to suggest that in a larger sample an excess of diabetes, peptic ulcer and gout might appear. Furthermore, the changes would imply a temporary increase in atherogenesis, which might lead to a later rise in the incidence of coronary heart disease and stroke.

6. In the disease area, there was a suggestion of increased frequency of peptic ulcer both in the men and in their wives. There was an excess of swollen joints and of hypertension and three of the 100 men suffered temporarily from a patchy baldness.

7. Health complaints were increased during the Anticipation phase and during readjustment to new jobs at 6 Months, but illness behavior was not discernably influenced by the termination in this rather small sample.

8. From reading the records one gets the impression that the seven men who resigned at their own convenience from Baker plant fared better than those who waited for their severence pay. In many respects, the men at Dawson were better off and a notable difference between the terminations is that the Dawson management was much more flexible about letting men resign when they had new jobs lined up.

9. A reasonable amount of the success in finding reemployment is predictable. The dominant variables are health and health related. Age and education enter in complex ways, if at all. Surely the variety and mix of skills that a man can command influences his reemployment but we did not have an appropriate measure in this area.

10. It seems reasonable to equate this experience with that of men who are fired from an ongoing job but we know of no data to prove this.

11. Even though the measure of social support was a relatively weak one constructed from available items after the data were all in, it had a significant moderating effect on 15 of 22 psychological variables and a striking effect on joint swelling, but no clearly significant effect on any

other physiological variables. However, our measure of psychological defense did influence the course of some of these physiological variables.

12. Logically and based on one experience, American Oil Company (1972) it would seem possible to close a plant in a way that is less damaging to the employees. To this end recommendations are made in the next section.

RECOMMENDATIONS

We have several recommendations for policies that would improve the lot of the terminated employee. Most of these are not new. In fact most of them were presented at a Senate subcommittee hearing in 1969 (Cobb, 1969).

Recommendation number one is the establishment of planning and transition periods of defined length with appropriate functions assigned to management, union, governments and communtiy agencies for each period. A plant closing normally involves four steps. First comes a management decision to close. Second comes labor-management negotiation over the policies to be pursued. One of the policies to be negotiated should be the timing of the remaining two steps. The third step is a period of joint planning between representatives of management, labor, local government and community agencies. This should take several months, but in many closings it is omitted entirely. American Oil Company (1972), based on its Neodosha experience, recommends three to four months. The fourth step is the most crucial. We call it the transition period. The length of this transition period is properly a subject of labor management negotiation, for management will usually want to keep it short and labor will normally want to have it as long as possible. During this period, each employee should be kept on the payroll until he has an acceptable new job. Individuals should not receive severance pay, but the union should receive a negotiated amount of money for each man who is without a new job at the end of the transition period. This money is to be used specifically to assist the unemployed members.

Recommendation number two is simple and direct. Human decency requires that pensions be both vested and portable. This means that a man can carry his pension plan with him to his next place of employment and his new employer will pay the appropriate amount into the employee's plan, presumably with an insurance company, not into some ill defined company account. University and other teachers already have such a plan in the Teacher's Insurance and Annuity Association. Old Age and Survivor's Insurance (Social Security) fits this model but the amounts are insufficient. We venture to predict that pensions will not become vested and portable until union leaders bargain to this end.

Recommendation number three is that unions should insist on unemployed members continuing with full privileges but without dues. In fact, it is our view that a union should provide special services for its unemployed members. Under number one we have suggested a way to finance these services at least in part.

Fourth, union members should be advised that while seniority may be an advantage in times of layoff, at a closing staying to the bitter end is a

disadvantage because by the time the most senior people are terminated the best jobs in the community are gone.

Our fifth recommendation is that until such time as there is universal health insurance coverage in this country, health insurance benefits should be an automatic part of unemployment compensation. There has been some concern about the cost of this but we do not believe it would be excessive even though those who remain unemployed the longest are apt to be those who were the sickest at the beginning. These people were in the insured pool to begin with. It is their persistence in the unemployed group that makes the price appear to rise. Actually, equivalent money is being saved in the employment pool. We have shown that there is some rise in illness associated with termination, but although the sample is a long way from large enough to estimate the added health care costs, with any reasonable degree of reliability, we do not believe them to be large.

Our sixth and final recommendation is that families, doctors, clergy and social agency employees of all sorts must recognize that job termination is a major life crisis and that social support, that is, emotional support, esteem support, and network support, goes a long way towards moderating the personal strains that result from such crises (Cobb, 1976). Whether Erikson (1976) would include this as a "disaster" or not, there is a major loss of community and of social support involved in a plant closing. It is not possible to replace this all at once, but it is possible for caring people to at least compensate in part by providing emotional and esteem support until new networks can be built.

In closing this report, we must remind ourselves and the reader that change is part of our way of life, and that we would not want to legislate against change. However, we believe that changes can be brought about in more humane ways if we use the full extent of available knowledge.

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APPENDIX A

Appendix A

STUDY OF PEOPLE CHANGING JOBS

A General Outline of the Interview Procedure

GENERALIZED OUTLINE OF EACH TYPE OF INTERVIEW (Sections of each visit are listed in the order in which they are administered.)

A. Initial contact (telephone call or home visit - may be combined with Initial Visit) (5-60 minutes)

1. Introduction
2. Explanation of study
3. Plea for participation

B. INITIAL VISIT (1-1½ hours)

1. Demographic data on R, wife and family, health history;

Appendix B (Section B_1)

2. California Psychological Inventory Fx Scale and Achievement Risk Preference Scale;

Appendix B (Section B_2 and B_3)

3. Interviewer evaluations - done after interview;

Appendix B (Section B_4)

C. HEALTH VISIT is the first part of each Visit Round (Health Visit lasts 3/4 - 2 hours, average = 1 hour.)

1.a. R asked to void for timed urine specimen and to drink liquid
b. Body weight taken
c. Pulse
d. Blood pressure

Appendix B (Section B_5, Items 1-8)

e. Record R's eating, drinking and smoking behavior before the visit;

Appendix B (Section B_5, Items 9-13)

2. Health data and arthritis screening;

Appendix B (Section B_5, Items 14-37)

3. Daily Health Record explained and given to R, who will fill it out for the 2 weeks between the Health and Self-Identity Visits;

Appendix B (Section B_6)

4. Affective states measure - card sort (self-administered);

Appendix B (Section B_7)

5. Employment, job-seeking and economic state data;

Appendix B (Section B_8)

6. Social activities data - optionally taken here or at the Self-Identity Visit;

Appendix B (Section B_9)

7. Obtain blood and timed urine specimens, recheck and/or complete data on eating, drinking and smoking behavior, take final pulse and blood pressure;

See Appendix B (Section B_5, Items 9-13)

8. Interviewer evaluations - done after visit;

See Appendix B (Section B_4)

D. SELF-IDENTITY VISIT is the second part of each Visit Round (Self-Identity Visit lasts 3/4 - 1 hour.)

1. Health data - pick up Daily Health REcord from R and administer symptom checklist, take initial pulse and blood pressure;

Appendix B (Section B_{10})

2. 'I am' sentences, attitudes towards doctors, wife, environment (all self-administered);

Appendix B (Section B_{11})

3. Social activities data - if not taken at Health Visit (Some interviewers administer this first if taken at the Self-Identity Visit);

See Appendix B (Section B_9)

4. Subjective person-environment fit data;

Appendix B (Section B_{12})

5. Final pulse and blood pressure;

See Appendix B (Section B_{10})

6. Interviewer evaluations - done after visit;

See Appendix B (Section B_4)

E. TWELVE MONTH VISIT ROUND. This like the other visit rounds has the Health Visit, Daily Health Record and Self-Identity components. In addition it has:

1. Accuracy questions;

Appendix B (Section B_{13}, p. B_{13}-1)

2. Size of home questions;

Appendix B (Section B_{13}, p. B_{13}-2)

3. Comparison of old and new jobs and amount of life disturbance due to job loss, etc;

Appendix B (Section B_{13}, pp. B_{13}-3 to B_{13}-12)

4. Marlowe-Crowne Scale of Social Desireability, the Lazare, et al, Orality Scale, and the Ego-resilience, subtile scale of Block.

Appendix B (Section B_{14})

5. Retirement benefits data

Appendix B (Section B_{15})

6. Interviewer Evaluation;

Appendix B (Section B_{16})

F. TWENTY-FOUR MONTH VISIT ROUND. This like the other visit has the Health Visit, Daily Health Record and Self-Identity components. In addition it has:

1. Comparison of old and new jobs and amount of life disturbance due to job loss, etc. (See Appendix B, Section B_{13})
2. Marlowe-Crowne Scale of Social Desireability Klerman Orality Scale; (See Appendix B, Section B_{14})

If not previously obtained

G. Interviewer Case Summary

Appendix B (Section B_{17})

APPENDIX B

The University of Michigan
Survey Research Center
Project 327

A Study of People Changing Jobs

INITIAL VISIT

No. _____ Nurse: _____

Date: _____

Employment Status

- ☐ Original job
- ☐ Unemployed since _____
- ☐ Working part time since _____
- ☐ Reemployed since _____
- ☐ Other, explain _____

_____

_____

List all contacts and attempted contacts including all telephone calls.

Date	Type of contact and result

a1. HOW WOULD YOU RATE YOUR HEALTH?

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor

a2. DO YOU HAVE ANY ILLNESS OR DISABILITY AT THE PRESENT TIME? (If yes, describe the illness or illnesses, with dates, manifestations, and diagnoses).

a3. HAVE YOU EVER HAD ANY SERIOUS SICKNESS?

a4. HAVE YOU BEEN UNDER THE REGULAR CARE OF A DOCTOR OR A CLINIC AT ANY TIME IN THE PAST FIVE YEARS?

☐ Yes

☐ No

If Yes: WHAT FOR? _____

_____

_____

_____

WHAT DOCTOR OR CLINIC: _____

_____

If hospitalized, get a signed permission to request the record.

a5. HAVE YOU BEEN EXAMINED BY A DOCTOR JUST FOR A CHECKUP, WHEN YOU WERE NOT SICK, AT ANYTIME IN THE LAST FIVE YEARS?

☐ Yes

☐ No

If yes: HOW MANY TIMES IN THE LAST FIVE YEARS?_____

a6. HAVE YOU HAD YOUR TEETH CLEANED IN THE LAST FIVE YEARS?

☐ Yes

☐ No

If yes: HOW MANY TIMES IN THE LAST FIVE YEARS?_____

a7. WERE YOU EVER TOLD YOU HAD AN ENLARGED HEART?

☐ Yes

☐ No

a8. WERE YOU EVER TOLD YOU HAD A CORONARY HEART ATTACK?

☐ Yes

☐ No

a9. HAVE YOU EVER BEEN TOLD AS A RESULT OF AN EXAMINATION, THAT YOU HAD HIGH BLOOD PRESSURE (OR HYPERTENSION)?

☐ Yes

☐ No

a10. HAVE YOU EVER HAD KIDNEY DISEASE? (Nephritis or Nephrosis)

☐ Yes

☐ No

a11. CAN YOU GO UP A FLIGHT OF STAIRS WITHOUT GETTING SHORT OF BREATH?

☐ Yes

☐ No

a12. HAVE YOU EVER HAD ANY OF THE FOLLOWING?

	Yes	No	DK
GALL BLADDER TROUBLE	☐	☐	☐
GASSY INDIGESTION (bloating, stomach gas, sluggish stomach)	☐	☐	☐
HEART FAILURE	☐	☐	☐
GOITER	☐	☐	☐
OVERACTIVE THYROID, HYPERTHYROIDISM, TOXIC GOITER	☐	☐	☐
LOW THYROID FUNCTION, HYPOTHYROIDISM	☐	☐	☐
SUGAR DIABETES	☐	☐	☐
SINUS TROUBLE	☐	☐	☐
CHRONIC COUGH	☐	☐	☐
RHEUMATOID ARTHRITIS	☐	☐	☐

a13. HAVE YOU EVER HAD AN ULCER?

☐ Yes

☐ No

If yes: (a) WAS THIS ULCER PROVEN BY AN X-RAY OR AN OPERATION?

☐ X-ray

☐ Operation

☐ Both

☐ No, or don't know

WHEN WAS THIS PROVEN? _____

(b) WAS IT IN THE STOMACH, DUODENUM, OR WHERE?

☐ Stomach

☐ Duodenum

☐ Don't know

(c) HAVE YOU EVER BEEN UNABLE TO WORK BECAUSE OF THE ULCER?

☐ Yes

☐ No

(d) HAVE YOU EVER BEEN IN A HOSPITAL FOR TREATMENT OF THE ULCER?

☐ Yes

☐ No

(e) HAVE YOU EVER HAD ANY BLEEDING FROM THIS ULCER?

☐ Yes

☐ No

Comments: _____

_____

_____

_____

a14. HOW MUCH DO YOU WEIGH?

_____

a15. HOW MUCH DID YOU WEIGH AT AGE 21?

_____

a16. WHAT IS THE MOST YOU EVER WEIGHED?

_____

a17. Height (Measure it in inches)

_____

b1. Birth place: _____

b2. Birthdate: _____
month year

b3. Number of years of education: _____
(high school degree = 12, college degree = 16, etc.)

b4. Wife --- a) year of birth _____

b) number of years of education _____

c) percent of time employed in last ten years _____

d) occupation(s) _____

_____

_____

_____

_____

b5. Year married _____

b6. Number of previous marriages _____

If previously married, check as applicable:

Widowed _____

Divorced _____

b7. Number of children _____

b8. Year moved to present dwelling _____

b9. Owned _____, Mortgaged _____, Rented _____

b10. WHO LIVES HERE IN YOUR HOME WITH YOU?

Initials or first name	Approx. Age	Relationship to R	Occupation

Is there anyone else partially or fully dependent on him financially? List relationship.

HOW MANY ROOMS DO YOU HAVE IN YOUR HOME?_____ HOW MANY BEDROOMS?_____

DO YOU FEEL YOUR HOME IS OVERCROWDED? ☐ Yes ☐ No

If yes, Probe: In what way? _____

_____

_____

Nurse's comment: ☐ I feel the living space in this home is adequate.

☐ I feel the living space in this home is inadequate.

because:_____

_____

_____

b11.(a) Present Company _____

(b) WHAT DEPARTMENT DO YOU WORK IN?_____

WHAT DOES THIS DEPARTMENT DO?_____

(c) WHAT IS YOUR JOB?_____

WHAT EXACTLY DO YOU DO?_____

(d) WHAT IS YOUR PRESENT HOURLY PAY RATE?_____

(e) WHAT SHIFT DO YOU WORK?_____

(f) HOW LONG HAVE YOU WORKED FOR THIS COMPANY?_____
(If R answers 10 years or more, go on to next page, question # 12)

If R worked here for less than 10 years, record job history for last 10 years.

(g) BEFORE YOU CAME TO_____, WHERE DID YOU WORK?_____
WHAT DID THIS COMPANY DO?
WHAT TYPE OF WORK DID YOU DO THERE?
HOW LONG DID YOU WORK THERE?

Type of work	Type of company and/or product	Duration of job (give dates)

(h) NOW WE WOULD LIKE TO KNOW SOMETHING ABOUT ANY EXPERIENCE YOU MIGHT HAVE HAD WITH UNEMPLOYMENT DURING THE LAST TEN YEARS.

WHEN YOU LEFT ONE COMPANY AND WENT TO WORK FOR A DIFFERENT COMPANY, WERE YOU UNEMPLOYED FOR A PERIOD OF TIME? ☐ Yes ☐ No

If yes, record answers to following in chart below.

(i) HOW LONG WERE YOU OUT OF WORK?
FOR EACH TIME YOU WERE UNEMPLOYED WHEN YOU WERE CHANGING COMPANIES, HOW DIFFICULT WAS IT TO LIVE ON YOUR TOTAL FAMILY INCOME?

Duration of Unemployment (give dates)	How difficult to live on income? (check one) O.K.	possible	Barely get by	A losing proposition	Impossible

(questions 11-13 revised May,'67)

b12. BESIDES THE WORK YOU HAVE JUST TOLD ME ABOUT, DO YOU HAVE OTHER WORK SKILLS OR JOB EXPERIENCE?

b13. NOW WE WOULD LIKE TO KNOW SOMETHING ABOUT ANY EXPERIENCE YOU MIGHT HAVE HAD IN THE LAST TEN YEARS WITH LAYOFFS WHICH LASTED THREE MONTHS OR MORE. THIS WOULD BE WHEN YOU WENT BACK TO WORK AT THE SAME COMPANY. WE'D LIKE TO KNOW HOW LONG EACH LAYOFF LASTED, WHETHER OR NOT YOU FOUND A TEMPORARY JOB, AND HOW DIFFICULT IT WAS FOR YOU TO LIVE ON YOUR TOTAL FAMILY INCOME DURING THAT PERIOD.

Year laid off	Duration in number of months	Did you look for another job? (yes or no)	If you held a temporary job, about how much of the time during the layoff did you work?	How difficult was it for you to live on your total family income? 1. OK 2. Possible 3. Barely get by 4. A losing proposition 5. Impossible

b15. IF YOU HAD ENOUGH MONEY SO YOU DIDN'T HAVE TO MAKE A LIVING, WOULD YOU WORK ANYWAY?_____

Father:

1. Year of birth _____ 2. Place of birth _____

3. Living_____or dead_____If dead,year of death _____

4. Number of years of education_____

5. Occupation(s) (give title or position)_____

_____

6. What does (did) he do? _____

What kind of company (business) does (did) he work for? (Indicate if father was self employed) _____

_____

7. How does your job compare with your father's job? (Is it better or worse?)

Better ☐ Same ☐ Worse ☐

8. In what way?_____

_____

Mother:

9. Year of birth_____ 10. Place of birth_____

11. Living_____or dead_____If dead, year of death_____

12. Number of years of education_____

13. Was your mother employed outside the home while you were growing up? (i.e. up to time you were 16) Yes _____ No_____

14. If yes (explain full time, part time positions, etc.) what does (did) she do?_____

_____

What kind of company (business) does (did) she work for?

_____

Parents: Give year where applicable. Enter a dash if not applicable.

15. Marriage _____ 16. Separation_____17. Divorce_____

18. At what age did you leave home?_____

19. Separations before age sixteen. (Describe with age and duration)

_____

_____

20. Sibship: Write in all members in birth order including R; circle R's name.

First name	Sex	Age in relation to R	If dead, approx. age at death	Note here if half related or adopted	Check if living near

Probe: IS THAT ALL THE BROTHERS AND SISTERS YOU'VE EVER HAD?

21. WHAT OTHER RELATIVES DO YOU AND YOUR WIFE HAVE NEARBY? (i.e. within 50 miles) List in relationship

22. HOW MANY OF YOUR RELATIVES DO YOU SEE WITHIN A YEAR?

Now administer Section e, C.P.I.

No _____

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This part of the questionnaire consists of pairs of statements which describe people. Your job is to choose that statement which describes you better. Suppose one of the choices were:

A. I like to watch football games.
B. I like to watch baseball games.

You would choose the statement which is more true of you. If you like football, but not baseball, you would circle "A". If you like baseball and not football, you would circle "B". In some cases, you may find that both statements describe you. Then the choice will be more difficult, but you should choose the one that describes you a little better. In other cases, you may find that neither statement describes you too well. Still, one probably applies to you better than the other one. In the above case, if you don't like to watch either football or baseball, you still probably like one a little better than the other one, and you would choose that one.

Some statements may describe situations in which you have never been and probably will never face in the future. In that case, try to imagine how you would act or how you would feel and then choose the statement that would describe you better.

For each pair of questions, circle either A or B.

1. A. If I were a relief pitcher, I would like to be called into the game when my team was losing 6 to 2.

   B. If I were a relief pitcher, I would like to be called into the game when the score was tied.

2. A. I like working on a fairly hard problem which I have a fifty-fifty chance of solving.
   B. I like working on a very hard problem which I have a small chance of solving.

3. A. I become bored with my job once I am sure I can do it.
   B. I enjoy a job most once I am sure I can do it.

4. A. If I were a pinch hitter, I'd like to come to bat when my team was losing 5 to 2.
   B. If I were a pinch hitter, I'd like to come to bat when the score was tied.

5. A. I like a game where there are a lot of other players and the winner gets a big prize.
   B. I like a game where there are a few other players and the winner gets a small, modest prize.

6. A. If I were a pitcher, I would want to be called out of the game when the score was tied.
   B. If I were a pitcher, I would want to be called out of the game when my team was winning 8 to 3.

Note that the procedure is now different.

For each of the following statements, put a "1" beside your first choice, a "2" beside your second choice, and a "3" beside your last choice. Note that the situations described below are perhaps rather improbable and unlikely. It doesn't matter. Just tell us how much you would prefer each choice.

7. If I were to take the job after another man, I would prefer to follow:

   _____A. An outstanding man.
   _____B. A man generally considered to be below average in the company or the union.
   _____C. A man who was as capable as the average man in that kind of a job.

8. If I were to enter a company training program, I would prefer to enter a program in which:

   _____A. After a year, half of the new men get jobs at moderate pay and others are not hired.
   _____B. After a year, very small numbers of the new men get jobs at high pay and the others are not hired.
   _____C. After a year, most of the new men get jobs at low pay and the rest are not hired.

9. If I were a salesman, I would prefer to work on:

   _____A. Straight salary.
   _____B. Straight commission.
   _____C. Salary plus commission

10. If I were a car mechanic, I would prefer to work on cars which:

   _____A. Were very difficult to fix: success would be rare, but would be considered brilliant work.
   _____B. Were quite easy to fix.
   _____C. Were sort of difficult to fix: chances of success would be about fifty-fifty.

11. If I were a Union official negotiating with the Company, I would want to work on an issue:

_____A. Where the chances of arriving at a favorable agreement were quite good.

_____B. On which the Union and the Company strongly disagreed; a favorable agreement would be very difficult to achieve.

_____C. Where the chances of arriving at a favorable agreement after some period of negotiation were fairly good.

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No_____

In this section, we have listed a few more things that tell the way some people feel about life. Please read each sentence in the list below, and see how true it is of the way you feel about things. Then go to the four boxes on the right, and put a check in the box that best applies to you.

If you feel it is VERY TRUE, check the 1st box.

FAIRLY TRUE, check the 2nd box.

NOT VERY TRUE, check the 3rd box.

If you feel it is NOT TRUE AT ALL, check the 4th box.

		Very true	Fairly true	Not very true	Not true at all
1.	I often wish people would be more definite about things.	☐	☐	☐	☐
2.	It is annoying to listen to a person who cannot seem to make up his mind as to what he really believes.	☐	☐	☐	☐
3.	I like a well-ordered life with regular hours.	☐	☐	☐	☐
4.	It is hard for me to sympathize with someone who is always doubting and unsure about things	☐	☐	☐	☐
5.	I often start things I never finish.	☐	☐	☐	☐
6.	Our thinking would be a lot better off if we would just forget about words like "probably," "approximately," and "perhaps".	☐	☐	☐	☐
7.	I never make judgments about people until I am sure of the facts.	☐	☐	☐	☐
8.	A strong person will be able to make up his mind even on the most difficult questions.	☐	☐	☐	☐

	Very true	Fairly true	Not very true	Not true at all
9. For most questions, there is just one right answer, once a person is able to get all the facts.	☐	☐	☐	☐
10. I like to have a place for everything and everything in its place.	☐	☐	☐	☐
11. I don't like to work on a problem unless there is the possibility of coming out with a clear-cut answer.	☐	☐	☐	☐
12. It bothers me when something unexpected interrupts my daily routine.	☐	☐	☐	☐
13. Most of the arguments or quarrels I get into are over matters of principle.	☐	☐	☐	☐
14. I am known as a hard and steady worker.	☐	☐	☐	☐
15. I don t like things to be uncertain and unpredictable.	☐	☐	☐	☐
16. Once I have my mind made up I seldom change it.	☐	☐	☐	☐
17. I think I am stricter about right and wrong than most people.	☐	☐	☐	☐
18. I am in favor of a very strict enforcement of all laws, no matter what the consequences.	☐	☐	☐	☐
19. I always see to it that my work is carefully planned and organized.	☐	☐	☐	☐
20. The trouble with many people is that they don't take things seriously enough.	☐	☐	☐	☐
21. I set a high standard for myself and I feel others should do the same.	☐	☐	☐	☐
22. People who seem unsure and uncertain about things make me feel uncomfortable.	☐	☐	☐	☐

23. Of all the people who are supposed to help others, doctors and hospital workers are among the coldest and most inconsiderate.

VERY UNTRUE	_____
SOMEWHAT UNTRUE	_____
NEITHER UNTRUE NOR TRUE	_____
SOMEWHAT TRUE	_____
VERY TRUE	_____

24. How do you usually feel when you have to go to see a doctor?

VERY RELAXED	_____
RELAXED	_____
NEITHER RELAXED NOR TENSE	_____
TENSE	_____
VERY TENSE	_____

No._____

Section S
NURSE EVALUATION SECTION

CONFIDENCE LEVEL
(0; 1,2,3)

S1. ANGER/IRRITATION: _____

_____not irritable
_____little touchy
_____grouchy
_____annoyed
_____explosive

S2. ANXIETY: _____

_____unconcerned
_____concerned
_____worried
_____somewhat anxious
_____very anxious

S3. SADNESS: _____

_____"happy"
_____serious, subdued
_____somewhat unhappy
_____sad
_____close to tears, grief-stricken

S4. SELF-ESTEEM: _____

_____confident
_____somewhat self-critical
_____"inadequate"
_____highly self-critical
_____"total failure"

S5. MENTAL AROUSAL (NOT a measure of intelligence) _____

_____unresponsive, affectless
_____slow to respond, subdued
_____reasonably responsive
_____alert, quick to respond
_____highly responsive, excited

CROSS REFERENCE WHENEVER POSSIBLE

S6. How were you received at the door? _____

S7. What reactions did R. give to the study? _____

S8. To what extent does this man seem to you to reveal himself in conversation with you?

- ☐ He fully and freely reveals his feelings, weaknesses, and failures.
- ☐ He reveals himself more than the average working class man.
- ☐ He reveals himself about the same as the average working class man.
- ☐ He hides more of his feelings, weaknesses, and failures than the average working class man.
- ☐ He does not reveal his feeling, nor discuss any of his weaknesses and failures.

Confidence level: _____

Comments: _____

S9. Changes in the martial relationship	YES (see below)	NO
a. role relations	☐	☐
b. degree of mutual emotional support	☐	☐
c. degree of hostility and denigration	☐	☐
d. dominance and submissiveness	☐	☐
e. degree of trust	☐	☐

Comments: _____

S10. Important observations not elsewhere noted: _____

S11. Striking changes since last visit: _____

Define the environmental threat

a. How has this man attempted to reduce this threat:

Result:

b. This behavior was clearly inappropriate: YES ☐ NO ☐ Confidence level _____

c. There is some discrepancy between his perception of reality and mine:

YES ☐ NO ☐ Confidence level _____

Describe:

d. He seems to have some inappropriate feelings: YES ☐ NO ☐ Confidence level _____

Describe:

Define the environmental threat

a. How has this man attempted to reduce this threat:

Result:

b. This behavior was clearly inappropriate: YES ☐ NO ☐ Confidence level _____

c. There is some discrepancy between his perception of reality and mine:

YES ☐ NO ☐ Confidence level _____

Describe:

d. He seems to have some inappropriate feelings: YES ☐ NO ☐ Confidence level _____

Describe:

Define the environmental threat

a. How has this man attempted to reduce this threat:

Result:

b. This behavior was clearly inappropriate: YES ☐ NO ☐ Confidence level _____

c There is some discrepancy between his perception of reality and mine:

YES ☐ NO ☐ Confidence level _____

Describe:

d. He seems to have some inappropriate feelings: YES ☐ NO ☐ Confidence level _____

Describe:

University of Michigan
Survey Research Center
Project 327

A Study of People Changing Jobs

HEALTH VISIT

No. / / / / / Nurse: _____

Date of interview _____

Employment Status

- ☐ Original job
- ☐ Unemployed since _____
- ☐ Working part time since _____
- ☐ Reemployed since _____
- ☐ Other, explain _____

_____

_____

List all contacts and attempted contacts including all telephone calls.

Date	Type of contact and result

1. Body weight_____

	Initial	Final
2. Pulse rate		
3. Systolic blood pressure		
4. Diastolic muffling		
5. Diastolic disappearance		

6. Time voided_____ Go to Page 2, Question 14

7. Time urine specimen collected_____

8. Time blood sample taken_____

9. THINKING NOW ABOUT THE LAST THREE HOURS, HAVE YOU HAD ANYTHING TO EAT OR DRINK? YES ☐ NO ☐

If yes: WHAT DID YOU HAVE?_____

_____

_____

WHEN DID YOU FINISH? _____

WAS THERE ANYTHING ELSE? YES ☐ NO ☐

If yes: WHAT ELSE?_____

_____

WHEN DID YOU FINISH?_____

10. HOW MUCH ARE YOU SMOKING THESE DAYS?

Cigarettes?_____ per day

Cigars?_____ per day

Pipes?_____ per day

If R. smokes:

11. WHEN DID YOU FINISH YOUR LAST SMOKE?_____

12-13. Comments:

14. IN THE LAST THREE MONTHS, HAVE YOU HAD ANY ILLNESS OR INJURY THAT KEPT YOU FROM YOUR USUAL ACTIVITIES FOR MORE THAN A DAY?

Yes _____ No _____ Go to Q. 15

If Yes: Describe, giving dates, nature or injury, physician in attendance, etc.

_____

_____

_____

_____

_____

_____

_____

_____

15. IN THESE LAST THREE MONTHS, HAVE YOU BEEN TO A DOCTOR FOR ANY REASON?

Yes _____ No _____ Go to Q. 16

If Yes: Get details, number of visits, what for, etc.

_____

_____

_____

_____

_____

_____

_____

_____

_____

16. IN THE LAST THREE MONTHS, HAVE YOU HAD TO STAY IN THE HOSPITAL OVERNIGHT?

Yes _____ No _____ Go to Q. 17

If Yes: a) What were the dates? From _____ to _____

b) Probe: What hospital? _____

c) Probe: What were you in for? _____

_____

d) Probe: Was an operation performed? Yes ___ No ___

If Yes: What was the operation? _____

_____

_____

e) Probe: How long had you been needing the operation?

_____

f) Comments _____

_____

_____

_____

Get signed permission slip.

17. HAVE YOU HAD ANY XRAYS IN THE LAST THREE MONTHS?

Yes _____ No _____ Go to Q. 18

If Yes: What part of you was xrayed? Date?

_____

_____

_____

_____

_____

18. ARE YOU TAKING ANY MEDICINES REGULARLY? List: (If none, enter none)

	Name	Taken for
1.		
2.		
3.		
4.		
5.		

19. DO YOU TAKE ANYTHING TO HELP YOU SLEEP? Yes ___ No ___ Go to Q. 20

If Yes: How often? _____

20. HAVE YOU TAKEN ANY (of those or any other) MEDICINES IN THE LAST 24 HOURS?

(Probe for ASPIRIN, TRANQUILIZERS, and other simple remedies)

	Name	Taken for
1.		
2.		
3.		
4.		

If unknown medicine, get signed permission slip.

21. If new illnesses are revealed by these medicines, enter the full information here.

Comments _____

22. HOW IS YOUR APPETITE? Excellent, Good, Fair, Poor

Excellent _____
Good _____
Fair _____
Poor _____

23. DURING THE LAST FOUR WEEKS, DID YOU HAVE ANY TROUBLE WITH YOUR DIGESTION?

Yes_____ No_____

If Yes: WHAT SORT OF TROUBLE? Give diagnosis if known. Describe the nature of the trouble. Inquire specifically about ulcers.

24. DURING THE LAST FOUR WEEKS, DID YOU HAVE ANY PAIN IN YOUR STOMACH?

Yes _____ No _____ (Go to Q. 25)

If Yes: a) DID THESE PAINS COME ON BEFORE EATING, WHILE EATING, RIGHT AFTER EATING, A COUPLE OF HOURS AFTER EATING, OR WHEN?

Before eating	_____
While eating	_____
Right after eating	_____
Two or three hours after eating	_____
Not associated with eating	_____

b) WAS THIS PAIN RELIEVED BY EATING, DRINKING MILK, BICARBONATE OF SODA, OR OTHER ANTACID OR BY ANYTHING ELSE?

Eating	_____
Drinking	_____
Bicarbonate of soda or other antacid	_____
anything else	_____
nothing	_____

c) DID THE STOMACH PAIN WAKE YOU UP OR KEEP YOU UP AT NIGHT?

Yes _____ No _____

d) DID YOU HAVE THIS PAIN YESTERDAY?

Yes _____ No _____

e) THINKING STILL ABOUT THIS LAST 28 DAYS, ON HOW MANY DAYS WOULD YOU THINK YOU HAD THIS PAIN FOR AT LEAST PART OF THE DAY?

_____days

f) WHAT DO YOU THINK THIS PAIN WAS DUE TO?

_____

_____

_____

Comments _____

_____

_____

_____

25. Arthritis or rheumatism, four weeks. Yes _____ No _____

26. Pain in joints. Yes _____ No _____

27. Pain in back. Yes _____ No _____

28. Swelling in any joints, not due to injury. Yes _____ No _____

29. Stiffness or aching on getting out of bed (Duration). _____

30. Observed Pain on Motion or Tenderness. Yes _____ No _____

31. Observed Swelling

	P	R	S	P	L	S
PIP						
MCP						
Wrists						
Elbows						
Knees						
Ankles						
Toes						

If fingers or toes enter the number swollen

32. Number of days of swelling past 4 weeks _____

33. Elbow nodules. Yes _____ No _____

If pain on Motion or Swelling

34. Number of aspirins per day for arthritis. _____

35. Number of days during the last 4 weeks on which aspirin was taken. _____

36. Comments _____

_____

_____

_____

_____

_____

_____

_____

F37. HAVE YOU HAD ANY TROUBLE WITH YOUR TEETH IN THE LAST THREE MONTHS?

- ☐ Yes
- ☐ No
- ☐ Inap., false teeth

If Yes: Describe under Comments and probe for:

No. of fillings last three months _____

No. of extractions last three months _____

Comments _____

_____

_____

_____

_____

_____

_____

Now explain (g) Daily Health Record and administer (h) Card Sort

CONFIDENTIAL: FOR STATISTICAL PURPOSES ONLY

EMPLOYMENT TERMINATION STUDY--DAILY HEALTH RECORD

The University of Michigan
Survey Research Center
Project 327

DAILY HEALTH RECORD INSTRUCTIONS

GENERAL REMINDERS: For each week there is a separate sheet. The nurse will enter the date and the days of the week. At the end of the week after you have made all of the entries, fold over the sheet. The next week's record sheet will now be on top. At the end of each, be sure that you have entered at the bottom of each page the names of any doctor seen and any hospital you have been in.

COL. 1- Was sick or did not feel as well as usual-- Include symptoms that are not troublesome as well as serious illnesses. For example, a cold with a runny nose should be included even if it does not bother you much.

COL. 2- Had an accident or injury or felt the effects of previous accident or injury-- Include minor accidents such as cuts, burns, sprains, etc.

COL. 3- Felt as well as usual. -Do not check if either Col. 1 or Col. 2 are checked.

COL. 4- Had to stay in hospital- Check only if you are admitted to a hospital.
-Don't forget to enter the name of the hospital at the bottom of the page.
-Enter visits to a hospital emergency room or clinic as visits to a doctor.

COL. 5- Had to stay in bed at home- Check if you stayed in bed because of sickness or injury at least half the day when you would ordinarily have been up.

COL. 6- Had to stay in house but not in bed- Check if you stayed in the house because of sickness or injury but did not have to stay in bed more than half the day.

COL. 7- Carried on usual activities--but not able to do as well as usual- Check if you carried on your usual activities but could not do them as well as usual because of sickness or injury.

COL. 8- Carried on usual activities--as well as usual- Check if you are well.
-Check if a sickness or injury is present that does not interfere with your usual activities.

COL. 9- Medicines
-Include home cures, patent medicines, aspirin, antacids, etc.

COL. 10- Doctor seen- Include hospital clinic or emergency room visits.
-Include visits to the dentist.
-If the doctor was just called and not actually seen, indicate this in Col. 12.

COL. 11-
(a) For each sickness that occurs, give:
(1)the name of the sickness if possible.
(2)a few of the symptoms and complaints that bothered you.
(3)the cause if one is known.
For example:
-"cold with runny nose, cough, sore throat"
-"pain in stomach due to gall bladder trouble"

(b) For each accident or injury give:
(1)the parts of the body hurt.
(2)the type of injury for each part.
(3)the place and nature of the accident.
For example:
-"broke my left arm and bruised my left hip due to fall on sidewalk"
-"cut my left hand paring potatoes in the kitchen"

(c) If any medicines at all including aspirins or laxatives were used, give:
(1)the reason for taking the medicine.
(2)the name of the medicine if known.
(3)write "prescription" if the name of the medicine is not known and a doctor prescribed it.

AT THE END OF THE TWO WEEK PERIOD THE NURSE WILL RETURN TO PICK THIS UP AND PERFORM THE REST OF YOUR HEALTH CHECK.

You should expect her at _____ on _____.

EMPLOYMENT TERMINATION STUDY-DAILY HEALTH RECORD

FOR (number) _____ Week beginning: _____

DAY	EACH DAY, check (X) any of these three columns which apply:			EACH DAY, check (X) the columns below which apply:					EACH DAY, check (X) in these columns if:		EACH DAY, if any columns except 3 and 9 have been checked, describe what the trouble was:
				Didn't carry on usual activities--had to:			Carried on usual activities--				
	Was sick had an ailment or did not feel as well as usual	Had an accident or injury or felt effects of previous accident or injury	Felt as well as usual	Stay in hospital	Stay in bed at home	Stay in the house but not in bed	But not able to do as well as usual	As well as usual	Any drugs or medicines were used	A doctor was seen or contacted	-For each sickness, write in what was wrong. If a doctor was seen, tell what he said the trouble was. -For each accident or injury, be sure to tell what parts of the body were hurt, how each part was hurt, and how and where the accident happened. -If any medicines were taken, tell what the medicines were and what it was taken for. If any illness stays the same for more than one day, write in "Same". (Use back of sheet if more room is needed)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
											- - - - - - - - - - - - - - - - - - - -
											- - - - - - - - - - - - - - - - - - - -
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											- - - - - - - - - - - - - - - - - - - -

If in hospital as a patient this week, give name and address of hospital:

Give the name and address of any doctor seen during this week:

B 6-3

B6-1

EMPLOYMENT TERMINATION STUDY-DAILY HEALTH RECORD

FOR (number) _____ Week beginning: _____

DAY	EACH DAY, check (X) any of these three columns which apply:			EACH DAY, check (X) the columns below which apply:					EACH DAY, check (X) in these columns if:		EACH DAY, if any columns except 3 and 9 have been checked, describe what the trouble was:
				Didn't carry on usual activities--had to:			Carried on usual activities--				
	Was sick had an ailment or did not feel as well as usual	Had an accident or injury or felt effects of previous accident or injury	Felt as well as usual	Stay in hospital	Stay in bed at home	Stay in the house but not in bed	But not able to do as well as usual	As well as usual	Any drugs or medicines were used	A doctor was seen or contacted	-For each sickness, write in what was wrong. If a doctor was seen, tell what he said the trouble was. -For each accident or injury, be sure to tell what parts of the body were hurt, how each part was hurt, and how and where the accident happened. -If any medicines were taken, tell what the medicines were and what it was taken for. If any illness stays the same for more than one day, write in "Same". (Use back of sheet if more room is needed)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)

If in hospital as a patient this week, give name and address of hospital:

Give the name and address of any doctor seen during this week:

ITEMS IN THE CARD SORT TEST

R*	112-20**	I am a useful guy to have around.
	113-26	I demand liberty and independence above everything.
	114-12	I often feel like using strong language.
	115-27	I often complain about my suffering and hardships.
	116-12	I sometimes feel like smashing things.
R	117-27	I am seldom discouraged when things go wrong.
	118-23	I am bothered by shortness of breath when I am not exercising or working hard.
	119-20	These days everything I try seems to go wrong.
	120-25	I would feel bad if I were to yell at my wife.
	121-26	I become stubborn and resistant when others attempt to force me to do something.
	122-28	I commonly wonder what hidden reason another person may have for doing something nice for me.
	123-23	I am bothered by my heart beating hard.
	124-27	When I have a problem I almost always seek help from others in dealing with it.
	125-20	I feel as though nothing I do is any good.
	126-12	Sometimes I feel like yelling at my wife.
	127-26	I argue against people who attempt to assert their authority over me.
	128-17	I often feel cold.
R	129-18	I often feel like smiling.
	130-28	I used to think that most people told the truth but now I know otherwise.
	131-12	I sometimes feel like losing my temper at my wife.
	132-22	No one is going to care much about what happens, when you get right down to it.
	133-24	I have trouble staying asleep.
	134-26	One of my goals in life is to be free of the control of others.

*Reversed

**Original index number

R	165-20	As a husband, I do a good job these days.
R	166-18	I enjoy myself frequently.
	167-10	I am easy to annoy these days.
	168-20	I am inclined to feel that I'm a failure.
R	169-17	I feel the future looks bright.
	135-13	I often feel jittery.
	136-22	In spite of what some people say, the lot of the average man is getting worse, not better.
	137-27	I like to have people to lean on when things are going badly for me.
	138-22	You sometimes can't help wondering whether life is worthwhile any more.
	139-17	I have thoughts of suicide.
	140-25	I would feel bad if I were to lose my temper at my wife.
	141-10	I can't help being a little rude to people I don't like.
	142-22	Most people don't really care what happens to the next fellow.
	143-10	I lose my temper easily.
R	144-10	I am usually patient with others.
	145-22	These days I get the feeling that I'm just not a part of things.
	146-10	If someone doesn't treat me right, it annoys me.
	147-10	It makes my blood boil to have somebody make fun of me.
	148-21	Almost every week I see someone I dislike.
	149-10	I am irritated a great deal more than people are aware of.
	150-24	I have trouble falling asleep.
	151-10	Sometimes people bother me just by being around.
	152-22	These days a person doesn't really know whom he can depend on.
R	153-21	I don't know any people that I downright hate.
	154-10	I sometimes carry a chip on my shoulder.
	155-21	Although I don't show it, I am sometimes eaten up with jealousy.
	156-10	Even unimportant things sometimes irritate me.
R	157-23	I feel healthy enough to carry out the things that I would like to do.
	158-10	I often feel like a powder keg ready to explode.
	159-23	I sometimes have the feeling that I might have a nervous breakdown.

	160-23	I am bothered by dizzy spells.
	161-10	Lately, I have been kind of grouchy.
	162-20	I sometimes feel that my life is not very useful.
	163-23	My hands sometimes sweat so that they feel damp and clammy.
	164-10	I often feel a little irritated or annoyed about things.
	170-21	I am likely to hold a grudge.
	171-19	I feel unwanted.
	172-21	When I look back on what's happened to me, I feel resentful.
R	173-17	When I make plans ahead, I usually get to carry out things the way I expected.
	174-13	I am fidgety much of the time.
	175-21	I don't seem to get what is coming to me.
	176-13	I am worried.
	177-21	I feel I get a raw deal out of life.
	178-14	People ask too much of me.
	179-12	I often feel like being a little rude to my wife.
	180-23	For some reason I seem to have lost interest in sex.
	212-19	I feel lonesome.
	213-21	If I let people see the way I feel, I'd be considered a hard person to get along with.
	214-21	Other people always seem to get the breaks.
	215-15	I feel bad about my mistakes.
	216-17	Things seem hopeless.
	217-25	I would feel bad if I picked a fight or argued with my wife.
	218-17	I often feel bored.
R	219-19	These days my wife really helps out; she doesn't let me down.
	220-17	I feel blue.
	221-11	I am often a little rude to my wife.
R	222-13	These days I am pretty calm.
	223-13	I often have a pain in my neck or back at the end of the day.
R	224-16	I am good at remembering things.
	225-13	I feel nervous.
	226-17	I feel low in spirits.
	227-11	Occasionally I pick a fight or argue with my wife.

R	228-16	I am usually alert.
	229-13	I feel anxious.
	230-17	I would be better off dead.
	231-22	It is hardly fair to bring a child into the world the way things look now.
	232-12	Occasionally I feel like picking a fight or arguing with my wife.
R	233-20	When I do a job, I do it well.
R	234-19	I feel loved.
	235-15	I blame myself when things go wrong.
	236-14	I feel burdened with responsibility.
	237-15	When I do wrong my conscience punishes me severely.
	238-11	Sometimes I yell at my wife.
	239-14	I have more troubles than I can bear.
	240-19	I feel no one really cares much about what happens to me.
	241-15	I often do things that I feel guilty about afterwards.
	242-18	I feel sad.
	243-16	I have a hard time making up my mind.
	244-25	I would feel bad if I were a little rude to my wife.
	245-17	I am bothered by noise.
	246-28	I feel that others are laughing at me.
	247-26	I go my own way regardless of the opinions of others.
	248-27	I usually tell my friends about my difficulties and misfortunes.
	249-11	Sometimes I lose my temper at my wife.
	250-16	I feel confused.
	251-15	I do things that make me feel remorseful afterwards.
	252-17	I feel depressed.
R	253-13	These days I am quite relaxed.
	254-18	I feel unhappy most of the time.
	255-13	I often feel tense.
R	256-16	I am a quick thinker.

PROBES

HAVE YOU OR YOUR WIFE HAD ANY CHANGE IN:

1. PLACE OF WORK? (include change within company as well as change of companies)

   IF YES:
   1. WHAT DOES THE COMPANY MANUFACTURE (DO)?
      or
      WHAT KIND OF BUSINESS IS THAT?
   2. Get date of change as accurately as R can remember.

2. TYPE OF WORK?

   IF YES:
   1. WHAT IS THE TITLE OF YOUR JOB?
   2. WHAT EXACTLY DO YOU DO?
   3. Get date of change as accurately as R can remember.

3. AMOUNT OF WORK?

   If R has worked more or less than a full time work week at any time since the last visit, note as accurately as R can remember:

   1. Number of hours per week (estimate within 5-10 hours).
   2. Dates
   3. Whether over 45 hours is because of overtime or moonlighting

4. AMOUNT OF PAY?

   IF YES:
   1. Record hourly pay rate.
      a. If income has increased because of extra work, but hourly pay is the same, indicate.
      b. If, for some reason, you are reluctant to ask for hourly pay rate, describe increase or decrease in actual amount (or as close to actual amount as R can describe).
   2. Use weekly or monthly figures only when hourly rate inappropriately describes R's income. (If you must use this figure for an R who is on an hourly rate, describe as well as possible the number of hours that a weekly or monthly figure represents.)

5. SHIFT?

   IF YES:
   1. Get date of change as accurately as R can remember.

6. OTHER

I1. Ask the respondent about the present employment status of himself and his wife.

	Husband	Wife
a) Moonlighting	____	____
b) Working over time	____	____
c) Working full time	____	____
d) Working part time	____	____
e) Not working at all	____	____

I2. HAVE YOU OR YOUR WIFE HAD ANY CHANGES IN EMPLOYMENT IN THE LAST THREE MONTHS, i.e. CHANGE IN PLACE OF WORK, TYPE OF WORK, AMOUNT OF WORK, AND PAY?

	YES	NO
Husband	☐	☐
Wife	☐	☐

If yes for either one, please describe the nature of the change.

If employed full time or more, begin here. If employed less than full time, skip to next page, question I4.

I3. NOW PLEASE TELL ME ABOUT YOUR JOB. HOW SATISFIED ARE YOU WITH THE FOLLOWING: (Hand R Card)

	Very Satisfied	Partly Satisfied	Neither	Partly Disatisfied	Very Disatisfied
a. THE JOB AS A WHOLE					
b. THE PAY					
c. THE MEN YOU WORK WITH					
d. THE BOSS					
e. THE TYPE OF WORK					
f. YOUR CHANCES OF PROMOTION					
g. THE WAY YOU USE YOUR SKILLS					

Comments _____

_____

_____

_____

_____

_____

_____

VERY SATISFIED

PARTLY SATISFIED

NEITHER SATISFIED NOR DISATISFIED

PARTLY DISATISFIED

VERY DISATISFIED

Job Seeking Behavior

I4. HAVE YOU DONE ANY JOB HUNTING IN THE LAST THREE MONTHS?

☐ Yes

☐ No Go to p. 16, Section J.

I5. NOW WE WOULD LIKE TO KNOW A LITTLE MORE ABOUT HOW YOU ARE GOING (WENT) ABOUT FINDING A JOB. WHAT DO (DID) YOU DO?

Use the following probes to complete the information:

a. Probe: Are the ads helpful?

Yes _____ No _____

If Yes: What do you do about the ads?

_____

_____

_____

_____

Probe: What happened?

_____

_____

_____

_____

If No: Why not?

_____

_____

_____

_____

b. Probe: Have you gone to any employment agencies?

Yes _____ No _____

If Yes: What happened?

_____

_____

_____

_____

If No: Why not?

_____

_____

c. Probe: Have you asked friends?

Yes _____ No _____

What about relatives?

Yes _____ No _____

If Yes: What happened?

_____

_____

_____

d. Probe: Have you gone to anyone else for advice and help?

Yes _____ No _____

If Yes: To whom have you gone?

_____

_____

_____

Probe: Did it help in any way?

Yes _____ No _____

Probe: How is that?

_____

_____

_____

e. Probe: Are there any other ways in which you have tried to find a job?

Yes _____ No _____

If Yes: What did you try?

_____

_____

_____

Probe: What happened?

_____

_____

_____

I6. HOW MANY HOURS A WEEK DO (DID) YOU SPEND TRYING TO FIND A JOB?

Number of hours _____

Ask only of those not now employed. If employed, turn to p. 16, Section J.

I7. HOW SOON DO YOU EXPECT TO FIND ANOTHER JOB?

_____

Probe: Why do you say that? How do you mean?

_____

_____

_____

_____

_____

I8. WHO DO YOU THINK IS TO BE BLAMED FOR THE FACT THAT YOU ARE NOT WORKING RIGHT NOW? WE WOULD LIKE TO KNOW HOW MUCH YOU THINK EACH OF THE FOLLOWING IS RESPONSIBLE FOR YOUR UNEMPLOYMENT. (Hand R. Card)
see p. 16

	Not at all Responsible	Slightly Responsible	Somewhat Responsible	Quite a bit Responsible	Completely Responsible
The business situation	_____	_____	_____	_____	_____
Management of the Company	_____	_____	_____	_____	_____
You Yourself	_____	_____	_____	_____	_____
The Union	_____	_____	_____	_____	_____
The Government	_____	_____	_____	_____	_____
Automation	_____	_____	_____	_____	_____

Probe: (if "you yourself" is checked for any answer other than "not at all responsible"):

How do you think you yourself are responsible for your unemployment?

_____

_____

_____

I9. WHOM DOES YOUR WIFE BLAME FOR YOUR UNEMPLOYMENT?

_____

_____

_____

I10. DO YOU THINK OTHERS THINK LESS WELL OF SOMEONE OR LOOK DOWN ON SOMEONE WHO HAS LOST HIS JOB?

_____ Yes, very much so
_____ Yes, somewhat
_____ Yes, a little bit
_____ Probably not
_____ No, not at all

J1. HOW DIFFICULT IS IT FOR YOU AND YOUR FAMILY TO LIVE ON YOUR PRESENT TOTAL FAMILY INCOME?

1. O.K. _____
2. Possible _____
3. Barely get by _____
4. A losing proposition _____
5. Impossible _____

J2. HOW DOES YOUR PRESENT TOTAL FAMILY INCOME COMPARE WITH THAT OF MOST OF YOUR FRIENDS AND NEIGHBORS (the people you associate with)?

1. A good deal less _____
2. A little less _____
3. About the same _____
4. A little more _____
5. A good deal more _____

Comments _____

_____

_____

_____

J3. HOW MUCH WOULD YOU NEED PER WEEK TO LIVE WITHOUT CONSTANT MONEY WORRIES?
$_____PER WEEK.

Comments _____

_____

_____

_____

NOT AT ALL RESPONSIBLE

SLIGHTLY RESPONSIBLE

SOMEWHAT RESPONSIBLE

QUITE A BIT RESPONSIBLE

COMPLETELY RESPONSIBLE

THINKING NOW ABOUT THE LAST THREE MONTHS:

J4. HOW DOES YOUR TOTAL FAMILY INCOME COMPARE WITH THREE MONTHS AGO?

More _____ Same _____ Less _____

J5. HOW DO YOUR FAMILY DEBTS COMPARE WITH THREE MONTHS AGO?

More _____ Same _____ Less _____

J6. HOW DO YOUR FAMILY SAVINGS COMPARE WITH THREE MONTHS AGO?

More _____ Same _____ Less _____

J7. HAVE YOU AND YOUR FAMILY HAD TO CUT EXPENSES IN ANY WAY DURING THE PAST THREE MONTHS?

Yes _____ No _____

If Yes: WHAT DID YOU CUT BACK ON?

_____

_____

_____

Comments_____

_____

_____

_____

J8. IN THE LAST THREE MONTHS HAVE YOU RECEIVED ANY LOANS?

a. Relatives: Yes _____ No _____

b. Friends: Yes _____ No _____

c. Other: Yes _____ No _____

Probe for social agency help if appropriate. Check "Other" and specify what source under Comments.

Comments _____

_____

_____

J9. DURING THE PAST THREE MONTHS HAVE YOU BOUGHT, SOLD, HAD TO GIVE UP, OR HAD TO REFINANCE ANY OF THE FOLLOWING THINGS?

	Bought	Sold	Gave up	Refinanced
a. Household Appliance				
b. Furniture				
c. Car				
d. House or other property				
e. Life Insurance				
f. Health Insurance				
g. Bonds or Stocks				
h. Telephone				
i. Anything else				

Comments _____

_____

_____

_____

_____

J10. CONSIDERING THE AMOUNT OF TRAINING, EDUCATION AND EXPERIENCE YOU HAVE, WHAT IS THE HOURLY PAY THAT YOU THINK YOU SHOULD BE EARNING RIGHT NOW?

$_____

Comments _____

_____

_____

_____

J11. HOW DO YOU FEEL ABOUT THE _____ COMPANY (NOW)? Insert name of company he worked for at the beginning of the study.

_____

_____

_____

_____

_____

Probe: Does (or Did) it deal fairly with its men?

_____

_____

_____

_____

_____

J12. DO YOU FEEL THE GOVERNMENT IS DOING ALL IT CAN FOR THE AVERAGE MAN?

Probe: How do you mean?

J13. WHAT ABOUT THE U.A.W.? DOES IT REALLY DO THE JOB IT SHOULD FOR ITS MEMBERS?

Probe: How is that?

Return to Page 1 and collect specimens and information about eating and smoking. (9-11)

No: / / / / /

Date: _____

K1. NOW I WOULD LIKE TO ASK ABOUT THE THINGS YOU DO FOR FUN. DURING THE LAST FOUR WEEKS, HAVE YOU AND YOUR WIFE (with or without children) DONE ANYTHING TOGETHER FOR FUN OUTSIDE THE HOUSE?

Yes _____ No _____

If Yes, number of times.

_____

K2. HAVE YOU VISITED WITH ANY OF YOUR OR YOUR WIFE'S RELATIVES IN THE LAST FOUR WEEKS?

Yes _____ No _____

If Yes, a) about how many times?

_____

b) how many different relatives?

_____

K3. DURING THE LAST FOUR WEEKS, HAVE YOU VISITED OR DONE THINGS TOGETHER WITH ANY OF YOUR FRIENDS?

Yes _____ No _____

If Yes, a) about how many times?

_____

b) how many different friends?

_____

K4. NEXT I WOULD LIKE TO KNOW ABOUT YOUR DAILY ACTIVITIES NOW, AS COMPARED WITH THREE MONTHS AGO. COULD YOU TELL ME IF THERE HAVE BEEN ANY CHANGES IN THE THINGS YOU DO (SINCE I LAST SAW YOU) AND THE AMOUNT OF TIME YOU SPEND DOING THEM?

Probe for:	MORE than 3 mos. ago.	SAME as 3 mos. ago.	LESS than 3 mos. ago
a. SLEEPING	☐	☐	☐
b. EATING	☐	☐	☐
c. WORKING AROUND THE HOUSE OR YARD	☐	☐	☐
d. TV, RADIO	☐	☐	☐
e. NEWSPAPERS, OTHER READING	☐	☐	☐
f. HOBBIES, OTHER SPARE TIME ACTIVITY	☐	☐	☐
g. OTHER	☐	☐	☐

Comments:

K5. CAN YOU THINK OF ANY OTHER CHANGES IN YOUR ACTIVITIES OVER THE LAST 3 MONTHS? <u>For each change, probe for amount of time per unit time.</u>

K6. WHAT IS MOST IMPORTANT IN YOUR LIFE THESE DAYS?

K7. WHAT IS MOST PLEASANT IN YOUR LIFE THESE DAYS?

K8. WHAT ARE THE MAIN THINGS ON YOUR MIND THESE DAYS? (Concern, troubles, problems, worries.)

The University of Michigan
Survey Research Center
Project 327

A Study of People Changing Jobs
SELF IDENTITY VISIT

No. / / / / /

Nurse:_____

Date:_____

Employment Status

- ☐ Original job
- ☐ Unemployed since_____
- ☐ Working part-time since _____
- ☐ Reemployed since_____
- ☐ Other, explain_____

_____

_____

List all contacts and attempted contacts including all telephone calls.

Date	Type of contact and result

L1. I WOULD LIKE TO START BY ASKING YOU ABOUT THE DAILY HEALTH RECORD. HAVE YOU BEEN ABLE TO FILL IT OUT ALL RIGHT?

Yes ☐ No ☐

Review the entire two weeks with him and make sure that the forms have been properly filled out. Add any comments below that you think may be useful to clarify the nature of or the disability due to an illness. It is of particular importance to check the usual activities and the medicines' and doctors' columns for each illness that is mentioned.

Comments

L2. NOW I WOULD LIKE TO ASK YOU SOME VERY SPECIFIC QUESTIONS STILL FOCUSED ON THE LAST TWO WEEKS. HAVE YOU HAD ANY:--

	Yes	No
Pain in any part of the body	___	___
Rash or breaking out on your skin	___	___
Cold or cough	___	___
Headaches	___	___
Trouble with your eyes	___	___
Trouble with your teeth	___	___
Trouble with your digestion	___	___
Trouble with your hands	___	___
Trouble with constipation	___	___
Trouble passing water	___	___
Swelling of your feet or ankles	___	___
Trouble with shortness of breath	___	___
Athlete's foot	___	___
Accidental injury	___	___
Medicine of any sort	___	___

For each yes above, make sure that an appropriate entry has been made in the Daily Health Record.

	Initial	Final
L3. Pulse rate		
L4. Systolic blood pressure		
L5. Diastolic muffling		
L6. Diastolic disappearance		

Now explain the self-administered section to R.

No: /_/_/_/_/_/

Date: _____

CONFIDENTIAL: FOR STATISTICAL PURPOSES ONLY

SECTION M

The University of Michigan
Survey Research Center
Project 327

ON THIS PAGE IT SAYS "I AM" AND THERE IS A BLANK LINE. PLEASE COMPLETE EACH "I AM" SENTENCE BY DESCRIBING YOURSELF IN ANY WAY YOU WANT.

M1. I AM..._____

M2. I AM..._____

M3. I AM..._____

M4. I AM..._____

M5. I AM..._____

M6. I AM..._____

When you have finished this page please go on and answer the other questions in this booklet yourself.

CHECK THE ANSWER THAT APPLIES BEST.

M7. How likely are you to go to see a doctor if you have been feeling poorly for a few days?

CERTAIN _____
PROBABLE _____
NOT VERY LIKELY _____
VERY UNLIKELY _____

M8. How likely are you to go to see a doctor if you feel you have a fever, say a temperature of about 101?

CERTAIN _____
PROBABLE _____
NOT VERY LIKELY _____
VERY UNLIKELY _____

M9. How likely are you to go to see a doctor if you have a pain severe enough to keep you awake at night.

CERTAIN _____
PROBABLE _____
NOT VERY LIKELY _____
VERY UNLIKELY _____

M10. How likely is the cost to stop you from getting medical treatment that you need?

CERTAIN _____
PROBABLE _____
NOT VERY LIKELY _____
VERY UNLIKELY _____

PLEASE READ WHAT HELEN IS LIKE AND WHAT MARY IS LIKE. THEN CHECK THE BOX BELOW THAT BEST TELLS WHAT YOUR WIFE IS LIKE THESE DAYS.

M11.

HELEN	MARY
Helen has been able to help her husband in all sorts of little ways. She has managed to look after the things that make life easier for him.	Mary has not been very helpful to her husband. Of course, there have been reasons, but on the whole she has been more of a burden than a help to him.

Check One Box

My wife is like HELEN	My wife is more like HELEN than like MARY	My wife is halfway between HELEN and MARY	My wife is more like MARY than like HELEN	My wife is like MARY

M12.

Betty is a wife who seems pretty quiet, but somehow she usually gets her way. Her husband is pretty likely to end up doing what she wants him to do rather than following his own wishes.	Jane never tells her husband what to do and she usually goes along with his wishes. She doesn't try to keep her husband from doing what he wants to do.

Check one box

My wife is like BETTY	My wife is more like BETTY than like JANE	My wife is halfway between BETTY and JANE	My wife is more like JANE than like BETTY	My wife is like JANE

M13.

ANN	RUTH
Ann is a wife you can lean on when you need some support. Whenever her husband feels discouraged he can count on help from Ann; she will look after him.	Ruth doesn't take care of her husband when he is troubled. She helps him in other ways but not with his blues. She thinks grown up people can take care of their own feelings and worries.

Check One Box

My wife is like ANN	My wife is more like ANN than like RUTH	My wife is halfway between ANN and RUTH	My wife is more like RUTH than like ANN	My wife is like RUTH

M14.

MARY	HELEN
Mary is the kind of wife who doesn't pay much attention when her husband wants to tell her about his difficulties and misfortunes. If she listens at all, she doesn't do much to comfort him.	Helen is a very sympathetic wife who is always ready to listen when things are doing bad for her husband. She does everything possible to make him feel better.

Check One Box

My wife is like MARY	My wife is more like MARY than like HELEN	My wife is halfway between MARY and HELEN	My wife is more like HELEN than like MARY	My wife is like HELEN

M15.

BETTY	JANE
Betty always respects her husband's independence. She lets him make his own decisions. She thinks he should be free to run his own life.	Jane is the kind of wife who tries to control her husband. She asserts her authority and expects him to follow through.

Check One Box

My wife is like BETTY	My wife is more like BETTY than like JANE	My wife is halfway between BETTY and JANE	My wife is more like JANE than like BETTY	My wife is like JANE

NOW I WOULD LIKE TO ASK TWO THINGS ABOUT YOUR LIFE:
HOW THINGS LOOK TO YOU NOW, AND
HOW YOU WOULD LIKE THINGS TO BE.
I'M GOING TO READ SOME QUESTIONS ABOUT THE THINGS YOU DO AND HOW YOU LIVE. THE POSSIBLE ANSWERS ARE ON THIS CARD. ALL YOU DO IS GIVE ME THE NUMBER OF THE ANSWER YOU HAVE CHOSEN. Hand R. the card of responses.

N1. a) HOW PHYSICALLY ACTIVE ARE YOU NOW?

1. _____ A great deal
2. _____ Quite a lot
3. _____ A fair amount
4. _____ Some
5. _____ Not very much
6. _____ Very little

b) HOW PHYSICALLY ACTIVE WOULD YOU LIKE TO BE?

1. _____ A great deal
2. _____ Quite a lot
3. _____ A fair amount
4. _____ Some
5. _____ Not very much
6. _____ Very little

N2. a) HOW MUCH OF YOUR TIME IS FILLED WITH THINGS TO DO. HOW BUSY ARE YOU NOW?

1. _____ A great deal
2. _____ Quite a bit
3. _____ A fair amount
4. _____ Some
5. _____ Not very
6. _____ Not at all

b) HOW BUSY WOULD YOU LIKE TO BE?

1. _____ A great deal
2. _____ Quite a bit
3. _____ A fair amount
4. _____ Some
5. _____ Not very
6. _____ Not at all

N3. a) DO YOU HAVE A FEELING OF SECURITY WHEN YOU THINK ABOUT THE FUTURE

HOW MUCH SECURITY DO YOU FEEL ABOUT THE FUTURE NOW?

1. _____ A great deal
2. _____ Quite a lot
3. _____ A fair amount
4. _____ Some
5. _____ Not very much
6. _____ Very little

b) HOW MUCH SECURITY WOULD YOU LIKE TO FEEL?

1. _____ A great deal
2. _____ Quite a lot
3. _____ A fair amount
4. _____ Some
5. _____ Not very much
6. _____ Very little

N4. a) HOW MUCH DO YOU FEEL YOU ARE GETTING AHEAD IN THE WORLD, NOW?

1. _____ A great deal
2. _____ Quite a lot
3. _____ A fair amount
4. _____ Some
5. _____ Not very much
6. _____ Very little

b) HOW MUCH WOULD YOU LIKE TO GET AHEAD IN THE WORLD?

1. _____ A great deal
2. _____ Quite a lot
3. _____ A fair amount
4. _____ Some
5. _____ Not very much
6. _____ Very little

N5. a) HOW MUCH DO YOU FEEL THE THINGS YOU DO NOW ARE INTERESTING?

1. _____ A great deal
2. _____ Quite a lot
3. _____ A fair amount
4. _____ Some
5. _____ Not very much
6. _____ Very little

b) **HOW MUCH WOULD YOU LIKE THE THINGS YOU DO TO BE INTERESTING?**

1. _____ A great deal
2. _____ Quite a lot
3. _____ A fair amount
4. _____ Some
5. _____ Not very much
6. _____ Very little

N6. a) **HOW MUCH DO YOU GET A CHANCE TO USE THE SKILLS YOU ARE BEST AT IN WHAT YOU DO?**

1. _____ A great deal
2. _____ Quite a lot
3. _____ A fair amount
4. _____ Some
5. _____ Not very much
6. _____ Very little

b) **HOW MUCH WOULD YOU LIKE TO GET A CHANCE TO USE YOUR SKILLS?**

1. _____ A great deal
2. _____ Quite a lot
3. _____ A fair amount
4. _____ Some
5. _____ Not very much
6. _____ Very little

N7. a) **HOW MUCH CAN YOU DO THINGS YOUR WAY AND DECIDE WHAT TO DO NEXT?**

1. _____ A great deal
2. _____ Quite a lot
3. _____ A fair amount
4. _____ Some
5. _____ Not very much
6. _____ Very little

b) **HOW MUCH WOULD YOU LIKE TO BE ABLE TO DO THINGS YOUR WAY?**

1. _____ A great deal
2. _____ Quite a lot
3. _____ A fair amount
4. _____ Some
5. _____ Not very much
6. _____ Very little

N8. a) HOW MUCH OPPORTUNITY IS THERE FOR YOU TO LEARN NEW THINGS OR GAIN NEW SKILLS?

1. _____ A great deal
2. _____ Quite a lot
3. _____ A fair amount
4. _____ Some
5. _____ Not very much
6. _____ Very little

b) HOW MUCH OPPORTUNITY TO LEARN NEW THINGS WOULD YOU <u>LIKE</u> THERE TO BE?

1. _____ A great deal
2. _____ Quite a lot
3. _____ A fair amount
4. _____ Some
5. _____ Not very much
6. _____ Very little

N9. a) IN GENERAL, HOW MUCH AUTHORITY AND RESPONSIBILITY DO YOU HAVE? HOW MUCH DO YOU GIVE DIRECTIONS AND TELL OTHER PEOPLE WHAT TO DO?

1. _____ A great deal
2. _____ Quite a lot
3. _____ A fair amount
4. _____ Some
5. _____ Not very much
6. _____ Very little

b) HOW MUCH AUTHORITY WOULD YOU <u>LIKE</u> TO HAVE?

1. _____ A great deal
2. _____ Quite a lot
3. _____ A fair amount
4. _____ Some
5. _____ Not very much
6. _____ Very little

N10. a) HOW MUCH DO YOU GET A CHANCE TO TALK WITH THE PEOPLE AROUND YOU AND ENJOY YOURSELF?

1. _____ A great deal
2. _____ Quite a lot
3. _____ A fair amount
4. _____ Some
5. _____ Not very much
6. _____ Very little

b) HOW MUCH WOULD YOU LIKE TO GET A CHANCE TO TALK WITH THE PEOPLE AROUND YOU AND ENJOY YOURSELF?

1. _____ A great deal
2. _____ Quite a lot
3. _____ A fair amount
4. _____ Some
5. _____ Not very much
6. _____ Very little

N11. a) HOW MUCH ARE YOU ABLE TO DISCUSS YOUR PROBLEMS WITH THE PEOPLE AROUND YOU WHEN YOU ARE FEELING LOW OR WHEN SOMETHING BOTHERS YOU?

1. _____ A great deal
2. _____ Quite a lot
3. _____ A fair amount
4. _____ Some
5. _____ Not very much
6. _____ Very little

b) HOW MUCH WOULD YOU LIKE TO DISCUSS YOUR PROBLEMS WITH THE PEOPLE AROUND YOU?

1. _____ A great deal
2. _____ Quite a lot
3. _____ A fair amount
4. _____ Some
5. _____ Not very much
6. _____ Very little

N12. a) HOW MUCH DO YOU THINK YOU ARE DOING IMPORTANT THINGS, SO OTHERS NOTICE YOU AND RESPECT YOU FOR WHAT YOU DO?

1. _____ A great deal
2. _____ Quite a lot
3. _____ A fair amount
4. _____ Some
5. _____ Not very much
6. _____ Very little

b) HOW MUCH WOULD YOU LIKE OTHERS TO RESPECT YOU?

1. _____ A great deal
2. _____ Quite a lot
3. _____ A fair amount
4. _____ Some
5. _____ Not very much
6. _____ Very little

No _____

WE HAVE ASKED YOU TO DESCRIBE FOR US YOUR LIFE, HOW THINGS HAVE BEEN GOING FOR YOU, AND NOW WE WOULD LIKE TO FIND OUT HOW YOU WOULD DESCRIBE YOURSELF. WE WILL USE A SIMILAR PROCEDURE. I AM GOING TO READ YOU A LIST OF ADJECTIVES AND PHRASES WHICH CAN BE USED TO DESCRIBE PEOPLE. PLEASE LOOK AT YOURSELF AS HONESTLY AS YOU CAN AND SEE HOW YOU COMPARE WITH OTHER PEOPLE--THOSE THAT YOU KNOW OR KNOW ABOUT. THE POSSIBLE ANSWERS ARE ON THIS CARD. ALL YOU NEED TO DO IS GIVE ME THE NUMBER OF THE MOST APPROPRIATE ANSWER. HAND R THE LIST OF RESPONSES.

13. LIKES TO HAVE INTERESTING THINGS TO DO; LIKES TO GET INVOLVED IN THE THINGS HE DOES.

1. I am very much like that _____
2. I am quite a bit like that _____
3. I am somewhat like that _____
4. I am a little bit like that _____
5. I am not like that _____
6. I am not at all like that _____

14. LIKES TO USE HIS SKILLS AND DO THINGS HE IS BEST AT

1. I am very much like that _____
2. I am quite a bit like that _____
3. I am somewhat like that _____
4. I am a little bit like that _____
5. I am not like that _____
6. I am not at all like that _____

15. INDEPENDENT: LIKES WORKING ON HIS OWN

1. I am very much like that _____
2. I am quite a bit like that _____
3. I am somewhat like that _____
4. I am a little bit like that _____
5. I am not like that _____
6. I am not at all like that _____

16. LIKES TO LEARN NEW THINGS; LIKES TO DEVELOP NEW SKILLS

1. I am very much like that _____
2. I am quite a bit like that _____
3. I am somewhat like that _____
4. I am a little bit like _____
5. I am not like that _____
6. I am not at all like that _____

17. DOMINANT: LIKES TO HAVE AUTHORITY; LIKES HAVING OTHERS FOLLOW HIS ADVICE OR ORDERS.

1. I am very much like that _____
2. I am quite a bit like that _____
3. I am somewhat like that _____
4. I am a little bit like that _____
5. I am not like that _____
6. I am not at all like that _____

18. SOCIABLE AND GREGARIOUS: LIKES TO BE WITH PEOPLE; ENJOYS OTHER PEOPLE.

1. I am very much like that _____
2. I am quite a bit like that _____
3. I am somewhat like that _____
4. I am a little bit like that _____
5. I am not like that _____
6. I am not at all like that _____

19. LIKES TO TALK OVER HIS PROBLEMS; LIKES TO RECEIVE ENCOURAGEMENT AND SYMPATHY.

1. I am very much like that _____
2. I am quite a bit like that _____
3. I am somewhat like that _____
4. I am a little bit like that _____
5. I am not like that _____
6. I am not at all like that _____

20. SECURITY-MINDED: LIKES TO FEEL SECURE ABOUT THE FUTURE; LIKES TO KNOW WHAT IS COMING UP.

1. I am very much like that _____
2. I am quite a bit like that _____
3. I am somewhat like that _____
4. I am a little bit like that _____
5. I am not like that _____
6. I am not at all like that _____

21. AMBITIOUS: WANTS TO GET AHEAD IN THE WORLD.

1. I am very much like that _____
2. I am quite a bit like that _____
3. I am somewhat like that _____
4. I am a little bit like that _____
5. I am not like that _____
6. I am not at all like that _____

22. LIKES TO KEEP BUSY; LIKES TO HAVE HIS TIME FILLED IN WITH THINGS TO DO.

1. I am very much like that _____
2. I am quite a bit like that _____
3. I am somewhat like that _____
4. I am a little bit like that _____
5. I am not like that _____
6. I am not at all like that _____

23. LIKES TO BE RESPECTED BY OTHERS; LIKES TO HAVE OTHERS THINK WELL OF HIM.

1. I am very much like that _____
2. I am quite a bit like that _____
3. I am somwehat like that _____
4. I am a little bit like that _____
5. I am not like that _____
6. I am not at all like that _____

24. ACTIVE. LIKES TO BE PHYSICALLY ACTIVE; LIKES TO FEEL HE IS USING HIS ENERGIES.

1. I am very much like that _____
2. I am quite a bit like that _____
3. I am somewhat like that _____
4. I am a little bit like that _____
5. I am not like that _____
6. I am not at all like that _____

Don't forget final pulse and BP and urine specimen. Enter on first page.

---

1. I am very much like that.
2. I am quite a bit like that.
3. I am somewhat like that.
4. I am a little bit like that.
5. I am not like that.
6. I am not at all like that.

N25. NOW I'D LIKE TO ASK YOU YOUR REACTION TO THE QUESTIONNAIRE WE'VE JUST COMPLETED. WERE YOU ABLE TO CHOOSE AN ANSWER TO EACH QUESTION WHICH DESCRIBED YOUR TRUE THOUGHTS AND FEELINGS, OR DID YOU THINK THE ANSWERS DIDN'T QUITE APPLY TO YOU? IN OTHER WORDS, HOW WELL DO YOU THINK THE ANSWERS YOU'VE GIVEN DESCRIBE YOUR TRUE THOUGHTS AND FEELINGS?

_____ Very well
_____ Fairly well
_____ Somewhat
_____ Not very well
_____ Not at all well

N26. HOW MUCH ARE YOU THE KIND OF PERSON WHO CAN EXPRESS HIS TRUE THOUGHTS AND FEELINGS ON QUESTIONNAIRES LIKE THIS?

_____ A great deal
_____ Quite a bit
_____ A fair amount
_____ Some
_____ Not very
_____ Not at all

Comments:

A Study of People Changing Jobs

FINAL VISIT

P1. NOW I'D LIKE TO ASK YOU SOME QUESTIONS I'VE ASKED YOU BEFORE. THIS IS A DOUBLE-CHECK TO MAKE SURE THAT OUR RECORDS ARE CORRECT.

(D18) a. AT WHAT AGE DID YOU LEAVE HOME? _____

(B5) b. WHEN WERE YOU MARRIED? _____

(B12b) c. HOW LONG DID YOU WORK (HAVE YOU WORKED) FOR THE _____CO? (indicate name of study company)

_____

(B12c) d. WHAT WAS YOUR LAST HOURLY PAY RATE AT THE _____CO? (If R at same Co.): WHAT WAS YOUR HOURLY PAY RATE WHEN I FIRST SAW YOU? _____

(B8) e. IN WHAT YEAR DID YOU MOVE TO YOUR PRESENT DWELLING?_____ (or) IN WHAT YEAR DID YOU MOVE TO THE HOUSE YOU WERE LIVING IN WHEN I FIRST SAW YOU? _____

(A16) f. WHAT IS THE MOST YOU EVER WEIGHED? _____

Comments:

(Added Question, Insert between #1 and #2)

HOW MANY ROOMS DO YOU HAVE IN YOUR HOME?_____

HOW MANY BEDROOMS?_____

DO YOU FEEL THAT YOUR HOME IS OVERCROWDED? Yes _____

No _____

If yes, Probe: In what way?_____

_____

_____

_____

_____

Nurse's Comment: ☐ I feel the living space in this home is adequate.

☐ I feel the living space in this home is inadequate.

because:_____

_____

_____

☐ This information describes the home in which R lived at the time of initial visit.

☐ This information describes the home to which R moved on _____.
(month and year)

If unemployed, skip to P3.

P2. NEXT WE WOULD LIKE YOU TO COMPARE YOUR NEW JOB WITH THE JOB YOU USED TO HAVE AT THE _____ CO. Hand R card.
USING THIS CARD, PLEASE TELL ME ABOUT:

	Much Better	Somewhat Better	About the Same	Somewhat Worse	Much Worse
a. THE NEW JOB AS A WHOLE	____	____	____	____	____
b. THE PAY	____	____	____	____	____
c. THE MEN YOU WORK WITH	____	____	____	____	____
d. THE BOSS	____	____	____	____	____
e. THE TYPE OF WORK	____	____	____	____	____
f. YOUR CHANCES OF PROMOTION	____	____	____	____	____
g. THE WAY YOU USE YOUR SKILLS	____	____	____	____	____

NOW, I WOULD LIKE TO FIND OUT HOW YOU LOOK BACK ON THE CLOSING OF THE _____ PLANT AND ON THE LOSS OF YOUR JOB THERE.

P3. FIRST, COULD YOU TELL ME HOW YOU WOULD RATE THIS JOB LOSS? Hand R the card.

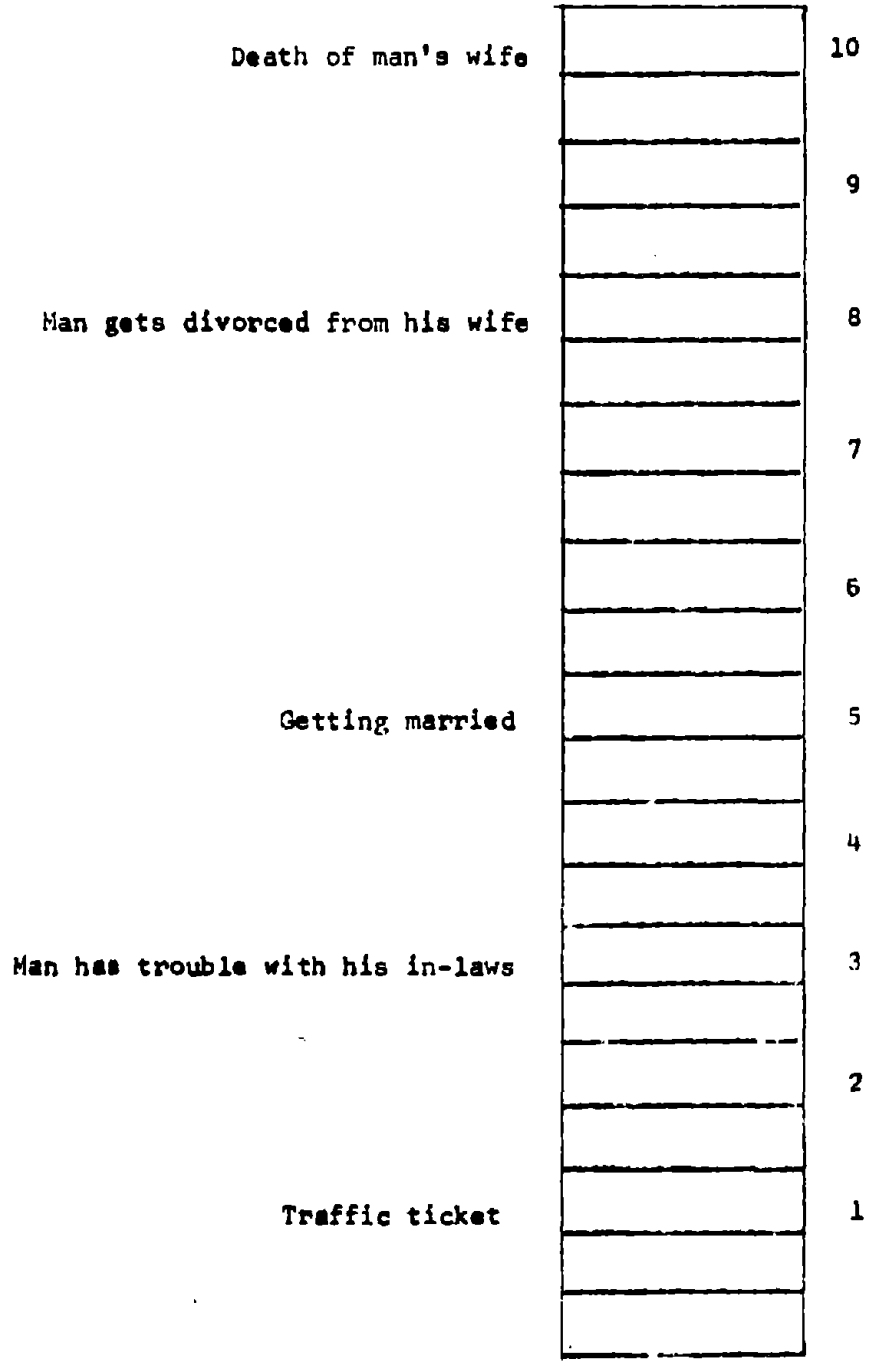
- Changed my whole life ☐
- Very disturbing ☐
- Somewhat disturbing ☐
- Upsetting a little bit ☐
- Hardly bothered me at all ☐

P4. NOW COULD YOU TELL ME HOW LONG YOU THINK IT TOOK YOU BEFORE THINGS GOT PRETTY MUCH BACK TO NORMAL? Hand R the card.

- A week or so ☐
- About a month ☐
- A few months ☐
- Around half a year ☐
- Not yet back to normal even now ☐

P5. NOW I AM GOING TO SHOW YOU A LADDER ON WHICH ARE PLACED SOME EVENTS THAT MIGHT HAPPEN IN A MAN'S LIFE. THOSE INVOLVING THE MOST CHANGE AND READJUSTMENT ARE AT THE TOP OF THIS LADDER AND THOSE INVOLVING THE LEAST CHANGE AND READJUSTMENT ARE AT THE BOTTOM.

YOUR COMPANY CLOSED. YOU HAD TO LOOK FOR A NEW JOB. HOW MUCH CHANGE DID IT CAUSE? WHERE WOULD YOU PLACE THIS EVENT ON THE LADDER? (Show R the ladder.)



P6. NOW I AM GOING TO SHOW YOU A LIST OF THINGS THAT MIGHT HAPPEN TO A MAN. PLEASE CHECK OFF THE THINGS THAT HAVE HAPPENED TO YOU SINCE THE BEGINNING OF THIS STUDY. NEXT TO THE EVENT, GIVE THE DATE AS ACCURATELY AS YOU CAN REMEMBER. (Hand R list)

PROBE (after R finishes form) Have you checked off all the things that happened to you, even if you couldn't exactly remember the date?

P7. NOW, WE WOULD LIKE YOU TO LOOK BACK ON THE PAST YEAR AND A HALF AND TELL US WHEN THINGS WERE AT THEIR BEST FOR YOU AND ALSO WHEN THEY WERE AT THEIR WORST- HOW THINGS IMPROVED OR GOT WORSE FOR YOU, AND MAYBE HOW LONG IT LASTED. IN OTHER WORDS, LIFE HAS ITS UPS AND DOWNS. WE WANT YOU TO SHOW US JUST THAT: THE UPS AND DOWNS IN YOUR LIFE DURING THE LAST YEAR AND A HALF.

HAND R THE SAMPLE GRAPH This, for example, is how one man drew the ups and downs in his life. You can see that a year ago last summer things were going along pretty much as usual and then something happened that really made him happy. He was a salesman who landed a really big deal and that made things better than usual all Fall. Then last Winter, something bad happened which made it hard for him. Then, something else came practically on top of it that made things real rough for a while. Right now he is having some difficult moments.

HAND R THE BLANK GRAPH PLEASE DRAW A PICTURE OF THE UPS AND DOWNS IN YOUR LIFE DURING THE LAST YEAR AND A HALF.

Use no probes unless necessary.

FIRST set of PROBES: Think of when the very best time was. How good was it? Where would you put it on the chart? How long did it last? Think of when the very worst time was. How bad was it? Where would you put it on the chart? How long did it last?

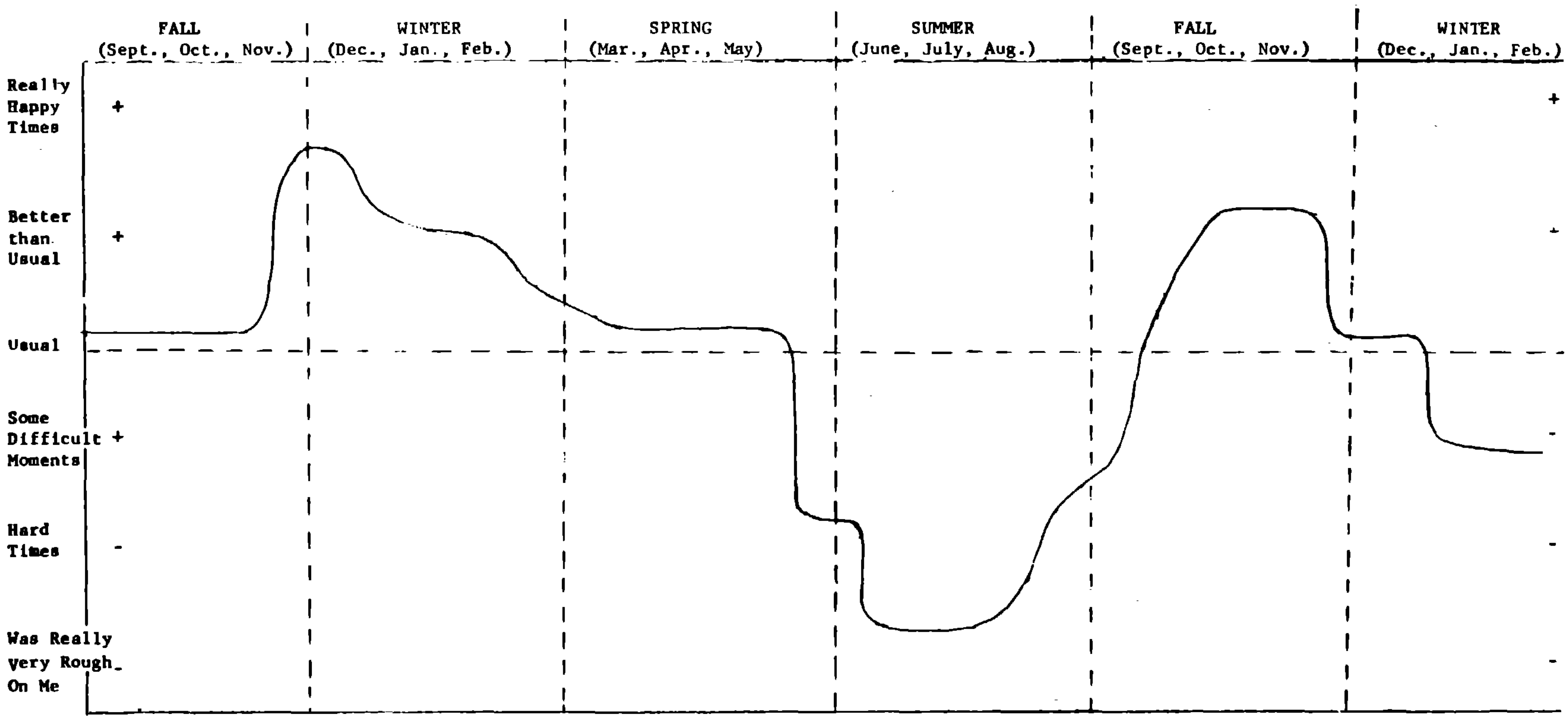
SECOND set of PROBES: Where on this chart would you put yourself now? Where would you have put yourself a year ago last summer? Try to think of each season and fill in the times in between.

THIRD set of PROBES: Think of something specific that happened. Think of the best thing or the worse thing. When did it happen? Where would you put it on the chart? How long did you feel that way? How did things go in between?

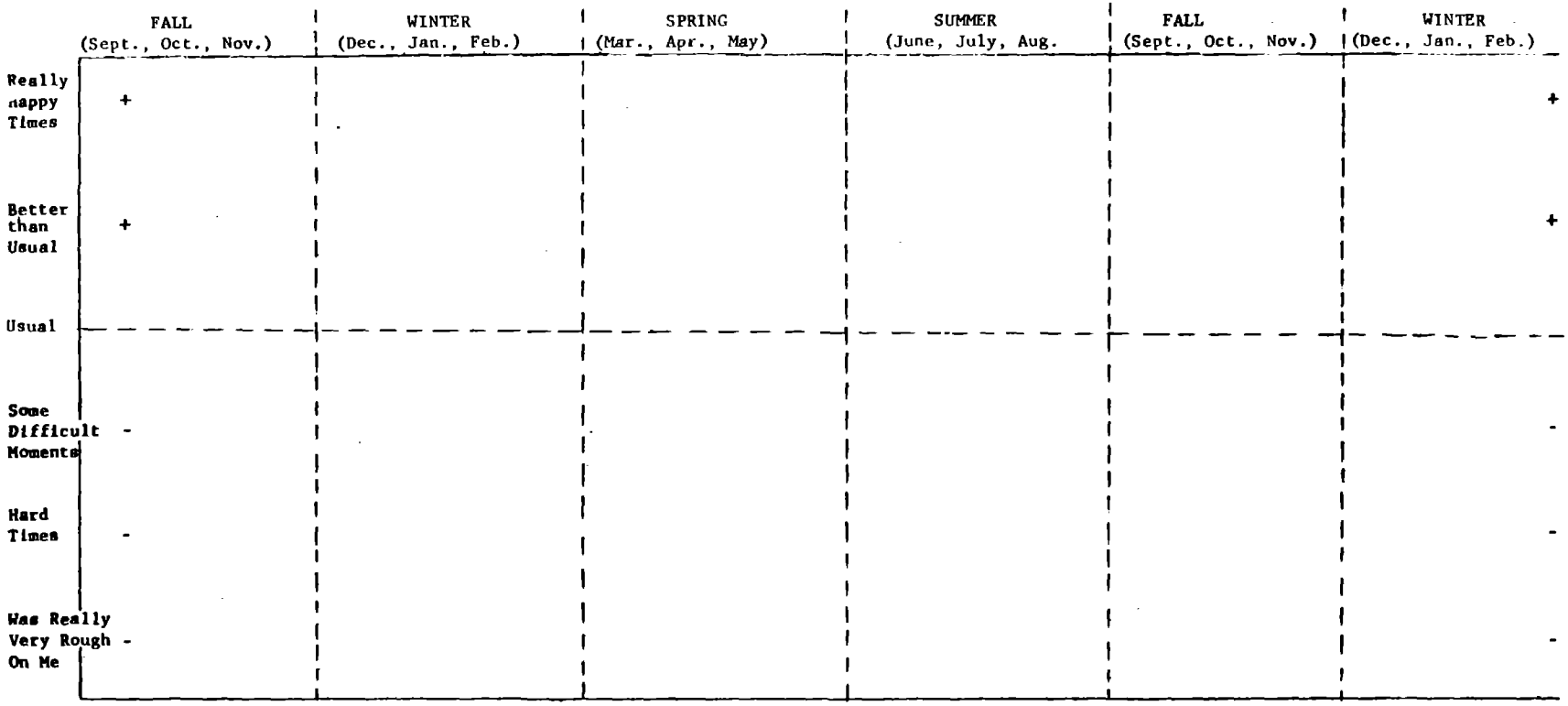
No:_____

P6. PLEASE CHECK ANY OF THE FOLLOWING THINGS WHICH HAVE HAPPENED TO YOU SINCE THE STUDY BEGAN. AFTER YOU HAVE CHECKED THEM ENTER THE DATE AS ACCURATELY AS YOU CAN REMEMBER.

✓	DATE	
___	_____	a. SON OR DAUGHTER LEAVING HOME
___	_____	b. TROUBLE WITH BOSS
___	_____	c. CHANGE IN SOCIAL ACTIVITIES
___	_____	d. DEATH OF CLOSE FRIEND
___	_____	e. TOOK OUT A MORTGAGE
___	_____	f. FORECLOSURE OF MORTGAGE OR LOAN
___	_____	g. PAID OFF MORTGAGE
___	_____	h. PERSONAL INJURY OR ILLNESS
___	_____	i. MORE ARGUMENTS WITH WIFE
___	_____	j. JAIL TERM
___	_____	k. PREGNANCY OF WIFE
___	_____	l. GAIN OF NEW FAMILY MEMBER
___	_____	m. TROUBLE WITH IN-LAWS
___	_____	n. SICKNESS OF FAMILY MEMBER
___	_____	o. OUTSTANDING PERSONAL ACHIEVEMENT
___	_____	p. WIFE BEGIN WORK
___	_____	q. WIFE STOP WORK
___	_____	r. MARITAL SEPARATION
___	_____	s. DEATH OF CLOSE FAMILY MEMBER
___	_____	t. MARITAL RECONCILIATION
___	_____	u. ANYTHING ELSE


FALL
(Sept., Oct., Nov.)
WINTER
(Dec., Jan., Feb.)
SPRING
(Mar., Apr., May)
SUMMER
(June, July, Aug.)
FALL
(Sept., Oct., Nov.)
WINTER
(Dec., Jan., Feb.)
Really Happy Times
Better than Usual
Usual
Some Difficult Moments
Hard Times
Was Really Very Rough On Me

2.13.8


FALL
(Sept., Oct., Nov.)
WINTER
(Dec., Jan., Feb.)
SPRING
(Mar., Apr., May)
SUMMER
(June, July, Aug.
FALL
(Sept., Oct., Nov.)
WINTER
(Dec., Jan., Feb.)
Really Happy Times
+
+
Better than Usual
+
Usual
Some Difficult Moments
-
-
Hard Times
-
-
Was Really Very Rough On Me
-
-

W-3-9

P7. NURSE: R filled out the chart with _____ no probes,
_____ first set of probes.
_____ second set of probes.
_____ third set of probes.

Comments

NOW LET ME ASK YOU A COUPLE OF QUESTIONS THAT ARE A LITTLE DIFFERENT.

(For the following two questions note how long R pauses and pay particular attention to his first words. Probe as necessary to get complete answers.)

P8. WHAT WOULD YOU DO IF YOU KNEW THAT AN ATOMIC BOMB WOULD BE DROPPED NEAR YOUR HOME TOMORROW NIGHT?

P9. YOU ARE WALKING HOME AND YOU SEE A MAN CHOKING ANOTHER MAN IN A VACANT LOT NEAR YOUR HOME. WHAT WOULD YOU DO?

No. _____

SECTION R

THANK HIM!

Tell him how important his contribution has been and that we might want to check a few points with him at a later date. Tell him we will send him a summary of our findings.

Give him his certificate.

During the above interchange, give him an opportunity to add any comments he wishes about the study and record these comments in the space below after leaving R's home.

No _____

CONFIDENTIAL: FOR STATISTICAL PURPOSES ONLY

Please read each item. If you agree with it or if it is true of you, place a mark in the box under the word TRUE. If you disagree with an item or it is untrue of you, place a mark in the box under the word FALSE. Work rapidly. Do not skip any items. Please recheck to make sure you have answered all the questions.

	TRUE	FALSE
1. I have had periods when I felt so full of pep that sleep did not seem necessary for days at a time.	☐	☐
2. I have never deliberately said something that hurt someone's feelings.	☐	☐
3. When I leave home, I do not worry about whether the door is locked and the windows closed.	☐	☐
4. Hope only brings disappointment.	☐	☐
5. I am often sorry because I am so cross and grouchy.	☐	☐
6. I have several times had a change of heart about my life work.	☐	☐
7. I have never felt that I was punished without cause.	☐	☐
8. The man who had most to do with me when I was a child (such as my father, stepfather, etc.) was very strict with me.	☐	☐
9. It is better to do nothing than to make a mistake.	☐	☐
10. I sometimes think when people have a misfortune they only got what they deserved.	☐	☐

	TRUE	FALSE
11. I dream frequently.	☐	☐
12. I am sometimes irritated by people who ask favors of me.	☐	☐
13. I have often felt badly over being misunderstood when trying to keep someone from making a mistake.	☐	☐
14. I have almost never felt the urge to tell someone off.	☐	☐
15. I drink an unusually large amount of water every day.	☐	☐
16. I can be easily convinced.	☐	☐
17. There have been times when I was quite jealous of the good fortune of others.	☐	☐
18. I have never been made especially nervous over trouble that any members of my family have gotten into.	☐	☐
19. I never make a long trip without checking the safety of my car.	☐	☐
20. I wish I were not so shy.	☐	☐
21. I have never been irked when people expressed ideas very different from my own.	☐	☐
22. If I could have my way, I would much rather take it easy than work.	☐	☐
23. I never resent being asked to return a favor.	☐	☐
24. I would never think of letting someone else be punished for my wrongdoings.	☐	☐

	TRUE	FALSE
25. I often must sleep over a matter before I decide what to do.	☐	☐
26. There have been occasions when I felt like smashing things.	☐	☐
27. I frequently ask people for advice.	☐	☐
28. I wish I could get over worrying about things I have said that may have injured other people's feelings.	☐	☐
29. When I don't know something, I don't at all mind admitting it.	☐	☐
30. My mother or father often made me obey even when I thought that it was unreasonable.	☐	☐
31. There is sure to be a catch somewhere.	☐	☐
32. I have had very peculiar and strange experiences.	☐	☐
33. At times I have really insisted on having things my own way.	☐	☐
34. I frequently find it necessary to stand up for what I think is right.	☐	☐
35. I sometimes try to get even, rather than forgive and forget.	☐	☐
36. I am easily awakened by noise.	☐	☐
37. I am always courteous, even to people who are disagreeable.	☐	☐
38. I can stand as much pain as others can.	☐	☐
39. People who say that every cloud has a silver lining are not being realistic.	☐	☐

	TRUE	FALSE
40. I don't find it particularly difficult to get along with loud mouthed, obnoxious people.	☐	☐
41. I blush no more often than others.	☐	☐
42. I always try to practice what I preach.	☐	☐
43. At times my thoughts have raced ahead faster than I could speak them.	☐	☐
44. I'm always willing to admit it when I make a mistake.	☐	☐
45. Hardly anyone cares much what happens to you.	☐	☐
46. It takes a lot of argument to convince most people of the truth.	☐	☐
47. I like to gossip at times.	☐	☐
48. I think a great many people exaggerate their misfortunes in order to gain the sympathy and help of others.	☐	☐
49. My hardest battles are with myself.	☐	☐
50. I am easily influenced by others.	☐	☐
51. I practically never blush.	☐	☐
52. There have been occasions when I took advantage of someone.	☐	☐
53. Religion gives me no worry.	☐	☐
54. I can remember "playing sick" to get out of something.	☐	☐
55. I almost never dream.	☐	☐

	TRUE	FALSE
56. Comfort is necessary for a contented life.	☐	☐
57. No matter who I'm talking to, I am always a good listener.	☐	☐
58. I get all the sympathy I should.	☐	☐
59. If I could get into a movie without paying and be sure I was not seen, I would probably do it.	☐	☐
60. I daydream very little.	☐	☐
61. On a few occasions, I have given up doing something because I thought too little of my ability.	☐	☐
62. I believe I am no more nervous than most others.	☐	☐
63. There have been times when I felt like rebelling against people in authority even though I knew they were right.	☐	☐
64. It is difficult for me to stick to my opinion when someone else insists on theirs.	☐	☐
65. My table manners at home are as good as when I eat out in a restaurant.	☐	☐
66. I feel sympathetic toward people who tend to hang on to their griefs and troubles.	☐	☐
67. I am always careful about my manner of dress.	☐	☐
68. It is not hard for me to ask help from my friends even though I cannot return the favor.	☐	☐
69. On occasion I have had doubts about my ability to succeed in life.	☐	☐

	TRUE	FALSE
70. I would love a life of ease and luxury.	☐	☐
71. I have been quite independent and free from family rule.	☐	☐
72. It wouldn't make me nervous if any members of my family got into trouble with the law.	☐	☐
73. I sometimes feel resentful when I don't get my way.	☐	☐
74. I do not worry about catching diseases.	☐	☐
75. My speech is the same as always (not faster or slower, or slurring; no hoarseness).	☐	☐
76. I have never intensely disliked anyone.	☐	☐
77. Life is a heavy load along a rough and weary road.	☐	☐
78. I do not mind being made fun of.	☐	☐
79. I never hesitate to go out of my way to help someone in trouble.	☐	☐
80. I have often wished I were a girl.	☐	☐
81. It is sometimes hard for me to go on with my work if I am not encouraged.	☐	☐
82. I am an important person.	☐	☐
83. I hardly ever feel pain in the back of my neck.	☐	☐
84. Before voting, I thoroughly investigate the qualifications of all the candidates.	☐	☐
85. I seldom worry about my health.	☐	☐

No. _____

Date _____

Nurse _____

ON YOUR PRESENT JOB ARE YOU COVERED BY A RETIREMENT PLAN?

Yes _____ No _____

If No,

IF YOU WORK FOR THIS COMPANY LONG ENOUGH, WILL YOU BECOME ELIGIBLE FOR SUCH A PLAN?

Yes _____ No _____

If Yes,

IN WHAT YEAR WILL YOU BE ELIGIBLE TO COME UNDER THE RETIREMENT PLAN?

_____

Case No. _____
Nurse _____

RATING OF R'S HEALTH AT TIME OF INITIAL VISIT
(To be completed at time of Final Visit)

1. Please list recurring illness and chronic conditions from which this man suffered at the time of the initial visit even if you did not discover this until later on. (e.g. F21) A chronic condition is one which is disabling or occasionally disabling or potentially disabling and which has lasted 90 days or more or may be reasonably expected to last at least 90 days. Please list anatomical deformities and dismemberment as well as diseases. If you are not certain as to whether a given condition should be listed, put it down and give the reason for your uncertainty.

2. TO WHAT EXTENT WAS THIS MAN DISABLED AT THE TIME OF THE INITIAL VISIT? CHECK ONE.

_____0. Not disabled.

_____1. Potentially disabled. (has a chronic condition that is likely to shorten his life, e.g. diabetes or hypertension, or a deformity that might interfere with his ability to perform some job even if it doesn't interfere with his current job.)

_____2. Minimally disabled. (has a condition that is bothersome but doesn't seriously interfere with his work.)

_____3. Moderate disability. (has a condition which has imposed a restriction on the type of job he can do to the extent that his current job assignment was in part determined by his disability either by the company or by his job seeking behavior; or has a medical restriction on what he can do in his job, e.g. not allowed to lift anything over 30 lbs.)

DATES

No. _____

Hours Worked Per Week	1st	1st	1st	1st	1st	1st	1st	1st	1st	1st	1st	1st	1st	1st	1st	1st
65+																
55-64																
45-54																
35-44																
20-34																
10-19																
1-9																
Odd Jobs Only																
None																
Additional Information																
Retired																
Sick																
Vacation																
Layoff																

PROJECT 327 SUMMARY OF EMPLOYMENT HISTORY (See sheet of instructions) May, 1967

No. _____

Nurse _____

S+ 1. Sketch in the answers to the following questions. Sometimes one word will be sufficient. (This will be used for indexing cases and will not be coded.)

a. Classify this man's job change. Check more than one if indicated.

☐ Voluntary; i.e., left before closing.

☐ Carried two overlapping jobs.

☐ Promptly found a new job and kept it.

☐ Had more than one job change.

☐ Had more than a month unemployed.

How long? Approximate number of weeks _____.

☐ No job change.

Comments:

_____

_____

_____

_____

_____

b. What emotional effects did the job change seem to have on him?

_____

_____

_____

_____

_____

_____

c. What physical effects did the job change have on him?

d. How did R adjust to his new job?

e. Have there been other events in R's life during the study which might have had a large emotional effect on him? No Yes
If Yes, specify:

No. _____

S+ 2. Write a thumbnail sketch of the impression R makes on you. This will be sort of a caricature of his salient physical and personality traits.

_____

_____

_____

_____

_____

_____

No. _____

S+ 3. Are there any personal and/or health characteristics of R which have been particularly enabling or disabling with respect to his total performance in this transition?

_____

_____

_____

_____

S+ 4. Is there any special thing we should know about this R in evaluating his case? No ☐ Yes ☐ <u>If yes, specify</u>:

_____

_____

_____

_____

S+ 5. Was this R seen by Dr. Cobb? Describe any action he took or failed to take because of doctor's visit.

_____

_____

_____

_____

_____

APPENDIX C

APPENDIX C. SOCIAL SUPPORT

1. WIFE SUPPORT

PLEASE READ WHAT HELEN IS LIKE AND WHAT MARY IS LIKE. THEN CHECK THE BOX BELOW THAT BEST TELLS WHAT YOUR WIFE IS LIKE THESE DAYS.

a.

HELEN	MARY
Helen has been able to help her husband in all sorts of little ways. She has managed to look after the things that make life easier for him.	Mary has not been very helpful to her husband. Of course, there have been reasons, but on the whole she has been more of a burden than a help to him.

Check One Box

My wife is like HELEN	My wife is more like HELEN than like MARY	My wife is halfway between HELEN and MARY	My wife is more like MARY than like HELEN	My wife is like MARY

b.

BETTY	JANE
Betty is a wife who seems pretty quiet, but somehow she usually gets her way. Her husband is pretty likely to end up doing what she wants him to do rather than following his own wishes.	Jane never tells her husband what to do and she usually goes along with his wishes. She doesn't try to keep her husband from doing what he wants to do.

Check One Box

My wife is like BETTY	My wife is more like BETTY than like JANE	My wife is halfway between BETTY and JANE	My wife is more like JANE than like BETTY	My wife is like JANE

c.

ANN	RUTH
Ann is a wife you can lean on when you need some support. Whenever her husband feels discouraged he can count on help from Ann; she will look after him.	Ruth doesn't take care of her husband when he is troubled. She helps him in other ways but not with his blues. She thinks grown up people can take care of their own feelings and worries.

Check One Box

My wife is like ANN	My wife is more like ANN than like RUTH	My wife is halfway between ANN and RUTH	My wife is more like RUTH than like ANN	My wife is like RUTH

d.

MARY	HELEN
Mary is the kind of wife who doesn't pay much attention when her husband wants to tell her about his difficulties and misfortunes. If she listens at all, she doesn't do much to comfort him.	Helen is a very sympathetic wife who is always ready to listen when things are going bad for her husband. She does everything possible to make him feel better.

Check One Box

My wife is like MARY	My wife is more like MARY than like HELEN	My wife is halfway between MARY and HELEN	My wife is more like HELEN than like MARY	My wife is like HELEN

e.

THESE DAYS MY WIFE REALLY HELPS ME OUT; SHE DOESN'T LET ME DOWN.

_____ VERY TRUE

_____ SOMEWHAT TRUE

_____ NEITHER TRUE NOR UNTRUE

_____ SOMEWHAT UNTRUE

_____ VERY UNTRUE

f.

I FEEL LOVED.

_____ VERY TRUE

_____ SOMEWHAT TRUE

_____ NEITHER TRUE NOR UNTRUE

_____ SOMEWHAT UNTRUE

_____ VERY UNTRUE

2. AFFILIATIVE BEHAVIOR

NOW I WOULD LIKE TO ASK ABOUT THE THINGS YOU DO FOR FUN.

a.

DURING THE LAST FOUR WEEKS, HAVE YOU AND YOUR WIFE (WITH OR WITHOUT THE CHILDREN) DONE ANYTHING TOGETHER FOR FUN OUTSIDE THE HOUSE?

0 No
1 Yes
9 M.D.

IF YES, NUMBER OF TIMES:

0 If "No"
1 1 and 1 only
2 1-3, a few, a couple
3 4-6, about once a week
4 7-12, a couple times a week
5 13 or more, several times a week
9 M.D. (Cannot be coded M.D. if "No" was coded in Col. 16)

b.

HAVE YOU VISITED WITH ANY OF YOUR OR YOUR WIFE'S RELATIVES IN THE LAST FOUR WEEKS?

0 No
1 Yes
9 M.D.

IF YES, NUMBER OF TIMES:

0 If "No"
1 1 and 1 only
2 1-3, a few, a couple
3 4-6, about once a week
4 7-12, a couple times a week
5 13 or more, several times a week
9 M.D. (Cannot be coded M.D. if "No" was coded in Col. 16)

c.

DURING THE LAST FOUR WEEKS, HAVE YOU VISITED OR DONE THINGS TOGETHER WITH ANY OF YOUR FRIENDS?

0 No
1 Yes
9 M.D.

IF YES, NUMBER OF TIMES:

0 If "No"
1 1 and 1 only
2 1-3, a few, a couple
3 4-6, about once a week
4 7-12, a couple times a week
5 13 or more, several times a week
9 M.D. (Cannot be coded M.D. if "No" was coded in Col. 16)

SOCIABILITY AND EXPRESSIVENESS:

I'M GOING TO READ SOME QUESTIONS ABOUT THE THINGS YOU DO AND HOW YOU LIVE. THE POSSIBLE ANSWERS ARE ON THIS CARD. ALL YOU DO IS GIVE ME THE NUMBER OF THE ANSWER YOU HAVE CHOSEN. Hand R the card of responses.

3. SOCIABILITY

HOW MUCH DO YOU GET A CHANCE TO TALK WITH THE PEOPLE AROUND YOU AND ENJOY YOURSELF?

1 _____ A great deal
2 _____ Quite a lot
3 _____ A fair amount
4 _____ Some
5 _____ Not very much
6 _____ Very little

4. EXPRESSIVENESS

HOW MUCH ARE YOU ABLE TO DISCUSS YOUR PROBLEMS WITH THE PEOPLE AROUND YOU WHEN YOU ARE FEELING LOW OR WHEN SOMETHING BOTHERS YOU?

1 _____ A great deal
2 _____ Quite a lot
3 _____ A fair amount
4 _____ Some
5 _____ Not very much
6 _____ Very little

6. PERCEIVED SUPPORT OF FRIENDS

PLEASE READ WHAT JOE'S FRIENDS AND HARRY'S FRIENDS ARE LIKE. THENK CHECK THE BOX BELOW THAT BEST TELLS WHAT YOUR FRIENDS ARE LIKE.

JOE	HARRY
Joe's friends are the kind that go out of their way for you when things are going bad. When Joe has a problem he can count on them for help.	Harry's friends are the kind who are never around when you need them. Harry sees them occasionally, but they don't pay much attention when he talks about his problems.

Check One Box

My friends are like JOE's	My friends are more like JOE's than HARRY's	My friends are halfway between JOE's and HARRY's	My friends are more like HARRY's than JOE's	My friends are like HARRY's

7. PERCEIVED SUPPORT OF RELATIVES

NOW READ WHAT JOHN"S RELATIVES AND STEVE'S RELATIVES ARE LIKE AND CHECK THE BOX BELOW THAT BEST TELLS WHAT YOUR RELATIVES ARE LIKE.

JOHN	STEVE
John's relatives manage to look after things that make problems easier for him. John feels he can always depend on them.	Steve's relatives don't really lend a hand when Steve has problems or needs help. Steve doesn't feel he can depend on them when things get rough.

Check One Box

My relatives are like JOHN's	My relatives are more more like JOHN's than STEVE's	My relatives are halfway between JOHN's and STEVE's	My relatives are more like STEVE's than JOHN's	My relatives are like STEVE's

APPENDIX C. THE RASI SYMDROME

This is a second order index constructed by taking the mean of the following four indices:

Resentment	172, 175, 177, 178, 214
Anomie	132, 136, 138, 142, 152, 231
Suspicion	122, 130, 246
Independence	113, 121, 127, 134, 247

The number following the name of the index identify the items from the card-sort-test. See Appendix B for the listing of these items. These four indices are related to each other in a curious way. The scatter plots of the six inter-relationships are all pear-shaped with the narrow end at the high or named end of the index. This means that the intercorrelations are high only in the upper ranges of the indices. Therefore, we are dealing with a syndrome not a personality dimension. This variable should ordinarily not be used as if it were continuous, for in its lower half it has little meaning, despite the fact that coefficient $\alpha = 0.79$.

Table 1. List of the C-M items used in the Assert Good 7 and Deny Bad 7 subscales, with some properties exhibited by these items in the Changing Jobs data

	Components of C-M Assert Good 7	Percent 'True' Responses	r with Assert Good 7	r with Deny Bad 7	F Value of Discrimination between High & Low
2215[b]	I am always careful about my manner of dress. (7)[c]	69	-.67[d]	-.35	174
2171	No matter who I am talking to, I am always a good listener. (13)	78	-.63	-.30	144
2151	I am always courteous, even to people who are disagreeable. (21)	71	-.62	-.24	135
2232	Before voting I thoroughly investigate the qualifications of all the candidates. (1)	66	-.62	-.29	134
2116	I have never deliberately said something that hurt someone's feelings. (33)	49	-.57	-.30	102
2227	I never hesitate to go out of my way to help someone in trouble. (2)	83	-.53	-.25	86
2179	My table manners at home are as good as when I eat out in a restaurant. (8)	77	-.51	-.18	76
	Components of C-M Deny Bad 7				
2221	I sometimes feel resentful when I do not get my way. (6)	38	.36	.70	212
2140	There have been occasions when I felt like smashing things. (23)	46	.32	.68	190
2126	I am sometimes irritated by people who ask favors of me. (30)	36	.30	.62	138
2147	At times I have really insisted on having things my own way. (22)	57	.28	.62	137
2149	I sometimes try to get even, rather than forgive and forget. (19)	20	.28	.58	110
2131	There have been times when I was quite jealous of the good fortune of others. (28)	19	.18	.56	101
2217	On occasion I have had doubts about my ability to succeed in life. (5)	45	.26	.55	94

[a] df = (1, 216) for components of Assert Good 7, (1, 217) for components of Deny Bad 7.

[b] Item number in the Changing Jobs Project datafile.

[c] Item number in Crowne, D.P. & Marlowe, D. The Approval Motive, New York: Wiley, 1964.

[d] Responses were originally coded 1 = False, 0 = True. These coefficients are negative because the items were reversed when C-M Assert Good 7 was constructed.

Table 2. Item intercorrelations for C-M Assert Good 7 & Deny Bad 7; All R's; CJ7C1; 71029

C-M Crful Abt Dress	821	-0.6684												
C-M Good Listener	816	-0.6330	0.3330											
C-M Alwys Courteous	809	-0.6208	0.3290	0.2918										
C-M Conscient Voter	827	-0.6192	0.3261	0.3044	0.2133									
C-M Nvr Delib Hurt	795	-0.5663	0.2037	0.2072	0.2536	0.2862								
C-M Nvr Hesit Help	825	-0.5333	0.3442	0.2620	0.2482	0.1935	0.2151							
C-M Gd Mnrs At Home	820	-0.5113	0.2656	0.3392	0.2410	0.1808	0.0914	0.0920						
C-M Deny Bad 7	1207	0.4575	-0.3523	-0.2972	-0.2415	-0.2904	-0.2958	-0.2471	-0.1812					
C-M Smthms Resentful	823	0.3596	-0.2301	-0.2569	-0.1901	-0.2304	-0.2248	-0.2268	-0.2060	0.7032				
C-M Felt Like Smash	805	0.3155	-0.2506	-0.1925	-0.1492	-0.2652	-0.2159	-0.1499	-0.0559	0.6829				
C-M Ask Favor Irrit	798	0.3045	-0.2833	-0.1553	-0.1318	-0.1772	-0.1525	-0.1440	-0.1893	0.6231				
C-M Insist Own Way	807	0.2750	-0.2553	-0.0973	-0.1335	-0.2024	-0.2267	-0.1342	-0.1080	0.6220	0.2671			
C-M Sometms Get Evn	808	0.2758	-0.1436	-0.1851	-0.2502	-0.1481	-0.1448	-0.1853	-0.0440	-0.5808	0.2835	0.2202		
C-M Jealous Of Othr	800	0.1770	-0.0633	-0.1746	-0.0923	-0.0849	-0.1226	-0.1086	-0.0587	0.5644	0.2351	0.2254	0.2791	
C-M Dbt My Ability	822	0.2610	-0.2547	-0.2389	-0.1175	-0.1332	-0.1567	-0.1335	-0.1243	-0.5489	0.2351	0.1712	0.1176	
C-M Mean	1002	0.7854	-0.5199	-0.5257	-0.5429	-0.4925	-0.4678	-0.3900	-0.3624	-0.7986	0.4829	0.4638	0.4069	0.4416