A Descriptive Study of Michigan Auto Workers' (UAW) Physical and Psychological Responses to 1987 Plant Closures

Lorraine Marie Oginsky
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A DESCRIPTIVE STUDY OF MICHIGAN AUTO WORKERS' (UAW) PHYSICAL AND PSYCHOLOGICAL RESPONSES TO 1987 PLANT CLOSURES

by

Lorraine Marie Oginsky

A Dissertation
Submitted to the
Faculty of The Graduate College
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requirements for the
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A DESCRIPTIVE STUDY OF MICHIGAN AUTO WORKERS' (UAW) PHYSICAL AND PSYCHOLOGICAL RESPONSES TO 1987 PLANT CLOSURES

Lorraine Marie Oginsky, Ed.D.
Western Michigan University, 1994

A descriptive study (1991-1992) examined 166 closing and nonclosing UAW auto workers in two General Motors settings, as to how they cope mentally and physically with unemployment and displacement 5 years after plant closure and mass layoffs. Workers were asked the question, "Is job loss a threat, a loss, or a challenge?"

Lazarus and Folkman's (1984) Stress, Appraisal and Coping and the Stress Coping Model (Lazarus, 1980) provided the theoretical basis for this study. Measures included the investigator designed Plant Closing Questionnaire, Revised Ways of Coping (Folkman & Lazarus, undated), Hassles and Uplifts Scale (Lazarus & Folkman, undated), Coping Resources Inventory (Hammer & Marting, undated), and the Health Risk Appraisal (University of Michigan Fitness Research Center, undated).

Results of self-report surveys showed that the majority of workers claim satisfaction and have their lives in perspective. The majority said they had average to strong social support and did not suffer a personal loss due to job change.

Stress was measured as a process. Data were gathered from open-ended questions, with the results of the combined group showing the greatest difference in the reappraisal category.
Resources currently available to individuals for managing stress were identified.

Efforts are encouraged to cease smoking and decrease alcohol use, as well as increase exercise and get regular medical checkups. Although a majority stated they have coped better with stress, interviews indicated there is need for extended help.
ACKNOWLEDGMENTS

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I am grateful and say Thank You, Lord, it is finally finished.

Lorraine Marie Oginsky
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CHAPTER I

INTRODUCTION

A study examining the health related effects of large scale General Motors (GM) plant shutdowns in 1987 was conducted by Michigan Health and Social Security Institute, a research arm of the United Auto Workers of America (UAW). Three waves of analysis have been conducted with a fourth projected. This dissertation continued to focus on 100 members of the original group of closing plant workers (Fisher Body 1), who had been unemployed 40 weeks or more, and 66 displaced auto workers from a second group, the nonclosing plant workers (Buick), who may still be working temporarily, continue to be laid off, or are in the midst of a job career change.

This additional phase to the UAW study addressed the research questions of how GM closing and nonclosing plant auto workers coped mentally and physically with long-term layoff and explored whether auto workers considered unemployment a threat, a loss, or a challenge. One hundred closing plant workers were assessed 5 years after the 1987 permanent closure of Fisher Body 1 plant, as were 66 nonclosing plant workers of Buick City who had undergone long-term layoff, as to what stress they were experiencing, how they were coping, and what were their coping resources. Hassles and uplifts of the workers, as proposed by Lazarus and Folkman (1984), were explored and ranked as perceived by the workers. To complete the assessment, health status, life-style,
and risk behavior were examined through a Health Risk Appraisal offered by the University of Michigan Fitness Research Center (undated). Ninety-five workers were tape recorded for attitudes on job loss.

The stress and coping process investigated in this study was based primarily on a theoretical framework provided by Lazarus (1966), Lazarus and Folkman (1984), and Lazarus and Launier (1978). The model depicts cognitive appraisal as the prime factor in determining what is stressful and how the individual will cope with stress and secondary appraisal, which evaluates the significance of the transaction between the person and his environment and what this means in terms of coping resources or alternatives.

This study is of particular importance to local unions and officers, who guide workers on a daily basis on job issues, and to the Human Resource Center, joint labor-management service to UAW workers.

Two-year educational institutions, like Mott Community College of Flint, Michigan, that provide training, development, and apprenticeship programs for UAW workers, have also expressed interest in information acquired concerning auto workers so that content might be used for guidance and counseling purposes and adaptation to the teaching-learning needs of auto workers.

The Michigan Department of Health Promotion has expressed interest in the needs and development of programs for special interest groups, such as unemployed and displaced workers. The state is concerned with effects of unemployment and job loss on health, both for the workers and for their families. The Michigan Department of Mental Health, a department equally interested in long-term problems of special
groups, suggested focus on assessment of psychological effects of job loss and methods to alleviate stress associated with negative socio-economic conditions.

The Upjohn Institute of Kalamazoo, Michigan, a publisher of works concerning the declining auto industry and effects of plant closure on auto workers, sees this project as an extension of their previous publications on the auto industry and encourages further work on the subject matter of plant closure and displacement as Michigan undergoes major work related changes.

Michigan Health Care Educational and Research Foundation has supported this work through a grant and is also interested in the current status of workers in the deteriorating auto industry.

This study was designed to assess the extent to which differences in mental and physical health and coping processes reflect differential vulnerability to a common stressor, such as unemployment, and to assist related organizational structures, such as the local unions and the Human Resource Center, to influence the effects of a negative life event through heightened intervention and counseling. Further, this work provided a continuing mechanism for an in-depth study of small groups of unemployed or displaced auto workers over an extended period of time, and focused on the changing appraisal and reappraisal process used by the auto workers in adaptation to a major life stressor.

Context of the Problem

Few decisions in our society have more profound an impact than a decision to close a manufacturing plant. Plant closings are devastating
to workers, families, and communities. Individual, social, and economic costs, may be lost in the race for technology (Michigan Department of Mental Health, 1975). Attention should focus on the long-range implications of unemployment and social change and on the mental and physical status of the individual and his family (The National Assembly, 1987b).

In November 1986, General Motors announced the closing of 11 plants employing 29,000 workers. It was predicted that by 1990, 17,400 of the jobs lost would be in Michigan alone ("GM Announces Closing," 1986).

The year 1992 saw more plant closures and consolidations were fast becoming a reality. General Motors’ leader and chief, Robert Stempel, announced the closing of 21 plants by 1995 ("Robert Stempel: Report," 1992). Projections included closure of the V-8 Engine Plant in Flint, Michigan, which would eliminate 4,000 workers, and other auto plants as yet unnamed by GM. Michigan demonstrated an unemployment rate of 9.1% by December 1992, that included 415,000 people (Riegle, 1992b). These are just a few examples of what was happening to thousands of UAW members in auto, agricultural implement, construction machinery, and the parts supplier industry, as well as millions of other workers throughout the economy.

The nation’s picture was not much better. A total of 16.3 million Americans were unemployed (Riegle, 1992a). This figure, 7.1%, included 8.9 million unemployed; 1.1 million discouraged workers, which are not included in unemployment rates and are only calculated on a quarterly basis; and 6.3 million, which are part-time workers for economic
reasons (Riegle, 1992a). The most recent announcement of another major layoff of 27,000 workers in several locations across the United States by mid-1994 came from the aerospace industry ("Boeing Aircraft," 1993).

Bieber (1989) called unemployment and all of its effects the "terrible human cost" of plant closings. The reason for studying the consequences of plant closing is that plants will continue to shut down in increasing numbers with all of the consequences to the individual and society (National Mental Health Association, 1985). Further, with foreign competition escalating in the late 1980s and early 1990s and technological change rapidly increasing, industrial restructuring became necessary.

Consequences of unemployment affect individuals, families, and whole communities (Fagin, 1981). Most American workers gain access to health insurance coverage through their place of employment (UAW Constitutional Convention, 1986). Nearly 60% of laid off workers lost their coverage within a month of layoff. Workers who are lucky enough to get new jobs often have to wait months for new coverage to begin. Others, who get lower paying jobs, have no coverage at all. The UAW estimates that more than 200,000 displaced auto workers are affected. Unemployment exacerbates the lack of health care coverage for people in the United States, of whom 37 million have no coverage (Riegle, 1993). Social-environmental factors, such as these, can change human resistance to environmental diseases (Cassel, 1976). Years prior to that study, Friedman, Rosenman, and Carroll (1958) demonstrated how severe occupational stress was associated with increases in both serum
cholesterol and blood-clotting time, and that these changes could not be attributed to variation in weight, exercise, or diet.

Research Questions

The present study is designed to answer how closing and nonclosing auto workers in two GM organizational settings in Flint, Michigan, coped mentally and physically with unemployment and displacement, and answer the following questions:

Research Question 1: What levels of stress and processes of coping are closing, nonclosing, and the combined group experiencing as indicated by the Ways of Coping Questionnaire?

Research Question 2: What hassles and uplifts are described by closing and nonclosing groups, and what combined group results are stated on the Hassles and Uplifts Scale?

Research Question 3: What are the coping resources of closing and nonclosing workers and the combined groups as indicated on the Coping Resources Inventory?

Research Question 4: What is the life-style and health status of closing and nonclosing workers and their combined groups, and what preventive measures are used by them to improve or prolong life, as indicated on the Health Risk Appraisal Questionnaire?

Research Question 5: What is the status of closing and nonclosing auto workers and the combined group in 1991-1992, according to the Plant Closing Questionnaire, concerning jobs, seniority and security of employment, attitudes about self, social support, stress, self-satisfaction, is life worth living, Human Resource Center (HRC) services offered,
educational status, income, and savings. Also, do the workers regard the employment situation as a threat, a loss, or a challenge.

Operational Definitions

The following definitions are used in this research project:

Revised Ways of Coping (WOC) (Folkman & Lazarus, undated): The processes of coping with unemployment and displacement, emphasizing the role of stress, are measured through computer analysis by the Consulting Psychologists Press, Palo Alto, California.

A Combined Hassles and Uplifts Scale (Lazarus & Folkman, undated): Stressful events involving daily hassles and uplifts, rather than one-time life events, are measured in blue-collar closing and non-closing workers by the Research Department of Mott College, Flint, Michigan.

Coping Resources Inventory (CRI) (Hammer & Marting, undated). A tool measuring resources of workers currently available to individuals for managing stress and understanding potentials; computer analysis was by the Consulting Psychologists Press, Palo Alto, California.

Health Risk Appraisal (HRA) (University of Michigan Fitness Research Center, undated). Individual life-style and health characteristics of blue-collar closing and nonclosing workers are measured using a computerized test of health status and preventive behaviors.

The Plant Closing Questionnaire: Developed by the researcher with assistance from Michigan Health and Social Security (MHSS) Research Institute to assess the past and current status of auto workers and their families and ask the question, Is unemployment a threat, a
loss, or a challenge? Results tabulated by the Research Department of Mott Community College, Flint, Michigan.

**Closing plant auto workers:** Former Fisher Body 1 employees, including low-seniority individuals (under 10 years of service) who may have been unemployed 40 weeks or more after plant closure, have been laid off with little or no chance of recall to any GM plant, and are unlikely to find new employment at or near past monetary rates using their familiar skills. This category also includes high seniority workers (20 or more years) who have rights under a transfer agreement to go to Buick or other GM plants, in or out of the state of Michigan, including Tennessee, Indiana, or New York.

**Nonclosing plant auto workers:** This group includes primarily Buick Motor Car workers who are involuntary displaced workers whose plant or sections are temporarily or permanently closed, necessitating periods of layoff or in-plant transfers. Layoffs may have included those of short duration, from weeks to months, or long duration, one or more years on the case of a "K" release (one in which workers have no return date to work). In addition, workers may have been down for model changes, shortage of parts, engineering problems, or other complications in the manufacturing process.

**Combined group:** The joint group of auto workers, the closing and nonclosing groups, from two GM auto plants, Fisher Body 1 and Buick Motor Car.
Research Objectives

The purposes of this study are as follows:

1. To describe stress and coping processes of closing and nonclosing workers and the combined group through Revised Ways of Coping Questionnaire (Folkman & Lazarus, undated).

2. To describe daily hassles and uplifts of closing and nonclosing workers and the combined group through the Hassles and Uplifts Scale (Lazarus & Folkman, undated).

3. To describe coping resources of closing and nonclosing workers and the combined group through the Coping Resources Inventory (Hammer & Marting, undated).

4. To describe health status, life-style, and preventive measures used by closing and nonclosing workers and the combined group, through a Health Risk Appraisal (University of Michigan Fitness Research Center, undated).

5. To describe the status of closing and nonclosing auto workers and the combined group in 1991-1992 on the Plant Closing Questionnaire concerning jobs, seniority, security of employment, attitudes about self, social support, stress, self-satisfaction, and the question is life worth living, as well as HRC services offered, educational status, income, and savings as documented from the Plant Closing Questionnaire and interviews. Also, state if workers regard plant closure and the displacement situation a threat, a loss, or a challenge.
Conceptual Framework

One focus of the study is on a subset of mental and physical attributes seen in long-term, unemployed, GM closing plant auto workers and their counterparts, displaced but generally employed auto workers, the nonclosing plant. The conceptual framework for this study was taken from a stress-coping paradigm (Lazarus, 1980, Lazarus & Folkman, 1984), with emphasis on the coping processes and resources of workers and possible effects on health (see Figure 1). Lazarus's framework includes focus on the continually changing relationships between a person and the many variables in his environment. He has labeled the evaluation and reevaluation process that occurs prior to decision making, cognitive appraisal. From this initial appraisal, three outcomes are possible and include whether the event has no meaning and is irrelevant, whether it is a good or desirable event, or if the event is stressful. The latter event concerns a judgment on the part of the individual as to whether the event is one of harm-loss, threat, or challenge. Secondary appraisal follows and the person consciously applies coping strategies that he has used before and has found reliable (Lazarus, 1980).

The combined concepts of stress and coping perceived by Lazarus and associates and outcomes on health are important to the total study of the impact of unemployment on individuals and their families and the long-term effects on society as a whole. How a worker who has little control over his situation responds to unemployment and displacement is important for physical and mental health and well-being. The coping
Figure 1. Lazarus Stress Response Sequence.


process may best be understood by comprehending the degree of threat involved to the worker and what resources he has to master the threat (Lazarus, 1966).

According to Brenner (1977), there is at least a circumstantial link between unemployment and health problems. His work demonstrates
how periods of recession and high unemployment result in significant increases in illness, death, mental disorder, and criminal aggression. I. Bluestone (1989) concurred that social and economic change not only cause disruption in the lives of workers and their families, but heighten a change of negative health status, physically and mentally. For many years researchers have been trying to establish a causal link between unemployment and deteriorating health, and as yet, this has not been accomplished (Gore, 1978). However, it is still important to understand the burden of unemployment and health that is affected, as well as the social consequences of the situation.

Limitations of the Study

One researcher worked alone. The project required a significant amount of personal time, money for testing, place to carry out testing, and the need for many other resources that will remain unlisted. A consequence of this fact is prolongation of data collection. Data collection for this study was conducted from fall 1991 through fall 1992.

Self-report data were used throughout the study. Limitations of the self-report method are acknowledged and may include inadequate memory, retrospective falsification—which is a process of coping—and difficulties of precisely identifying the related health and unemployment problems (Polit & Hungler, 1978).

Another limitation may be the incomplete measurement of health status at periodic intervals throughout this study and the impact of fluctuation in physical and mental status over the years 1991-1992. However, base line health data were taken on the closing plant workers
at closure (1987) in the MHSS study, and health data were acquired by
the University of Michigan, Ann Arbor Campus, on nonclosing plant
workers in that same year. The literature documents downward trends
in health patterns over a period of many years (from 5 to 15 years),
following job loss and plant closure and encourages longitudinal studies
with periodic health assessments (Brenner, 1979).

A further limitation of this nonexperimental descriptive study was
the small size \( (N = 166) \) and the fact that it concentrated on one urban­
ized setting, limiting the generalizability of the findings to auto worker
situations in similar locations. Decreased external validity, therefore, is a
limitation of this particular kind of study (Borg & Gall, 1983).

This study required cooperation from persons over whom the
researcher had no control. Unless there is a rapport with subjects, some
may respond in random fashion or distort answers, as in the case of
stating drinking habits or drug use.

Auto workers involved in this project were concerned with an
invasion of privacy and there was fear by some persons that responses
could affect their jobs or result in the loss of the job.

Information given cannot always be referenced to external sources
and may only be accessible to the respondents.

The use of questionnaires and interviews may introduce the pos­
sibility of bias because of the interviewer-subject interaction. The reli­
ability and validity of this technique depends on the subjects' honest
responses.

The use of scales may promote a tendency for subjects to give
answers consistent with current social views. Subjects may express an
attitude at the extreme or agree with statements regardless of their content.

Subjects do want to engage in favorable self-presentation. Subjects who are aware they are being observed (during the interview) may behave atypically, and this could threaten the study's validity.

Research difficulty arose because of many uncontrollable factors within the workers' lives, such as numerous changes on the job--plant to plant or factory to factory, in addition to periodic layoffs. This created a need for workers to relocate--to either a new address for themselves or move in with relatives. Relocation may have been in the same state or other cities or states where GM work was available.

Rules and strict confidentiality protected workers from invasion of privacy and unauthorized use of personal information making workers' moves difficult to follow. New addresses were often unavailable at U.S. post offices, particularly after the date of expiration. Updated lists of currently employed workers were generally not released by employers, unions, or other related organizations, and were difficult to obtain.

The lack of availability of valid instruments was another constraining factor, particularly for specific populations, such as those in the auto industry. After searching the literature and tests in Prints I and II, and not finding adequate instrumentation, a Plant Closing Questionnaire was developed by the researcher and Michigan Health and Social Security (MHSS) Research Institute to collect general worker data and information pertinent for this study. Other instruments, including Revised Ways of Coping (Folkman & Lazarus, undated), and Hassles and Uplifts Scale (Lazarus & Folkman, undated), which may still be considered in the
developmental stages, have not been tried under all circumstances. Coping Resources Inventory is a newer standardized instrument (Hammer & Marting, undated). Difficulty was seen in the use of the Hassles and Uplifts Scale on the auto workers, where the subject had to think in opposing directions simultaneously in order to answer the questions. The workers debated how far to the right or left to go, and said it varied under changing conditions.

Another problematic area was that of plant closure research. Well designed, health related published studies are few and were just beginning to emerge in the late 1980s and early 1990s. Although some quasi-experimental studies are seen, such as that of MHSS (1987), experimental studies are prohibitive with this type of research. Longitudinal studies are deterred by cost. Action research directed toward specific problems is now gaining momentum. Both the early and late recessions of the 1980s have renewed interest in factors concerning unemployment--more studies are anticipated due to extensive and prolonged problems seen in plant closure.

No claim is made in this study that the framework is complete and accounts for all individual variations and antecedents seen in the unemployed or displaced worker. An attempt is made to depict a psychosocial portrait that will contribute to understanding the plight of the unemployed worker during a rapidly changing stressful life event, his means of coping and health status during this process, and to describe the Flint, Michigan, GM auto worker as seen is 1991-1992.
Overview

The purpose of this chapter has been to orient the reader to the background, purpose, and importance of this study. Chapter II contains a review of literature available on three related topics: (1) plant closures; (2) stress, health, and coping (in job loss and displacement); and (3) the future of work and health. Chapter III contains a discussion of the design and methodology used in the study. The findings are presented in Chapter IV. Chapter V contains conclusions and implications for future research on plant closures.
CHAPTER II

REVIEW OF THE LITERATURE

Introduction

In the past decade (1982-1992), the American society underwent tremendous technological change—an industrial society to an informational society. The process changed the meaning of work as it had been previously known. The rise of technology called for new community thinking and planning of health care strategies for the worker and his family (U.S. Department of Health and Human Services, 1986b).

The emphasis of this study concerned stress, health, and coping in GM auto workers that are displaced or are long-term unemployed from their jobs. The review of the literature included the following three categories: (1) plant closures; (2) stress, coping, and health; and (3) the future of work and health.

A general search of the literature was conducted at the University of Michigan, Flint Campus, and Flint's Hurley Medical Center, and covered a 12-year span—1980 to 1992. Key descriptors used were: plant closures, blue-collar workers in auto industry, long- and short-term effects of unemployment or displacement, stress as a general concept, stress effects on health of workers, stress in the workplace (business and industry), social support, coping, coping skills, coping behaviors, health life-style, life events, health promotion, self-responsibility, corporate health, labor laws, national policies and laws regarding
unemployment, public health, public policy, and social responsibility.

A manual search was conducted through the card catalogue. A search for the years 1980-1990 was also conducted in Psychological Abstracts; Sociological Abstracts; Resources in Education; Current Index of Journals, including health, social work, personnel, management, and related human resource topics; the Business Review Index; and labor and management materials.

Computer searches were conducted at Western Michigan University, the University of Michigan, and Michigan State University, utilizing the following databases from 1980-1990: Educational Research Information Center (ERIC), Data Courier Inc., American Business Index (ABI), Dissertation Abstracts, and Dialog. Hurley Medical Center provided a computerized search of Medline and Health Care indexes covering 1982-1992.

A review of related literature, including medical sociology, and a daily review of several newspapers and magazines, was helpful in drawing a psychosocial portrait of displaced and unemployed auto workers.

Terms

To clarify the research questions and assist with understanding the literature, the following terms are defined:

Bumping and skidding: When a new job puts the displaced worker back to work, he must often face a new working environment inferior to that of his previous job. This term is called "skidding" and has many implications that may involve a reduction in: wages, fringe benefits,
responsibility, safety, required skill level, required intelligence, experience, or training when taking a new job. Aiken, Ferman, and Sheppard (1968) have shown the skidding experience and its downward trend in social standing and position can cause workers to become more pessimistic about work, lower self-esteem, and cause interpersonal difficulties in everyday social relationships.

A skidding worker enters the lower-level job market with a distinct advantage over other people vying for the same job. Getting that job, the worker bumps someone else, who must then find another job on the same or lower level, intensifying existing job/worker pressure and creating even greater stress, anxiety, and pressure for everyone involved.

**Displacement:** The term displacement can technically be applied to auto workers of both Fisher Body 1 and Buick City, as well as other GM plant workers who have been removed involuntarily from their job for whatever the reason. However, for the purposes of this paper, Fisher Body 1 employees are referred to as closing plant workers, while Buick and any GM others are referred to as displaced workers or non-closing plant workers.

**Health:** There is no consensus on the definition of health. The World Health Organization defines it as "the state of complete physical, mental and social well-being and not merely the absence of disease of infirmity" (French, 1979, p. 1).

**Stress:** Stress has been defined as the "non-specific response of the body to any demand made upon it" (Selye, cited in Lazarus & Folkman, 1984, p. 15). It can be either negative or positive and can help people respond to the demands of their lives, as well as provide a
challenge that fosters growth and learning. Care is taken to differentiate between stress that people perceive as a challenge and stress that is debilitating and a threat to health and well-being. An alternative definition is an energy state set into motion in man as a response to exposure from challenging or demanding stimuli (Joos, Nelson, & Lyness, 1985).

**Stressor:** The causative agent of stress is a stressor. The term was originated by Selye (1974). In this study, the overall effect of unemployment (or its anticipation) and demographic characteristics and interactions with these demographics represent the effect of the stressor per se on mental and physical health.

**Coping:** Coping generally refers to successful adaptation to stressors, usually with the aid of psychological means. There can be positive or negative connotations to the term (Joos et al., 1985; Lazarus, 1966; Lazarus & Folkman, 1984). Lazarus and Launier (1978) further defined coping as "efforts, both action-oriented and intrapsychic, to manage (that is to master, tolerate, reduce, minimize) environmental and internal demands and conflicts among them which tax or exceed a person's resources" (p. 311).

**Adaptation:** The critical process of change or adjustment of a system in an attempt to deal with internal or external changes is called adaptation. A response of the system to change involves a new creative behavior and problem solving. Some use of the term adaptation includes maladaptation, that is, the system adapts self-destructively, or negatively (Joos et al., 1985).

**Decision making:** Decision making is the critical process of choosing which alternative action to use in functioning (Lazarus, 1966;

Appraisal: Appraisal is the first step in the process that involves decision making and judgments about a person's encounters with environment. It asks the question, "Am I okay or in trouble?" (Coyne & Lazarus, 1980, p. 153).

Reappraisal: This term indicating secondary appraisal, or the second stage of cognitive appraisal, is when a person's evaluation results in changes in his original coping attempt, and he says, "What can I do about it?" (Coyne & Lazarus, 1980, p. 153).

Vulnerability: This term indicates susceptibility to attack; capability of being wounded physically, mentally, or emotionally; susceptibility to the stress imposed (Brenner, 1979).

Coping skills: A type of coping skill commonly addressed at the work site includes cognitive skills, which involve changing the way one perceives and defines stressful events. These include personal beliefs, internal conversations, expectations, and evaluations one has about the pressures one faces. Other cognitive skills include exploring and evaluating one's response to stressful situations and creating more effective ones.

Health promotion: Health promotion is defined as the process of fostering awareness, influencing attitudes, and identifying alternatives so that individuals can make informed choices and change their behavior in order to achieve an optimum level of physical and mental health (American Hospital Association [AHA], 1979).

A second definition, and one of the best known, is offered by Green (cited in O'Donnell & Ainsworth, 1984), former director of the
U.S. Office of Health Information, Health Promotion, Physical Fitness, and Sports Medicine: "It is any combination of health, education, and related organizational, political, and economic intervention designed to facilitate behavioral and environmental changes conducive to health" (p. 658).

The Human Resource Center (HRC): The HRC is a joint management and labor center which offers multiple services to auto workers, including job training, psychological counseling, and referrals.

Guaranteed income stream (GIS): The union won GIS programs at Ford and GM, which assured availability of incomes to eligible, longer-service workers subjected to layoffs during the term of the new agreements. The income guarantees are available to laid-off, eligible workers until they reach age 62 or retirement, whichever is earlier. The eligibility requirements are generally similar at Ford and GM with the programs applying on an overall national basis to workers having 15 or more years of seniority at the time of layoff occurring during the course of new agreements (and to GM workers with 10 or more years of seniority in plants that are permanently closed). Workers meeting the seniority requirements must be able and available for employment service and must accept any employment with company or appropriate state agency.

The basic GIS benefit is 50% of the employee's hourly rate as of the last day worked, for those with 15 years' seniority (10-15 years at GM). For each year of seniority over 15, the rate increases by 1%. The maximum benefit is either 75% of the employee's weekly wage, or 95% of the employee's weekly after-tax base pay, minus $12.50, whichever is less. Health insurance and life insurance benefits are provided for
employees in the GIS program. Upon retirement, an employee in the GIS will receive pension and other retirement benefits even if the employee had lost seniority due to length of layoff ("Safety Nets," 1989).

Historical Background

Unemployment is not a new phenomenon to society and one of the earliest studies was carried out by the French sociologist, Durkheim (1897/1966). He suggested that an increased suicide rate was related to economic fluctuations. Durkheim predicted medical consequences to people who were torn from their usual care-taking persons when society moved from an agricultural to an industrial base.

Other studies followed Durkheim's interest in relating unemployment to deteriorating health through the depression years, and on to the present date, (Bakke, 1933; Brenner, 1976; Eisenberg & Lazarsfeld, 1938; Fagin, 1981; Flaim, 1973; Jahoda, 1979; Jahoda, Lazarsfeld, & Zeisel, 1933/1972; Komarovsky, 1940; Pilgrims Trust, 1938). One weakness of earlier studies, according to Jahoda, was the lack of a test period of sufficient length to establish a base rate for the effects of economic change on mental health and psychiatric admissions.

The classic study of the impact of unemployment on the community (Jahoda et al., cited in Colledge, 1982) was not presented for publication until many years after being undertaken and concerned an Austrian village during the Great Depression. The focus was that of a weary community, with families losing interest in events not pertaining to their most basic and vital needs. "A fading resilience of the village and its families was found, culminating in resignation and despair" (p. 1924). It
seemed that and unemployment identity spread to a whole community, with all of the consequent effects (Jahoda et al., 1933/1972).

Eisenberg and Lazarsfeld (1938) identified three phases of psychological response to unemployment: (1) shock and denial, followed by feelings of optimism and a holiday feeling, enhanced by high compensation payments; then (2) growing distress as the seriousness of the situation comes home and efforts to find work fail; and finally, (3) resignation and dispiritedness--the "unemployment identity." Similar stages of grieving were identified by Kubler-Ross (1973) in her work On Death and Dying and by Lindemann (1944) in his stages of grief associated with the study of the Coconut Grove fire.

More recently, important work has been carried out in the United States by Brenner (1977). He suggested that increased unemployment would be followed by increases in various forms of illness. Items identified by Brenner are a general rise in the mortality rate, ischemic heart disease, cirrhosis of the liver, suicide, homicide, and the rate of the first admission to a mental hospital. His work suggested there is at least a circumstantial link between unemployment and health problems. Other studies (Kasl & Cobb, 1979; Kasl, Cobb & Brooks, 1968; Kasl, Gore, & Cobb, 1975) showed those laid off had increased blood pressure, serum cholesterol, uric acid, and other changes in health. Warr and Jackson (1985) suggested that the unemployed are much more likely to become mentally ill than those with jobs.

Colledge (1982) called unemployment, or the threat of unemployment, an assault, not only on economic stability, but the deeper social roots of the individual. Colledge said the total lack of control felt by
workers over the situation, their inability to sell their labor, could be the largest single hazard to their health due to the stress generated. In attempting a sociological understanding of the impact of the recession on health and illness, Colledge reviewed Brenner's (1977) studies. Brenner's hypothesis, that pathological actions follow increased unemployment, and that reactions will be dispersed over time, state that there will probably be a time lag between the stress of being unemployed and the onset of illness. Colledge reviewed other related studies and stated there is a common thread that emerges, one of loss of self-esteem, that is directly related to the loss of work with all of the consequences that follow, like reduction in status, income, and sense of purpose.

For many years researchers have been trying to establish a causal link between unemployment and deteriorating health, and as yet this has not been accomplished. However, it is still important to understand the burden of unemployment with health and social consequences of the situation (Gore, 1978).

Plant Closures

Plant closures are a very complex issue to which there is no single answer. Decisions to reduce work force or relocate operations in a competitive global world market are based primarily on economic factors that include necessity for productivity, changes in prices, consumer choices, production technology, current usefulness, and efficiency of plant operations (Haas, 1985). American workers of the past decade, 1982-1992, experienced losses of jobs through displacement, permanent massive layoffs, and/or plant closures. It is a phenomenon likened
to death, with many workers undergoing the stages of grief and grieving (Colledge, 1982).

Between January 1979 and January 1984, 11.5 million were displaced because of plant shutdowns and relocations, rising productivity, or shrinking out (UAW International Union Community Services, 1988). Further, GM announced that a total of 21 plants will be closed by 1995, idling thousands of workers (Stempel, 1992). Additional layoffs in the auto industry continue at an accelerating rate and will continue through the 1990s, with target plant’s names to be released in the future (Stempel, 1992).

The event of plant closure and resulting unemployment in the auto industry is similar to what occurred in the agricultural implement business, where farmers lost their land and equipment because of the rapid decline in the market for their goods. Data show that manufacturing workers have been harder hit than fellow service workers and that there have been a disproportionate share of closings and mass layoffs in the Midwestern and Northeastern regions, even during recovery periods like 1983-1984. Worker displacement, then, is not a one-time event, it is an ongoing phenomena (UAW, 1992a). Statistics in 1991 showed the economy stagnating with a large part of the work force, 8.6 million workers, unemployed; 5.9 million working part time for economic reasons; and an additional 997,000 discouraged workers (UAW, 1992b). The closing report of the year (Riegle, 1992a) showed an increase in unemployment to 8.9 million unemployed, and 16.3 million Americans unemployed totally, including the discouraged and part-time workers.
Plant closings and other economic dislocations extract a heavy price from working people, their families, and communities throughout the nation (Gordus, Jarley, & Ferman, 1981). Beyond economic hardship, the incidence of stress-related health and psychological disorders rises, ranging from heart disease to alcoholism and even suicide (National Mental Health Association, 1985). Many suffer not only immediate wage losses, but also pay cuts due to being forced to accept part-time employment in lieu of full-time work. Others are forced to work in service industries that do not pay a comparable wage. Most workers lose health care benefits, pension benefits, and seniority. The enormity of the stress of displacement and job loss takes a toll in decreased mental and physical health, increased use of alcohol and drugs, family abuse, and feelings of despair and bitterness (Gerhart, 1987).

Interest in the problem of plant closure, according to the literature, has generally taken two directions. The first method of assessment is to measure and describe the consequences of the decision to close. The second avenue is to look at the alternative courses of action available to various groups and individuals, like the government, employers, or employees, and to find ways to alleviate the consequences of closure or propose alternatives (Gerhart, 1987). The management of this study is to look at the consequences of plant closure to the individual, and how he copes with a major life transition—displacement, job loss, and long-term unemployment.

The best cure for plant closures and job loss is prevention, and short of that to have a comparable job with competitive pay. Change and growth in the workplace is inevitable and will transpire regardless of
man's interventions (Gordus et al., 1981). The prime focus, then, is not to stop progress, but to assist man in coping and adapting to change--for Americans that will not be an easy transition (Naisbitt, 1982).

Americans were warned that they must adjust to living in a world of interdependent communities and a world economy (Naisbitt, 1982). In the 1960s the United States had about 25% of the world market share in manufacturing, and American companies produced 95% of the autos, steel, and consumer electronics sold in that year. Today, facts have changed considerably, and the deindustrialization of America has brought the country from a position of world leader in industrial power to the position of competitor with Japan, and other countries of the world (I. Bluestone, 1989).

Several trends have evolved that will shape the world auto industry (Naisbitt, 1982). First, the United States no longer retains position as the major auto maker. Japan has rapidly advanced, and in 1981 ranked highest by exceeding United States' auto production by 40%.

Secondly, stated Naisbitt (1982), the trend is toward global saturation in the auto industry. There are auto assembly lines in many other countries, like Mexico, which are fast becoming major auto producers. The third trend, he stated, is that many automobile companies are not going to survive as they have been previously known. They will move into cooperative arrangements and joint ventures. Some will go toward mergers, buyouts, and bankruptcies. Naisbitt commented that the automobile manufacturing business is rapidly moving toward the first globalized industry. The final trend projected by Naisbitt was the movement of the Japanese automobile plants all around the globe. In
1981, Japanese auto imports had already captured 30% of the U.S. auto market, and the following spring, imports accounted for 70% of the autos sold in the state of California (Naisbitt, 1982).

The United States is not alone in the bleak unemployment picture. Economic decline has brought about similar conditions in other countries, and in some areas, frank stagnation. Great Britain has long suffered from the heavy statistics of long-term unemployment and recognizes that unemployment does have a direct relation to ill health, not only for the individual, but for the rest of the family as well (D'Arcy, 1986). Australia, Denmark, Sweden, and Canada as well as countries all over the world also reflect the negative effects of redundancy, but some have found innovative ways to handle the problem.

Plant closure and displacement, despite the change in the worker's lives, can be handled in either a positive or negative manner by plant officials, as illustrated in the following examples. The closing of the Mack Plant of Plainsfield, New Jersey (Dorsey, 1967) was handled with negativity and even malice. The work force itself seemed to influence the company's decision to relocate; and as a result, management attempted to leave as many workers behind as possible rather than transfer them and their problems to the new site. As labor-management disputes continued, the company's profit, position, and place in industry deteriorated. The Mack Truck company shut down operations in the engine and transmission manufacturing plant permanently, and relocated operations to Hagerstown, Maryland, on October 31, 1961. The final ratification and transfer agreement included the fact that Mack was only committed to take less than 0.1% of the former Plainsfield hourly
employees to Hagerstown—an agreement strongly protested by workers, and one that created much anguish.

Plant closure problems at Mack were not unique, nor are negative type case handling confined to a specific era and time. Many plant closures have a history of being handled poorly, leaving concerned parties distressed and distraught (Root, 1979).

More recently, in 1992, Gerber Products also encountered problems with plant closure. The company left facilities in three states and went overseas due to rising labor costs and environmental concerns about disposable diaper products. The Chairman of the Gerber Company reflected that "Gerber is taking this action to improve its long-term profitability. This decision regrettably cost some people their jobs" ("Gerber Trims Output," 1992, p. A-1).

The JLG Industries, another major employer in McConnellsburg, Pennsylvania, laid off workers from a $6.90-an-hour job, and they lost health benefits in the process. Workers despaired of finding another good job in the vicinity and said, "To find work, you have to travel over the mountain. And for minimum wage, it's not going to pay your bills" ("JLG Industries," 1992, p. 15).

The changing economy and downward trend of the 1990s has affected workers everywhere, from Illinois, where 6,800 Caterpillar jobs were lost due to falling sales and a strike, to Willow Run, Ypsilanti, Michigan, where estimates are that 2,600 plant jobs will be lost with permanent plant closure, as well as 14,000 related jobs in the supplier and support industries ("Closing Willow Run Plant," 1992). General Motors' announcement to shut one-sixth of its North American payroll
could also bring a bleak forecast to another state. Ohio has more than 1,000 GM suppliers, with 100 in the Dayton area alone. GM's 16,600 hourly workers represent about 26.4% of the Dayton area's production jobs, according to July 1991 figures from the Ohio Bureau of Employment Services (cited in "U of M Forecasts Bleak Future," 1992).

Plant closure that is well planned and gives workers effective notice and assistance can engender less trauma to the individual and his family, and contribute to his physical and psychological well-being. Legislation in the 1990s regarding 60-day plant closure notice has assisted in protecting the worker from unannounced or short warning closure of plants, but problems still remain.

A positive method of plant closure was illustrated by the Armour Plant, March 1968, at the Omaha and Iowa site (Root, 1979). Omaha’s 1,637 workers and community benefited from almost a year’s early notice of plant closure, plus a 3-month extension of operations that was requested by community leaders. In addition, the company offered a complete and comprehensive manpower training program. The Mason City closure of Armour plants was notable for its focus on family—a point seldom considered in plant closure.

Armour was unique in that they allowed office use and assistance, in-plant counseling, participated in training programs, and subsequent placement of former employees. Other businesses were encouraged to hire displaced workers. Closure was delayed by 90 days and permitted workers who found employment or wanted to enroll in federal training courses the opportunity to begin before actual closing of the plant, without loss of severance pay. While the closing of Armour plants
demonstrates a positive relationship between management and labor, it is not typical, but does show what can be accomplished by a plant and community seriously working together.

The projected closing of Willow Run plant, Ypsilanti, Michigan, in 1992 was another negative example, where relationships of Michigan workers were pitted against Texas workers, as to who could offer the best incentives for the company to locate in their community ("Closing Willow Run Plant," 1992). A legal case followed the Willow Run closure notice to determine rights of the company to move versus rights of the workers to maintain their jobs and keep open the plant. As yet, the problem has not been resolved.

Although many issues remain to be solved, and more legislation must be developed at the local, state, and national levels concerning plant closures and protection for the workers, actual closing procedures usually occur somewhere between these extremes and reflect the unique preference of management as to what constitutes transfer agreements, severance pay, early retirement, or other facets of the agreement. The closure of Flint Fisher Body 1 plant in 1987 is illustrative of that fact (Officers and Former Officers of Fisher Local 581 and Buick Local 599, 1991-1992). In 1992, however, there was still no uniformity and standardization to the plant closing procedures despite some in-roads made in recent years. Decisions and content of the process remain as diversified as the administration that handles them.

Reno (cited in "Bill Reno," 1987), former Local 581 president, now UAW International representative, told Fisher closing plant workers at one meeting:
There isn't a good agreement negotiated if it's not going to save your job, I know that. But there's a lot of things in there that give you something. . . . I know the anger you feel, the disappointment, the disillusionment. But GM is closing this plant, let's don't forget that. (p. A-1)

The year 1987 was notable in other ways than just the closing of Fisher Body 1. Continuing declines in manufacturing employment boosted the Flint area's jobless rate to 13.7% in August of that year, and joblessness was expected to get worse due to GM and other plant closures. Weaver (cited in "Bruce Weaver," 1987) a Michigan Employment Securities Commission (MESC) analyst said: "The area's employment in transportation equipment and manufacturing industries—where GM dominates—declined by more than 22,000 jobs between August last year and this year" (p. A-11). By December 1987 the unemployment rate in Genesee County was 12% and St. Cyr (cited in "Bruce Weaver," 1987), a MESC analyst, predicted the jobless rate would rise to even 20%. Included in this figure were 3,000 Fisher Body 1, the closing workers, who were laid off permanently on December 10, 1987, and 2,300 hourly and salaried workers indefinitely laid off at Flint's Buick City on October 9, 1987, ("Bruce Weaver," 1987).

In addition to the impact of plant closures, the exit of millions of jobs from the United States to Mexico and Third World countries caused great public concern (UAW International Union, 1991). Displaced workers who lost their jobs because of national trade policies could count on only short extensions of compensation instead of long-term assistance they really needed. New employees of poor countries are often only given minimum wages for their labor; some are forced to work under inhuman and intolerable conditions, as in Mexico.
The 1992 American Jobs Protection Act (HR 3878) was directed at deterring companies from closing plants in the U.S. to take advantage of low wages and weak workplace regulations in foreign countries. The new legislation required that an employer pay extended health insurance, special pension benefits, and substantial severance benefits for workers whose jobs are lost when a firm shifts production to a low-wage, low-standard country. Bieber (cited in UAW, 1992a), president of the International Union, said:

It would prevent workers being plunged into the poverty and despair that often follows the loss of a job in America. And it would place the cost of preventing this where it belongs: with the employer that stands to benefit financially from the transfer of jobs to Mexico. (p. 1)

The reason plants close are often a part of a corporate strategy to improve profits or to eliminate subprofitable plants (Gordus et al., 1981). Capital gain, they said, is no longer being invested in the United States, but in foreign countries or enterprises. What is worse, the researchers stated, is that some plants do not even offer a reason for closing. They concurred that consequent job loss and impact from unemployment can be very serious to the health and well-being of workers and their families. The question from stress and adaptation theory may be, Can the increasingly vulnerable individual and his family cope alone with the process of rapid technological change or must social policy be established to help the individual in crisis? The plant closure strategy of the 1980s and 1990s raises more questions than answers.
Stress, Coping, and Health

How man copes and masters stressors in his life has been the question of many scientists over the decades. Historically, stress and stress response has been widely studied as a biological concept and documented by many, including early works of Cannon (1929), Wolf & Wolff (1942), Wolff (1953), and Wolff and Goodell, 1968). More recently, the physiologically based theory on stress and adaptation has taken precedence (Selye, 1956, 1974, 1976). The literature has been further advanced in the last 30 years by the works of Lazarus (1966), Lazarus and Folkman (1984), and contemporaries, who have taken the role of stress and viewed it as a dynamic cyclic process that is ever changing due to appraisal and reappraisal, and then followed by resultant changes in the coping and adaptation process.

Other contributors to the related field of stress and coping are Pearlin and Schooler (1978), Gore (1975), Billings and Moos (1981), Antonovsky (1987), and Dooley and Catalano (1980). The latter type research relates life changes for individuals with the onset of illness and other problems. A thorough review of physiological and psychological effects of stress and life changes in individuals was noted in Dohrenwend and Dohrenwend (1974) and Goldberger and Breznitz (1982).

Despite proliferation of conceptual meanings of coping in the decade of the 1980s and interpretations of the effects of life-strains and related concepts, it appears not enough is known in the literature about individual response to displacement and unemployment and effects on health, particularly in the automotive industry. More knowledge is
needed about stress as workers perceive it, broad psychosocial aspects which include effects upon the community, coping skills used by workers, and processes used by workers that alleviate the condition. Consideration must also be directed toward special groups, such as youths, blacks, and women and their unique concerns.

The terms stress and coping have many meanings. To avoid confusion, this study used definitions included in the works of Lazarus (1966, 1980); Lazarus, Averill, and Opton (1974); and Lazarus and Folkman (1984). Stress includes "any event in which environmental or internal demands (or both) tax or exceed the adaptive resources of an individual, social system or tissue system" (Lazarus, cited in Monat & Lazarus, 1985, p. 35). "Coping refers to efforts to master conditions of harm, threat, or challenge when a routine or automatic response is not readily available and it directs attention to the process of adaptation which can be either positive or negative" (White, cited in Monat & Lazarus, 1985, p. 5). It directs attention to the process of adaptation, which can be either positive or negative. Further, coping is the process through which the individual manages the demands of the person-environment relationship that are appraised as stressful and the emotions they generate (Lazarus & Folkman, 1984).

Lazarus's (1980) model depicts cognitive appraisal as the prime factor in determining what is stressful and how the individual will cope with stress. The stress-coping paradigm, a group of interrelated assumptions, gives information about certain categories of phenomena to be studied, and guides in methods and procedures for observing phenomena (Bond & Rosen, 1980).
Lazarus's theory of stress-appraised events (Figure 1) is further developed in the Stress-Coping Model (Scott, Oberst, & Dropkin, 1980) depicted in Figures 2, 3, 4, 5, and 6.

![Stress-Coping Model Diagram]

Figure 2. A Stress-Coping Model: Stress-Coping Process Over Time and Events.


Lazarus and Launier (cited in Burrell, 1992) believed that primary and secondary appraisals result in three evaluative forms:

1. Irrelevant appraisal exists if the appraised event is considered to be of no concern for the person's present well-being.

2. Benign-positive appraisal exists when the person regards the event as indicating a positive state of affairs—that all is well.

3. Stressful appraisal consists of some negative evaluation of ones present or future state of well-being. Stressful appraisal occurs in three forms.

   a. Harm-loss refers to damage or injury that has already taken place such as loss of physical function
Figure 3. A Stress-Coping Model--Primary Appraisal.


(deafness, limb amputation) or a loved one (death or divorce), or loss of social status or self-esteem (loss of one's job or loss of respect for oneself).

b. Threat refers to harm or loss that has not yet occurred, but is anticipated, such as the potential loss of a breast from cancer or possible divorce because of marital discord.

c. Challenge is a situation in which the opportunity for growth, mastery, or gain is perceived. In the appraisal of challenge, the individual perceives a potential harm in the transaction between self and environment, yet there is a positive rather than a negative tone in the transaction. In other words, the person is taking a calculated risk for the sale of potential gain. Examples are taking on the responsibilities of a new career or beginning college. (p. 62)

A major problem in the assessment process, according to Lazarus and Folkman (1984) is that emotions are viewed as causes of stress
responses, instead of effects of these responses. Stress and coping are both processes, not events, and they change over time. Stress, generally is viewed in three major classifications: physiological, psychological,
Figure 5. A Stress-Coping Model, Coping Phase 2: A Secondary Appraisal.

Figure 6. A Stress-Coping Model: Helical Process of Coping and Adaptation Over Time.

and social. Response to stress can be interpreted as adaptive or mal-adaptive. Coping involves the act of responding to stress (Monat & Lazarus, 1985).

The term coping also refers to "behavior that protects people from being psychologically harmed by a problematic social experience, a behavior that importantly mediates the impact that societies have on their members" (Pearlin & Schooler, 1978, p. 2). The researchers believe that coping behavior can be used in three ways: (1) by doing away with or tempering the conditions giving rise to problems, (2) by mentally handling the problem so as to neutralize the meaning of the experience, and (3) by keeping the emotional consequences of problems within manageable bounds. Like other theorists in the coping field, Pearlin and Schooler agreed to the basic assumption that people are continuously responsive to forces that impinge upon them. Since many of the forces encountered are social in their origins, understanding of coping is fundamental to understanding the impact that societies come to exert on their members.

The way stress affects people and how they respond was further developed to include the concept of daily hassles and uplifts, which are believed to contribute to health and disease (Lazarus & Folkman, 1984). In contrast are life events, a major event that may occur one time, such as divorce or death (Holmes & Rahe, 1967). Daily hassles are minor life events that everyone experiences (Lazarus & Folkman, 1984). Hassles are irritating, frustrating, and distressing demands of daily living. They can occur independently from major life events, but the larger events can affect the person's patterns of daily hassles.
How a person copes is affected by the number of daily hassles and how one feels (emotional significance) toward the hassles (Lazarus & Folkman, 1984). Men and women differ in response to daily hassles and daily uplifts. When men experience a significant increase in life events, hassles also increase but uplifts decrease. Women may also experience an increase in life events, but when they do, they experience an increase in both hassles and uplifts. Men experiencing multiple life changes seem to receive less emotional buffering from others and consequently fewer uplifts than women (Lazarus & Folkman, 1984).

Some people seem to intensify hassles due to poor coping skills (Lazarus & Folkman, 1984). Self-generated hassles, secondary to coping ineffectiveness, may be more harmful to a person than hassles that occur from chance circumstances. They seem to recur and are chronic in nature, as opposed to those resulting from chance circumstances. Daily hassles are more significantly related to illness than are major life events (Lazarus & Folkman, 1984). The researchers also found that frequency of daily hassles contributed more to the onset of illness than the intensity.

The opposing side of the hassles theory is daily uplifts. These are positive experiences of daily living and buffer people against too much negative (Lazarus & Folkman, 1984). Uplifts can include strong social support, having significant others in which to confide, belief in prayer, having enough rest and relaxation, good health, sufficient money to conduct life in a reasonable manner, and being able to meet one's responsibilities. Uplifts are the "breathers" from the regular daily hassles encountered (Lazarus & Folkman, 1984). Uplifts interrupt the intensity
or frequency of the hassles by providing "time out" (Lazarus & Folkman, 1984).

The focus of this study was to explore physical and mental health status through the concepts of stress and coping in plant closure and displacement. Four major studies addressed these issues (Brenner, 1979; Fagin, 1981; Gore, 1978; Kasl & Cobb, 1979), as well as the study by MHSS (1987). A variety of designs was noted throughout the literature review, including the longitudinal type, one infrequently seen in the literature; quasi-experimental, including case and panel studies; and descriptive studies. Those studies selected address susceptibility and potentiality of the unemployed and displaced to increased health risks and analyze health status at various periods of time during unemployment. No studies evaluated workers several years post plant closure, for example, 5 to 10 or more years.

Brenner (1979) spoke of the traditional pattern of unemployment and of special vulnerability of those working in industries whose goods or services were not essential in recessions. He maintained that people with the least skills and seniority are the first to lose jobs and the last to get jobs back when the economy improves. Brenner contended that people who find that one change in the business cycle renders skills obsolete, and are no longer needed, are also at high health risk. This problem often falls to the lower socioeconomic group today, but can affect any classification of worker from top manager to laborer.

There is a consistent relationship between socioeconomic status and mortality, emphasized Brenner (1979). A higher income or occupational level and additional education seem to alter the mortality rate.
The ability to diversify, he stated, allows some workers to get another job and not suffer long-term unemployment. The role and relationship of social support concept and social policy also come from Brenner's (1977) work, where he demonstrated that for every 1% rise in U.S. unemployment, there is a corresponding rise in homicides, suicides, deaths from cirrhosis of the liver, divorce rates, and admissions and re-admissions to mental hospitals.

Downward social mobility is also a factor associated with the illness process beginning with the recession (Brenner, 1979). There is a lag time of 2 or 3 years for cardiovascular mortality, stated Brenner, at which time the advent of mortality greatly increases—an effect that can last for 10-15 years. Therefore, he contended, the reason for planning well-coordinated long-term longitudinal studies of the unemployed, spanning several years to cover this period, seems imperative. Yet, few studies are done that include changes in time, particularly in the health of the individual. Cassel (1974) warned the community that disrupted social ties affect the body’s defense system, thereby rendering the individual more susceptible to disease in general. Hinkle and Holmes (1961) stated that perception of the environment as threatening leads to a greater amount of disease of all kinds.

In the second study, Fagin (1981) contributed to understanding unemployment and effects on health and the family, too. His case work studies were based on family interviews and offered evidence that job loss is the factor most closely associated with physical and mental illness among families of unemployed workers. Fagin urged professionals to focus on mental health work specifically targeted at the
unemployment syndrome, or policies that promote employment.

Most families, stated Fagin (1981), consider unemployment an extremely unpleasant experience and feel that stress might be the fundamental process by which unemployment could lead to ill-health. A time relationship is evident between changes in health and experiences of unemployment. Health changes not only affect the individual, but other family members, too. Each member of the family responds to stress in a manner that has been used in the past, but those with a strong constitution called "hardiness" seem to survive better (Antonovsky, 1987; Kobasa, Maddi, & Courington, 1981). Some unemployed and displaced persons have less health problems than anticipated--the loss of a job can also be a relief from a burden (Fagin, 1981).

The third major study on plant closure, a longitudinal investigation of health and behavioral effects of job loss or change experience, was conducted over a 2-year period (Kasl & Cobb, 1979). Two plants, one urban and one rural, were viewed as to permanent shut down with all employees about to lose their jobs. Concerned issues were stages of anticipation of job loss, plant closing, and employment termination, unemployment, probationary employment, then stable reemployment.

The target population was limited to male, blue-collar workers at the two plants (Kasl & Cobb, 1979). All subjects were married, in the age range of 35-60, and had worked at the company at least 3 years. Included were visits at specific stages by public health nurses who collected blood and urine specimens and measured blood pressure, pulse rate, height, and weight. A structured interview and questionnaire were used to collect diverse social-psychological and health data. Interviews
included current employment situation, economic circumstances, a subjective evaluation of the job and financial situation, mental health and affective reactions, and physical health.

Differences occurred between the urban plant and the rural plant workers and this, according to Kasl and Cobb (1979) was perhaps due to attitudes toward the meaning of work, differences in social support, or other unknown variables. The researchers acknowledged urban-rural differences in response to job loss, but made no attempt to understand the reasons for the differences. The real challenge and need, they stated, is to develop objective measurement procedures for subjective constructs and to develop more complex data analysis strategies, so that both objective and superficial indicators can reveal better meaning for particular individuals. Perhaps the most valuable outcome of the study was identification of adaptation to prolonged unemployment following an early period of stress and the fact that those undergoing more than one unemployment experience appeared to fare the worse.

In the fourth study, Gore (1978) applied the concept of social support in moderating health consequences of unemployment to plant closure workers. Her study concerned two plant shutdowns and 100 employees, who were followed over a 2-year period. Higher elevations and more changes in measures of cholesterol, illness symptoms, and affective responses were found in nonsupported employees than in the supported. The study stated that good support seems to strengthen ego, enhance self-esteem, and alleviate the psychological stress of unemployment (Gore, 1978).
Social support, a variable that appears in most stress-adaptation models, has been a concept of growing concern as a strong moderating factor of response to stress (Antonovsky, 1974, 1987; Cobb & Kasl, 1974; Gore, 1978; Mechanic, 1974; Moss, 1973). Although the mechanism through which social support interferes with the illness response to stress is not identified, it is known that support increases coping ability. Further, persons with adequate social support have a greater likelihood of a positive outcome in major life transitions, whereas persons with inadequate social support and no effective intervention appear to have a greater likelihood of a negative outcome (Norbeck, 1981-1982).

Although it is beyond the scope of this paper, further research is needed to clarify the age, sex, and personality differences that influence the individual needs for social support and to determine just how much social support is needed, what quality, and for how long. Drawing of sociograms in the assessment process is recommended in the literature and may assist understanding relationships and contribute to efficacy in counseling.

The final study reviewed (MHSS, 1987) was important to UAW workers of Michigan as it reflects stressful times in the life of auto workers and views initial effects of plant closing on mental health, as well as documents financial status and other effects of closure. Like other studies of the decade, the concept of stress is acknowledged but noted for its ambiguity. Vulnerability of the worker to environmental stress was the major concern of the researchers. The first phase of the study included gathering baseline data in face-to-face interviews about 3
months before Fisher Body 1 closed, concerning information on workers' financial status, mental and physical health, family stress, social support, life events, employment history, and future plans. A comparison group of 12 nonclosing GM plants in the Detroit and Flint community were interviewed. Subjects (N = 1,597) completed a self-administered booklet concerning a series of problems and complaints—mental health symptoms drawn from the Hopkins Symptom Checklist (HSCL) (Derogatis, Lopman, Rickels, Uhlenhuth, & Covi, 1974). For further information on Michigan Auto Workers and the unemployment experience, readers are also referred to Gordon, Schervish, and Bluestone (1985).

In summation, health effects of plant closure and displacement demonstrates much evidence exists that stress and stressful life events can lead to physical disease, mental illness, and other types of disorders. No attempt has been made by this author to cover all situations of stress. Extensive reviews are available in Dohrenwend and Dohrenwend (1974), Goldberger and Breznitz (1982), and Dooley and Catalano (1980).

More evidence is needed on the coping ability of the blue-collar workers, their coping processes, and long-term effects on society (Michigan Department of Mental Health, 1975). The article stated that being unemployed is not just having lost a job or being displaced. For many, there is a personal loss of identity, a loss of self-esteem, a feeling of depression and dejection at being unwanted and worthless. Permanent unemployment and frequent displacement may change the entire
meaning of work in a man's life; in turn, this may be crucial to one's mental health and well-being (Gordus et al., 1981).

The Future of Work and Health

The United States has been in the midst of far-reaching structural changes since the 1980s and this will affect the world of work and health care for the worker and his family ("What the Next Fifty Years Will Bring," 1983). Health care rationing will be one of the major health care issues of the 1990s due to rising health care costs. The Employee Benefits Research Institute in Washington stated employers now pay, on the average, $3,605 annually per worker for employee health plan, not counting employee contributions ("Fringe Benefits Today," 1993). As a result of local, national, and global changes in the world of work, business and industry will need to face a broader social role in assisting people in adaptation to new ways of thinking and living (O'Donnell & Ainsworth, 1984). The following issues are reviewed to assist understanding long-term effects of change in the workplace and implications for health care.

First, workplace change and worker growth are anticipated--from 115 million workers in 1985 to between 141 million and 153 million workers by the year 2010 (U.S. Department of Labor, Bureau of Statistics, 1986).

Along with this increase, changes in technology will shape the future demand for labor. Industries that produce services will account for about 90% of new jobs created in the 1990s (U.S. Department of Labor, Bureau of Labor Statistics, 1985). Service jobs will offer less pay
than manufacturing jobs, and many jobs of the future will be part-time work and have no health care benefits. Health care rationing will be one of the major issues of the 1990s as society becomes aware of the rising price tag (Hope Heart Institute, 1990). Medicaid programs, designed to provide health care to the poor, already find millions of Americans who do not qualify for even the most basic services, like prenatal care (Hope Heart Institute, 1990).

Secondly, technology will continue to create dramatic changes in the workplace. The movement to global free trade is driven by an alliance between telecommunications and economics that permit corporations to communicate with a business office anywhere in the world through computers that talk and televisions that handle hundreds of channels ("What the Next Fifty Years Will Bring," 1983). On December 14, 1988, the first fiber optic telephone cable came across the Atlantic and went into service. This new cable tripled the volume of copper cables and satellites (Naisbitt & Aburdene, 1990). Telecommunications and computers, stated Naisbitt and Aburdene, will continue to drive change, just as manufacturing did during the industrial period. As a result of electronic advancements in computers and videos that create classrooms at any location instantly, industry has become more involved in education and job training.

The advantage of increasing technology to the corporation has been productivity gain and greater increase of profits (Haas, 1985). The disadvantage in the workplace was that fewer people were needed to do the work, and more workers who were left with obsolete skills found themselves unemployed or shifted to jobs in the service sector. As
workers were replaced by machines, some felt devalued as human beings (National Assembly, 1987b).

Free trade has become an important issue when viewing the global economy. The positive view states that in order to have one marketplace in which to work, there must be free trade among nations (Naisbitt & Aburdene, 1990). In 1988 the United States and Canada dropped all trade barriers. Similar agreements are being worked out with Mexico in 1992. Australia and New Zealand's free trade agreement went into effect December 1988 (UAW International Union, 1991). Some misinterpret these trends negatively, according to the UAW. U.S. manufacturing workers will now have to compete directly with laborers in other countries. Many American jobs have gone to Mexico, where wages can be as low as 59 cents an hour (UAW International Union, 1991). The UAW stated, "the trade deficit steals from an already declining pool of well-paid manufacturing jobs. Millions of American workers and their families have suffered reduced living standards as a result of the continuing trade deficit" (UAW, 1992b, p. 15). The UAW further stated that since each billion dollars of U.S. exports generates about 25,000 jobs, the estimated impact of the $105 billion deficit is the displacement of more than 2.5 million Americans from jobs in trade-related industries (UAW, 1992b).

An example of job loss to Mexico and ripple effects concerned 2,000 Trico workers, Buffalo, New York, who lost their jobs making wiper blades when the company set up a plant in Matamoros, Mexico. Seventy-five thousand other American jobs also went to Mexico and allowed Mexican workers to make wiring harnesses, engines, electronic
equipment, and fully assembled vehicles. The multi-national corporations, stated the UAW, set up modern plants in these countries, paid extremely low wages, and escaped environmental and other regulations in the U.S.

It's not just the jobs that will be lost directly that concern the UAW. Low-wage competition from Mexico will increase pressure on U.S. workers to lower our wages, and on U.S. communities to lower our environmental, worker compensation, minimum wage, and other social standards that we have fought so hard to get" (UAW International Union, 1991, p. 7).

The culture of work also changed due to shifting values. Foreign competition erased millions of jobs in the 1980s, and employers cut down on pay or withdrew benefits for the employees they kept (UAW International Union, 1991). GM is making fundamental changes in the way it runs its business (Stempel, 1992). Lean production and downsizing of operations is an important issue at General Motors Corporation and affects all aspects of the auto industry: from the assembly factory floor to supplier relations to distribution and finance. "General Motors will run its business in an increasingly lean and responsive manner" stated Stempel (1992). The main components of the lean system are that buffers for rework are greatly reduced; suppliers are treated as "partners" of the vehicle assemblers; product development is pursued by a development team with representatives from all relevant functional parts; and technology levels are relatively moderate, which means that not every process is automated (UAW, 1992b). However, the new program will result in additional idling of a number of U.S. and Canadian assembly and manufacturing facilities over the next 4 years--6 vehicle
assembly plants, 4 power train facilities, and 11 component plants (Stempel, 1992). Employment, Stempel stated, will be decreased substantially in North America. The GM chairman anticipated the hourly work force to shrink by an additional 15,000 persons through attrition and retirements in 1992. The current U.S. hourly work force is 304,000, down 25,000 from 1990. By the end of 1992, the hourly work force will total approximately 289,000, and by 1995, at trend volume, it will be about 250,000--about half the size of the 1985 work force (Stempel, 1992).

Changes in the workplace have affected families, too. The median income of families for those under 30 years of age was 13% lower than what families earned in 1973 ("What Happened," 1991). More young families lived in poverty in the 1990s, and the proportion of children living in poor households jumped more than 5 points since 1973, to nearly 20%, as compared to the nation's overall poverty rate of 13%. Under 30 minorities' real median income has decreased 33% since 1973 ("What Happened," 1991).

Children raised in poverty are rising. In 1968 fewer than 14% of American children were living in poverty; by 1985, more than 20% were (U.S. Congressional Budget Office, 1985). One in every seven American children receives welfare benefits, government figures show ("Children Raised in Poverty," 1993). If the trend continues, more than 33% of the children in the U.S. will be living below the poverty line after the turn of the century (U.S. Congressional Budget Office, 1985). These children encounter the highest risk educationally, have declining prospects for jobs, and have increasing rates of early pregnancy. Aid for Families with
Dependent Children (AFDC), the government's major cash welfare program for families with children expect costs of $22.4 billion in 1993. The average monthly payment to an AFDC family is $376.00 ("Children Raised in Poverty," 1993).

In addition, household composition and family structure have changed as women increasingly went to work ("What the Next Fifty Years Will Bring," 1983). Women entering professional positions asked for equalization of pay as their numbers continued to rise from 34% in 1950 to more than 55% in 1985. If the trend continues, the work force will be about equal in numbers after the turn of the century ("What the Next Fifty Years Will Bring," 1983). The concept of family has been redefined by society, too. More people will be involved in family relationships, but there will be fewer families with children, and some with no children at all. In 1983, the U.S. birth rate was 1.8 children per woman--below replacement level, and it is anticipated that the U.S. will achieve zero population growth near the midpoint of the 21st century ("What the Next Fifty Years Will Bring," 1983).

Other trends affecting the future of work and health include estimates that the U.S. population is expected to grow from 239 million people listed in 1985 to 283 million in the year 2010 (U.S. Census Bureau, 1984). The number of older people, those over 65, are projected to increase by 2010 from 12% (29 million) to 14% (39 million) (U.S. Department of Labor, Bureau of Statistics, 1986).

Older men still in the labor force have continued to decline, but statistics for older women who are still working have only changed moderately--from 10% of women over 65 in 1950 to 8% in 1981 (U.S.
Census Bureau, 1984). In the next century, those who are 65 and older will account for more than one out of every five persons and this fact will alter the way people in the U.S. live and work (U.S. Census Bureau, 1984). According to the U.S. Census Bureau, life expectancy at birth will increase by about 4 years to 74.4 years for men and 82.7 years for women. Low birth rates that deprive the work force of entrants will strengthen the need for people to work longer to keep the Social Security system operating (U.S. Census Bureau, 1984).

Immigration will also impact change in the population, the work force, and the need for development of new health care strategies. Additional people entering the United States will add from 450,000 to 1.5 million people per year to the U.S. population (U.S. Census Bureau, 1984). The proportion of minorities, particularly from the poorest segments of society, will increase. All of these things, a population growth, changes in age and racial composition, an aging work force, a declining number of males in the work force, rising numbers of women and minorities on the job, and an increased life expectancy, will alter the workplace as it is known in the 1990s; and this, in turn, will necessitate new thinking about health care coverage and delivery (The National Assembly, 1987a).

Another major problem facing the U.S. and the workplace is that an estimated 37 million to 39 million Americans are without health insurance nationally (Riegle, 1992a). Plant closure, job loss, and displacement have contributed to a crisis, and increased numbers no longer have health coverage through employment. Major reform in health care is needed, Riegle stated. President Clinton has appointed a task force to
assist in health care reform. More than 61 million Americans have gone without health insurance for lengthy periods of time, and as many as half of them had no help in paying medical bills for more than a year. Hispanics, blacks, and young city dwellers have fared worse than the general population ("Those Without Insurance," 1992).

Within the workplace, health care problems of an aging work force, women, and minorities will also demand attention, and will be the greatest concerns for employers in the future (O'Donnell & Ainsworth, 1984). Health care problems of blacks and other minorities will continue to increase due to rising proportions of minorities in the population. With the exception of Asian and Pacific Island groups, the health of minorities, especially blacks, tends to be poorer than that of whites, and includes six causes of excess deaths: heart disease and stroke, homicide and accidents, cancer, infant mortality, cirrhosis, and diabetes (U.S. Department of Health and Human Services, 1985).

Health care risks in the workplace, which may include work-related problems or personal stressors on the job, will increase need for intensive health promotion efforts concerning knowledge about health, preventive measures, and a positive life-style. Musculoskeletal problems, due to poorly designed equipment or work tools, may be more noticeable with an older work force; so may long-term effects of exposure to toxic substances become more evident as the working population ages (The National Assembly, 1987a).

Future medical knowledge will assist research in keeping populations well and include promising signs in the field of immunological developments, brain research, genetic knowledge and genetic
engineering, new ways of administering drugs, and studies of monoclonal antibodies ("What the Next Fifty Years Will Bring," 1983). Research will continue to examine both the positive and negative roles of stress in disease and health, and methods will be used to understand not only the biochemical mechanisms of stress, but to act as personal growth techniques and components of healing.

New knowledge and information, along with the application of technology to health care, will enhance services and better assist in care to individuals and society ("What the Next Fifty Years Will Bring," 1983). Monitoring equipment will be increasingly available as people move toward the concept of self-responsibility and will include, for example, blood pressure devices, blood glucose monitors, urine testing, colo-rectal kits, pregnancy testing, and other screening tools. Resources will increase and include guidebooks and magazines and telephone or postal information services (Bezold, Carlson, & Peck, 1986).

The movement toward self-care and self-responsibility will become more evident with rising health care costs and lack of availability of health coverage. Although numbers of health promotion programs have been expanding at the work site and play an important role, lack of availability of health care to increasing numbers will continue to be an important factor in the development of alternative care (Bezold et al., 1986).

Another major issue is unmet mental health needs, which are a common expensive problem for the unemployed worker and his family, who no longer have health coverage (Michigan Department of Mental Health, 1975). Generally speaking, insurance coverage is lost or
becomes inadequate with job loss. New health care strategies need to be developed to accommodate those without resources. A study by the Michigan Department of Mental Health (1975) stated that almost 19% of the adult U.S. population suffer from mental disorders, but only a small percentage receives formal care. Those who do have coverage quickly become aware that both Medicare and private insurance plans give fewer benefits to those in need of mental health for a shorter period of time and with higher co-payments than they provide to people with physical ills ("Mental Health's Scrawny Net," 1993). Mental health expenditures have risen substantially in the 1990s, while traditional safety nets like Social Services Departments, have been restricted by severe federal and state budget cuts which have decreased personnel and/or totally eliminated some services (Tableman, 1991).

Hospitals, for example, such as Hurley Medical Center, Flint, Michigan, attribute their extreme losses of $6.7 million for 1991-1992, to declining numbers of insured and paying patients and an increase in the number of indigent patients. Abuse of costly emergency room services by noninsured patients continues to be a factor contributing to increasing debt and the inability of the hospitals to provide other necessary health care services ("Hospitals," 1993). Flint, Michigan, a community that lost half of the GM automakers' work force since 1985, is seeking ways to assist uninsured persons with alternative modes of health care ("Hospitals," 1993).

Health care costs have risen from 6% of the Gross National Product (GNP) in the early 1960s to 11% by the early 1980s (The National Assembly, 1987b). Estimates include that by the year 2010,
costs will rise up to 13% or higher. Alternative systems of health care have been encouraged as a means of cost control and include Health Maintenance Organizations (HMOs), ambulatory care centers, birthing centers, emergency and first aid centers, home health care, and hospice programs ("New Medicine," 1993).

As changes in the health delivery system take place, the workplace will continue to be affected. Some employers, who have become more involved in health of workers, will expand programs in hopes of decreasing health insurance costs and will use physicians as health care managers to conduct health related programs. The decentralization of knowledge concerning health care, enhancement of life-style, and strategies to prevent illness, will lead some workers to depend more on themselves and less on professionals (O'Donnell & Ainsworth, 1984).

Two workplace programs that have been developed to assist in decreasing health risks and contributing to health care are smoking cessation programs and efforts to improve the food choices offered at the work site (Hope Heart Institute, 1990). Costs of illnesses associated with smoking are carried by employers as well as by employees who don't smoke, but whose insurance rate reflect the costs of smoking-related illnesses. The Environmental Protection Agency (cited in Hope Heart Institute, 1990) has declared environmental tobacco smoke to be a known carcinogen (cancer-causing agent) and states that passive smoke causes 3,000 cases of lung cancer in the U.S. every year. A strong smoking policy has been encouraged in the 1990s, particularly regarding smoking in public facilities, schools, and the workplace and is backed by the strength of public policy and the law in 1992.
The second program targeted for change in the workplace concerns dietary practices, which may be involved in 30% of all cancer deaths (Doll & Peto, 1981). Increased consumption of fruit, vegetables, and grains will continue to be linked with decreased risks in some cancers, but also have value in the reduction of cardiovascular disease and related conditions, such as elevated cholesterol and blood pressure (Hope Heart Institute, 1990). Employers are paying greater attention to food offerings in company cafeterias, adding specialty diets for diabetics or select health conditions, assisting with weight loss menus, adding salad bars, or providing low salt foods. Heart disease, cancer, and hypertension will continue to gain attention on work site programs.

As a result of the aforementioned factors, although not a comprehensive list, employers will need to continue developing new strategies for work, health, and health care delivery to better protect their most valuable commodity, the worker (The National Assembly, 1987a, 1987b).
CHAPTER III

RESEARCH DESIGN AND METHODOLOGY

Introduction

This chapter includes a description of the research design, the methodology of data collection, and the method of analysis. The research design contains the type of design, preparation of the interviewer, description of the population and sample, measures administered, instructions to the subjects, and the pilot study conducted. Methods of data collection included one-to-one interviews, taped recordings, observations, telephone interviews, and paper-pencil questionnaires.

The Research Design

A descriptive survey design was used to answer the research questions of how United Auto Workers (UAW) closing and nonclosing plants in two General Motors (GM) organizational settings (Fisher Body 1 and Buick Motor Car Company, particularly the Buick City plant), coped mentally and physically with unemployment and displacement. Stress, health, and coping of workers were examined in 1991-1992 by interviews, which included structured and nonstructured questioning and testing which provided quantitative and qualitative data.

Specific steps used within this design included the identification of two groups of subjects to be described, selection of a method for obtaining a representative sample of the two groups, selection of data
collection methods, and appropriate procedures for analyzing the results.

The design was employed to describe an intact situation as accurately as possible. The field setting, UAW unionized auto plants in Flint, Michigan, a metropolitan community of 140,000 people, was chosen because of its heightened unemployment, particularly in the past 5 years, due to a major plant’s closing (Fisher Body 1) and increasing displacement of other UAW auto workers (Buick).

Preparation of the Interviewer--Interviewer Training

The researcher worked on a voluntary basis with members of Michigan Health and Social Security (MHSS) Research Institute to develop the Plant Closing Questionnaire, to learn interviewing techniques offered in a 2-day training session by MHSS, to contact potential candidates by telephone, to design a release form and forward it to participants for their signature, and to prepare for subsequent phases of the study. In working with MHSS, legitimacy and approval were given to the UAW study, and reassurance was offered to previous participants and new candidates.

Population and Sample

One hundred Fisher Body workers, the closing group, were chosen from the original computerized list provided by MHSS as the remaining workers who were unemployed 40 or more weeks at the time of this survey. Sixty-seven Buick workers, the nonclosing group, were chosen from a computer list of Buick City plant workers provided by the UAW Regional Office, who were laid off or displaced in comparable years
(1987-1990s) to Fisher's plant closing (1987). Of the original 167 workers, 166 workers completed the study with the exception of one 37-year-old male of the nonclosing group who committed suicide shortly after the Plant Closing Questionnaire was administered but was counted therein, and one female, nonclosing worker, who withdrew due to lack of interest and was dropped from the study. Seven closing plant workers did not complete the Coping Resources Inventory and could not be reached by phone or mail. All other materials were completed.

The total group of workers ranged in age from approximately 30 to 62 years, included employed, unemployed, or discouraged workers, and those who may have transferred out to UAW or other non-UAW plants.

Nonclosing plant workers, members of Buick City, were those who had been subjected to frequent involuntary layoffs beginning in 1987 and were displaced because of changes in production schedules or for other factors related to the manufacturing process. Nonclosing workers were not a part of the original MHSS study (1987) but were enlisted as a second group in view of basic similarities. Members of both groups had lost jobs through no fault of their own, been displaced or released from GM, and may or may not have successfully gained employment by the close of this study in 1992.

Introductory phone calls were made in 1991 to closing plant workers from MHSS, Detroit, Michigan, to acquaint workers with the new phase of the program and gain consent for participation. Appointments were set with the researcher for interviewing and completion of questionnaires at Local 581, Local 599, the worker's home, or the
Human Resource Center (HRC), at a time of convenience. A follow-up letter was sent from MHSS to each of the closing plant participants on their letterhead, telling them details of the study, the purpose of the visits, and who would be conducting the interviews. Nonclosing plant workers were also contacted by the researcher and sent an introductory letter or were called to inform them of the nature of the study and request an interview.

Measures Administered

Four major questionnaires were used for data collection and included the Revised Ways of Coping, a combined form of Hassles and Uplifts, the Coping Resources Inventory, and the Health Risk Appraisal. An additional Plant Closing Questionnaire provided generalized information on the worker, his family, health, stress, job status, current problems, and services of the HRC.

Revised Ways of Coping

The first instrument, Revised Ways of Coping (Folkman & Lazarus, undated), was designed to answer questions in relation to a specific stressful encounter, in this case, job loss and displacement with focus on effects of appraisal and reappraisal. In the Manual for the Ways of Coping Questionnaire, Folkman and Lazarus (undated) warned that definition of the focal encounter is critical to the proper administration of the questionnaire. Participants' initial interviews were conducted to help them refocus on a single event--unemployment and job loss and effects to them and their families.
Computer scoring for Revised Ways of Coping for 165 workers was accomplished by mailing answer sheets to the publisher, Consulting Psychologists Press, Palo Alto, California. Individuals responded to each item on a 4-point Likert-type scale, indicating the frequency with which each strategy was used: 0 indicated does not apply and/or not used, 1 indicated used somewhat, 2 indicated used quite a bit, and 3 indicated used a great deal.

The report form returned by the scoring company depicted raw scores and relative scores for each scale. Raw scores were the sum of the subject’s responses to the items that comprise a given scale. Raw scores, however, are not factor scores, and responses are not differentially weighted according to factor loadings. Relative scores techniques, stated the company, controls for the unequal numbers of items within the scales and for individual differences in response rates. The decision as to which set of scores to use depends on the information desired. Raw scores describe coping effort for each of the eight types of coping, whereas relative scores describe the proportion of effort represented by each type of coping (Manual, Folkman & Lazarus, undated).

Because the Revised Ways of Coping Questionnaire measures coping processes, which by definition are variable, traditional test-retest estimates or reliability are inappropriate. Reliability can be evaluated, however, by examining the internal consistency of the coping measures, estimated with Cronbach’s coefficient alpha. The reported reliability on the Ways of Coping Questionnaire have face validity, and there is also evidence of construct validity (Manual, Folkman & Lazarus, undated). The alpha coefficients for the eight items on the scale averaged over five
occasions are as follows: \( N = 150 \): (1) confrontive coping alpha = .70, (2) distancing = .61, (3) self-controlling = .70, (4) seeking social support = .76, (5) accepting responsibility = .66, (6) escape-avoidance = .72, (7) planful problem solving = .68, and (8) positive reappraisal = .79 (Manual, Folkman & Lazarus, undated).

Combined Hassles and Uplifts Scale

The second instrument, Combined Hassles and Uplifts Scale (Lazarus & Folkman, undated), is a 53-item questionnaire that emphasized the role of appraisal in the stress and coping process by asking individuals how they viewed various everyday encounters within the environment with regard to the potential of these incidents for threat, harm, loss, or challenge. This research tool is considered in the formative stages.

The Hassles and Uplifts Scale (Lazarus & Folkman, undated) offers three independent scales: the Daily Hassles Scale, the Uplifts Scale, and the Combined Hassles and Uplifts Scale. The Daily Hassles Scale consisted of 117 items used to measure the frequency and severity of a person's transactions with the environment that are considered by the person to be stressful events. The Uplifts Scale consisted of 135 items used to measure the frequency of a person's transactions with the environment that are considered by the person to be positive experiences. The combined scale, used in this study for all 165 subjects, is worded so that the respondent could indicate whether a given transaction was a hassle, an uplift, or both on a 0 to 4 Likert-type scale.
The Combined Hassles and Uplifts Scale listed items in the center of the page, and each item was rated for its hassle value to the left of the list and for its uplift value to the right. Respondents used a 4-point scale indicating how much of a hassle or uplift the experience was over a specified time frame. The response scale consisted of the following: none or not applicable, somewhat, quite a bit, and a great deal. Specific instructions were given to the respondents about the time frame to be considered in marking the items. Scoring for each of the three scales can be accomplished by hand scoring the respective item booklet (Manual, Lazarus & Folkman, undated). In this study, Combined Hassles and Uplifts Scale was scored and tabulated by the Research Department of C. S. Mott Community College.

Cross-sectional analyses have been reported for the Daily Hassles Scale, and intraindividual analyses have also been used. The test has been used in an intraindividual research design to examine the covariation of changes in daily stress, illness symptoms, and mood (Manual, Lazarus & Folkman, undated). Measures were obtained on 20 occasions over a 4-month period from a sample that consisted of 75 married couples, this sample was very similar to the sample used in earlier field studies (Manual, Lazarus & Folkman, undated).

Less information was available about the role of daily uplifts, as compared with daily hassles, in subjective well-being, social functioning, and somatic health. There is some evidence of gender differences in the relationships between uplifts and psychological symptoms, and a study is available that provides data on the most frequent uplifts among nursing-home residents. More information is provided in another study
of adolescents and suggests that uplifts may indeed act as buffers against the damaging consequences of hassles. Replication of Lazarus and Folkman’s (1984) results in the Hassles and Uplifts Scales provided further evidence of construct validity by several researchers (Manual, Lazarus & Folkman, undated).

**Coping Resources Inventory**

The third instrument, Coping Resources Inventory (CRI) (Hammer & Marting, undated), was developed as standardized measure of coping resources available to individuals for managing stress and was offered separately from the other tests due to commercial unavailability at the time of this study. Ninety-three closing plant workers and 65 nonclosing plant workers completed the form by mail approximately 3 months after other testing was completed.

The test was constructed to facilitate an emphasis on resources rather than on deficits. Scales include five domains: cognitive (COG), social (SOC), emotional (EMO), spiritual/philosophical (S/P), and physical (PHY), described in the *Manual for the Coping Resources Inventory* (Hammer & Marting, undated).

The CRI may be administered to individuals or to groups and is appropriate for a wide range of ages, although the spiritual/philosophical items may be difficult for younger subjects to answer. The inventory can be completed in about 10 minutes.

The CRI offered raw scores for each of the 60 items and used a 4-point scale to indicate how often they have engaged in the behavior described in the item over the past 6 months. Scale scores are the sum
of the item responses for each scale. In addition to the five individual scale scores, a total resource score was computed by summing the five scale scores. The higher the scale score, the higher the resource. Hand scoring by use of a template is also possible. Answer sheets were mailed to Consulting Psychologists Press for computer scoring.

Item-to-scale correlations are reported. Internal consistency reliabilities and test-retest estimated for various samples using the CRI scales were estimated using Cronbach's alpha (Manual, Hammer & Marting, undated). The reported reliability demonstrated in one sample (N = 749) follows: COG = .77, SOC = .79, EMO = .84, S/P = .80, PHY = .71, and total = .91. The range and pattern of the reliabilities suggest that the CRI scales are fairly homogeneous and it was stated that studies are reliably tapping the constructs. The coefficients for the total resource score are quite sample only (Manual, Hammer & Marting, no date).

Predictive validity has been tested, and multitrait-multimethod analysis has been used to provide additional estimates of convergent and divergent validity. To establish discriminant validity of the CRI, a number of analyses were conducted by researchers comparing target groups and control. Correlations of CRI scales with other variables were used by the authors of the test to estimate concurrent validity (Manual, Hammer & Marting, undated).

The CRI, stated the authors, is used in both clinical and educational settings for a number of purposes; has the potential for use in stress-related problems, including counseling, rehabilitation programs, stress workshops, identification of individuals who might be at-risk and
in need of therapeutic assistance, program evaluation, educational planning and assessment; as a research instrument to investigate coping resources in various populations; and to provide a standardized measure in coping research (Manual, Hammer & Marting, undated).

Health Risk Appraisal

The fourth instrument, a computerized Health Risk Appraisal (HRA) (University of Michigan Fitness Research Center, undated), was completed by 165 study participants and showed how one's individual life-style affects chances of avoiding the most common causes of death for a person of a given age and sex. The HRA included 59 questions concerning health related behaviors, quality of life indicators, medical history and self-care, and personal information.

Instructions to all questionnaires were self explanatory. Due to the technical nature of information on the HRA, the researcher, a registered nurse, was on hand to clarify and assist with questions on blood pressure measurements, blood sugar, cholesterol, or other health indices. Final scores and ways to improve health were offered to individuals, either by phone or in person, upon completion of testing, as a thank you for participation in the study.

Plant Closing Questionnaire

The fifth instrument, a Plant Closing Questionnaire, was devised by the author with the assistance of the Michigan Health and Social Security, the Research Department of the UAW. Answers to questions about past and present job status and attitudes toward unemployment
and displacement were entered and recorded in a booklet as the worker spoke. Results were tabulated by the Research Department of Mott Community College.

**Instructions to Subjects**

All participants were told they would be interviewed individually, unless otherwise requested, and tape recorded during the Plant Closing Questionnaire if consent was given. Paper-pencil testing, Revised Ways of Coping, Hassles and Uplifts Scale, and the Health Risk Appraisal (HRA), would follow on the same appointment and would take about 10-15 minutes to complete each form. Workers were told the researcher would be in the room with them to clarify any technical terms or unclear questions.

Participants were also told that answers to the Plant Closing Questionnaire would be recorded in a booklet as they spoke, and they could view the written material if they desired. Answer forms to revised Ways of Coping and Coping Resources Inventory were collected upon completion and returned promptly to the Consulting Psychologists Press for computerized assessment. The Plant Closing Questionnaire and Hassles and Uplifts Scale were sent to the Research Department of C. S. Mott Community College for tabulation. The computerized HRA was returned to the University of Michigan for assessment of individual and group responses and a final joint summary.

Instructions were given to all workers prior to taking the HRA that the questionnaire was not a substitute for a check-up or physical examination by a doctor or a nurse, and would only give the person some
ideas for lowering risk of getting sick or injured in the future. Participants were informed that the test was not designed for people who already have serious conditions like heart disease, cancer, kidney disease, or other disabling diseases.

Due to unavailability of the Coping Resources Inventory (CRI) at the time of the original interview with workers, additional consent was obtained from the Human Subjects Institutional Review board of Western Michigan University (see Appendix C) to send the Coping Resources Inventory by mail to the workers. A stamped, self-addressed envelope and directions to the test were enclosed. Answer sheets to the CRI were returned to the researcher, then sent to the Consulting Psychologists Press offices for computerized assessment. Ninety-three closing plant workers completed the forms, and seven closing plant workers failed to respond to letters or phone calls. Sixty-five nonclosing workers returned all forms.

A Pilot Study

A pilot study was conducted with 10 GM Jobs Bank workers at Buick Local 599, Community Services Department. After testing, questions were adjusted on the Plant Closing Questionnaire to maximize clarity and contribute to ease of flow and understanding. The remaining questionnaires, Revised Ways of Coping, Hassles and Uplifts Scale, Coping Resources Inventory, and the Health Risk Appraisal were also given to evaluate problematic areas as seen by the workers.
Data Collection

A multiple method of investigative techniques was used to provide cross-checking of data to assure accuracy in reporting. These methods of inquiry included telephone calls, face-to-face interviews, taped interviews, informal observation, and notations by the interviewer, as well as administration of the four major questionnaires concerning stress, health, and coping, and also the Plant Closing Questionnaire.

Observations by the researcher were used to describe feeling-tones of displaced and unemployed auto workers toward a major life transition. Observation and interviewing, important strategy tools, allowed the researcher to gather information workers might otherwise be unable to give. Nonverbal response to communication was observed and included in the summary of interactions.

All interviews and testing were done in the privacy of a closed office, undisturbed by outside noises or distractions. Confidentiality was reaffirmed at the time of the meeting, and assurance was given that no names would be revealed. Job classification, gender, group summary, or other numbers were used to identify participants. Because of the obvious concern of workers to protect identity, confidentiality information was repeated as necessary. Answer sheets and interview notations were secured in a locked file until sent to the computerized centers.

The interviews, which preceded testing, focused workers' thinking on the effects of job loss to the individual and the family. Workers were allowed to have one family member accompany them if desired. Most members requested interviews alone. Family members were not refused
input if desired, but neither were they encouraged to answer questions specifically directed at the worker.

The multimethod data gathering strategy offered the opportunity for triangulation-cross checking data, checking one set of data against another to assure validity in reporting (Mitchell, 1986). The interview offered the researcher a chance to extract meaning and significance to a situation that may have been overlooked in formal testing.

Data Analysis

The data were analyzed on a plant basis. Recorded interviews were transcribed and evaluated for meaning. Similarities and differences were noted in the data, and any patterns observed were taken into account. Limitations regarding the self-report data and its dependability were recognized, but multiple methods of inquiry assisted in accuracy and allowed for cross-checking. Questionnaires and tests were computer analyzed for individual and group statistics and complemented the entire data assessment.

Both quantitative and qualitative methods were used in the analysis. In keeping with basic assumptions of qualitative research, no attempt was made to generalize the findings to other settings. However, findings from this study will be provided to the UAW for use at the Human Resource Center, to the employer for generalized information only, and to the state of Michigan for planning at the local and national level for health promotion in specific groups. Other organizations or researchers may determine for themselves the meaning and relevance of the findings to their own particular setting.
One principal investigator, a health care professional, conducted the inquiry to establish continuity and reliability to the approach and method used with auto workers. The same researcher also transcribed all taped interviews, monitored all test taking, and conducted data analysis throughout the investigation.
CHAPTER IV

FINDINGS

In this chapter the investigator presents findings for research questions, listed in Chapter I, concerning the physical and mental status of auto workers in United Auto Workers (UAW) General Motors (GM) plants 5 years after plant closure of one plant and a major layoff and displacement of workers in another auto plant. The subject of unemployment or underemployment still affects millions of workers despite the talk of an economic recovery. Some of the nations biggest companies continue to trim employee rolls. The problem affects not only U.S. workers, but also those in Europe, Japan, and even Mexico. The human effects of declining jobs is evident in both the jobless worker and his family, and there is concern over how their children will survive when they enter the job market.

This chapter addresses stress and coping processes and coping resources, through the Revised Ways of Coping (WOC) (Folkman & Lazarus, undated), Combined Hassles and Uplifts Scale (Lazarus & Folkman, undated), and the Coping Resources Inventory (CRI) (Hammer & Marting, undated). Health aspects are seen in workers through the Health Risk Appraisal (HRA) (University of Michigan Fitness Research Center, undated). Data were supplemented by responses from the Plant Closing Questionnaire and personal interviews, and answered Research Question 5 (in part). These categories include (a) job security and
attitudes; (b) is your spouse/partner working; (c) do you feel there is little you can do to change; (d) satisfied workers, (e) attitudes toward self; (f) social support; (g) what workers did when faced with stress; (h) workers' problems; (i) programs and services of the Human Resource Center; (j) financial assistance; (k) earnings and savings; and (l) is job loss a threat, a loss, or a challenge. The chapter closes with hypotheses to assist in the further development of the issues of unemployment and displaced workers.

Research Question 1

What level of stress and processes of coping are closing and nonclosing and the combined group of workers experiencing, as indicated by Revised Ways of Coping questionnaire?

In recent years, interest has been in how individuals coped with stress, not stress per se, and what contributes and influences their psychological well-being, social functioning, and somatic health. In keeping with Lazarus and Folkman's (1984) theory of appraisal and reappraisal, the Revised Ways of Coping questionnaire was used to measure levels of stress auto workers were experiencing due to plant closure, layoff, or displacement, and how workers coped and handled stressful encounters experienced in everyday life related to this event.

The eight scales used in the Revised Ways of Coping Questionnaire are as follows: (1) Confrontive Coping, (2) Distancing, (3) Self-Controlling, (4) Seeking Social Support, (5) Accepting Responsibility, (6) Escape-Avoidance, (7) Planful Problem Solving, and (8) Positive Reappraisal. Individuals responded to each item on a 4-point Likert
scale, indicating the frequency with which each strategy is used: 0 indicates does not apply and/or not used, 1 indicates used somewhat (Manual, Folkman & Lazarus, undated).

The results for the closing, nonclosing, and the combined groups on Ways of Coping are presented in Tables 1 through 3 and Figures 7 through 9.

Table 1

Ways of Coping (Closing Group)

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Mean</th>
<th>Variance</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Confronting</td>
<td>10.52</td>
<td>37.65</td>
<td>6.1359</td>
</tr>
<tr>
<td>2. Distancing</td>
<td>14.94</td>
<td>39.21</td>
<td>6.2617</td>
</tr>
<tr>
<td>3. Controlling</td>
<td>14.66</td>
<td>18.65</td>
<td>4.3185</td>
</tr>
<tr>
<td>4. Seeking</td>
<td>12.31</td>
<td>30.76</td>
<td>5.5461</td>
</tr>
<tr>
<td>5. Accepting</td>
<td>8.69</td>
<td>40.36</td>
<td>6.3529</td>
</tr>
<tr>
<td>7. Planful</td>
<td>17.52</td>
<td>38.29</td>
<td>6.1878</td>
</tr>
<tr>
<td>8. Reappraisal</td>
<td>11.04</td>
<td>61.19</td>
<td>7.8224</td>
</tr>
</tbody>
</table>


The following definitions and results of the WOC questionnaire for closing, nonclosing, and the combined groups are offered as follows:

1. Confrontive Coping describes aggressive efforts to alter the situation and suggest some degree of hostility and risk taking.
The closing group showed a mean of 10.52, slightly higher than the nonclosing mean of 9.68, with a difference of 0.84. The combined group mean was 10.19. Results agreed with personal interviews that both groups were active and aggressive in efforts to save their jobs, but the nonclosing group exhibited more hostility concerning uncertainty in the job situation. This attribute is not demonstrated through the WOC scales specifically.

2. Distancing describes cognitive effort to detach oneself and to minimize the significance of the situation.

The closing group showed a mean of 14.94, slightly higher than the nonclosing mean of 13.19, with a difference of 1.75. This
Table 2
Ways of Coping (Nonclosing Group)

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Mean</th>
<th>Variance</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Confronting</td>
<td>9.68</td>
<td>22.69</td>
<td>4.7634</td>
</tr>
<tr>
<td>2. Distancing</td>
<td>13.19</td>
<td>25.59</td>
<td>5.0589</td>
</tr>
<tr>
<td>4. Seeking</td>
<td>12.37</td>
<td>31.17</td>
<td>5.5830</td>
</tr>
<tr>
<td>5. Accepting</td>
<td>9.06</td>
<td>22.06</td>
<td>4.6968</td>
</tr>
<tr>
<td>6. Escaping</td>
<td>11.46</td>
<td>28.25</td>
<td>5.3150</td>
</tr>
<tr>
<td>7. Planful</td>
<td>18.45</td>
<td>28.81</td>
<td>5.3674</td>
</tr>
<tr>
<td>8. Reappraisal</td>
<td>11.63</td>
<td>35.89</td>
<td>5.9908</td>
</tr>
</tbody>
</table>


difference was the largest on all of the scales. The combined group mean was 14.25. Interviews indicated the closing group did detach themselves and attempt to minimize the seriousness of the situation by saying the plant was supposed to close 5 years ago, but didn’t; therefore, it probably wouldn’t close at all. The nonclosing group, rather than detaching from the situation, seemed to involve themselves more in the mechanics of the process of what they could do to maintain GM employment.

3. **Self-Controlling** describes efforts to regulate one’s feelings and actions.
The closing group showed a mean of 14.66, and was closely related to the nonclosing group mean of 14.35, with only a difference of 0.31. The combined group mean was 14.54. Although closely related in numbers, interviews, rather than scales, alerted the reader "how" each group regulated one's feelings and actions. The closing group indicated a more peaceful, yet sorrowful attitude toward plant closure. Their attitude was more accepting of permanent closure of the plant, although they didn't like it. The nonclosing group showed shock, sadness, and regret at the loss of their job, but also a strong degree of hostility and unwillingness to give up the possibility of returning to work. Comparable effort was demonstrated in the groups, but different
Table 3
Ways of Coping (Combined Group)

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Mean</th>
<th>Variance</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Confronting</td>
<td>10.19</td>
<td>31.75</td>
<td>5.6347</td>
</tr>
<tr>
<td>2. Distancing</td>
<td>14.25</td>
<td>34.40</td>
<td>5.8651</td>
</tr>
<tr>
<td>3. Controlling</td>
<td>14.54</td>
<td>14.96</td>
<td>3.8678</td>
</tr>
<tr>
<td>4. Seeking</td>
<td>12.33</td>
<td>30.74</td>
<td>5.5443</td>
</tr>
<tr>
<td>5. Accepting</td>
<td>8.84</td>
<td>33.00</td>
<td>5.7445</td>
</tr>
<tr>
<td>6. Escaping</td>
<td>10.44</td>
<td>35.96</td>
<td>5.9966</td>
</tr>
<tr>
<td>7. Planful</td>
<td>17.89</td>
<td>34.57</td>
<td>5.8796</td>
</tr>
<tr>
<td>8. Reappraisal</td>
<td>11.27</td>
<td>51.03</td>
<td>7.1435</td>
</tr>
</tbody>
</table>


objectives guided the workers in their efforts.

4. Seeking Social Support describes efforts to seek informational support, tangible support, and emotional support.

The closing group showed a mean of 12.31 and the nonclosing group was 12.37, with a difference of 0.06, the smallest difference indicated on the entire scale. Personal interviews, however, clarified likenesses and differences. Both groups were willing to seek information and tangible support, but the closing group sought and gave emotional support to one another through formal and informal meetings and associations. Workers called one another regularly and gathered at meetings designed to help all of them, or be supportive of their issues. Nonclosing
workers maintained they did not need anyone else and resisted affiliation with other laid off workers except at informational or goal directed meetings. Their attitude was "each man for himself."

5. Accepting Responsibility acknowledges one's own role in the problem with a concomitant theme of trying to put things right.

The closing group showed a mean of 8.69, and the nonclosing group mean was 9.06, a slightly higher figure, with a difference of 0.37. The combined group mean was 8.84.

In the interviews, both groups of workers agreed the situation was not their fault, and this possibility relieved guilt associated with job loss. The two groups differed on "who's to blame" and answers varied from GM, the union, the government, and various other individual persons or
institutions.

6. **Escape-Avoidance** describes wishful thinking and behavioral efforts to escape or avoid the problem. Items on this scale contrast with those on the Distancing scale, which suggest detachment.

The closing group showed a mean of 9.78, lower than the non-closing of 11.46, a difference of 1.68, and the second highest of all differences on the scale. The combined group mean was 10.44.

Interviews demonstrated how the groups differed in their thinking. Closing group members hoped that the plant would not close at all—that something would intervene to prevent permanent closure, stating their plant was the "home of the sit-downers," had historical value, and should not be disposed of for that reason. After 5 years of threats of closure, several workers seemed convinced the event would not occur, despite administrative directives to the contrary. Closing plant workers were willing to comply to orders to step up productivity, do a better job, and devote more time and effort to economics. The administrative incentive, to keep the plant open if a good job was done, led to all out efforts by the employees. The nonclosing workers based wishful thinking on the fact their plant was not closing, and they would have a job even if they were laid off for awhile.

7. **Planful Problem Solving** describes deliberate problem-focused efforts to alter the situation, coupled with an analytic approach to solving the problem.

The closing group showed a mean of 17.52, and the nonclosing mean was 18.45, with a difference of 0.93. The combined group mean was 17.89. Interviews indicated both groups, initially, showed
problem-focused efforts to alter the situation and used analytical approaches to solving their problems. The closing group, through the 5 years, waned in efforts to alter the situation, and shifted toward acceptance. The nonclosing group became more problem-focused and militant in efforts to problem solve. Workers recognized GM could also close their plant permanently in an effort to downsize, and the problem was greater than just routine layoffs.

8. **Positive Reappraisal** describes efforts to create positive meaning by focusing on personal growth. It also has a religious dimension (for example, "I found new faith" (Folkman & Lazarus, undated).

The closing group mean was 11.04, and the nonclosing mean followed closely with 11.63, with a difference of 0.59. The combined group mean was 11.27.

The close relationship demonstrated on the scales between the groups indicated a similarity of feeling, but interviews gave additional insight to the direction of the two groups. The closing group accepted plant closure as a time for pause in work life, setting of a new direction, or choice of a new vocation. Closing workers seemed to turn inward toward personal growth and positive meaning to the event. The nonclosing group appeared to turn outward for answers that would assist them to gain new skills and education and lead them to new work. They did not see a positive side to job loss and displacement or major changes in the workplace. Nonclosing workers acknowledged awareness of a society in transition but hoped it would not affect them or their jobs.
Research Question 2

What hassles and uplifts are described and ranked by closing and nonclosing workers, and what group results are stated on the Hassles and Uplifts Scale?

The Hassles and Uplifts Scale consisted of 53 items worded so that the respondent could indicate whether a given transaction was a hassle to them, an uplift to them, or both, and to what intensity. Subject matter includes questions about the children, spouse, parents or in-laws, health and well-being, nature of work and work load, job security, money for necessities, emergencies, education, smoking and drinking, exercise, drugs and medications, political matters and social issues, home repairs, entertainment, legal or political matters, and social commitments. Workers ranked the 10 greatest hassles for them, with the Number 1 being the most severe hassle or uplift.

A summary of hassles and uplifts may be found in Tables 4 through 6 and include the 10 greatest hassles, the 10 greatest uplifts, and the 10 areas workers indicated hassles are greater than uplifts.

Research Question 3

What are the coping resources of closing and nonclosing workers and the combined results as indicated on the Coping Resources Inventory?

The Coping Resources Inventory (Hammer & Marting, undated) was used to identify resources currently available to individuals for managing stress. The questionnaire emphasizes resources rather than
The 10 Greatest Hassles (Rank Order)--Combined Group

<table>
<thead>
<tr>
<th>Rank order</th>
<th>Hassle</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Paperwork (taking care of)</td>
</tr>
<tr>
<td>2.</td>
<td>Enough money for necessities (food, taxes, housing, clothing, et al.)</td>
</tr>
<tr>
<td>3.</td>
<td>Enough money for extras</td>
</tr>
<tr>
<td>4.</td>
<td>Job security</td>
</tr>
<tr>
<td>5.</td>
<td>Enough money for emergencies</td>
</tr>
<tr>
<td>6.</td>
<td>Car maintenance</td>
</tr>
<tr>
<td>7.</td>
<td>Home repairs</td>
</tr>
<tr>
<td>8.</td>
<td>Conserving (gas, electric, water, et al.)</td>
</tr>
<tr>
<td>9.</td>
<td>Political or social issues</td>
</tr>
<tr>
<td>10.</td>
<td>Amount of free time</td>
</tr>
</tbody>
</table>


deficits. The scales have five categories including cognitive (COG), social (SOC), emotional (EMO), spiritual/philosophical (S/P), and physical (PHY). Coping resources are those resources inherent in individuals that enable them to handle stressors more effectively, to experience fewer or less intense symptoms upon exposure to a stressor, or to recover faster from exposure.

The results for closing, nonclosing, and the combined group on the CRI are presented in Tables 7, 8, and 9 and Figures 10, 11, and 12.
Table 5
The 10 Greatest Uplifts (Rank Order)--Combined Group

<table>
<thead>
<tr>
<th>Rank order</th>
<th>Uplift</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Time</td>
</tr>
<tr>
<td>2.</td>
<td>Friends</td>
</tr>
<tr>
<td>3.</td>
<td>Children</td>
</tr>
<tr>
<td>4.</td>
<td>Physical abilities</td>
</tr>
<tr>
<td>5.</td>
<td>Home entertainment</td>
</tr>
<tr>
<td>6.</td>
<td>Recreation and entertainment out of the home</td>
</tr>
<tr>
<td>7.</td>
<td>Intimacy</td>
</tr>
<tr>
<td>8.</td>
<td>Physical appearance</td>
</tr>
<tr>
<td>9.</td>
<td>Sex</td>
</tr>
<tr>
<td>10.</td>
<td>Organized</td>
</tr>
</tbody>
</table>


The following are definitions and results of the CRI scale for closing, nonclosing, and the combined groups.

1. **Cognitive** (COG) is the "extent to which individuals maintain a positive sense of self-worth, a positive outlook toward others, and optimism about life in general" (Manual, Hammer & Marting, undated, p. 3).

The closing group showed a mean of 46.25, which was somewhat lower than the nonclosing group mean of 47.29, with a difference of 1.04. The combined group mean was 46.68.
Table 6
The 10 Areas Workers Indicated Hassles Are Greater Than Uplifts--Combined Group

<table>
<thead>
<tr>
<th>Hassle</th>
<th>% difference</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Paperwork</td>
<td>49.5</td>
<td>23</td>
</tr>
<tr>
<td>2. Enough money for extras</td>
<td>43.5</td>
<td>22</td>
</tr>
<tr>
<td>3. Job security</td>
<td>43.1</td>
<td>21</td>
</tr>
<tr>
<td>4. Car maintenance</td>
<td>40.6</td>
<td>20</td>
</tr>
<tr>
<td>5. Enough money for necessities</td>
<td>39.4</td>
<td>19</td>
</tr>
<tr>
<td>6. Politics or social issues</td>
<td>38.8</td>
<td>18</td>
</tr>
<tr>
<td>7. Enough money for emergencies</td>
<td>38.7</td>
<td>17</td>
</tr>
<tr>
<td>8. Conserving</td>
<td>38.3</td>
<td>16</td>
</tr>
<tr>
<td>9. Enough money for education</td>
<td>37.0</td>
<td>15</td>
</tr>
<tr>
<td>10. Home repairs</td>
<td>36.2</td>
<td>14</td>
</tr>
</tbody>
</table>


The results generally are in congruence with interviews that indicated both groups generally had a good sense of self-worth, because both believed the job situation was not their fault, and they did not demean themselves on this account. But, closing workers expressed a more positive outlook toward others and optimism about life in general, whereas nonclosing workers tended to be very negative in outlook, expressed poorer self-esteem, and were not optimistic about the future. The close association and meetings of the closing group all through the
Table 7
Coping Resources Inventory (Closing Group)

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean</th>
<th>Variance</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cognitive</td>
<td>46.25</td>
<td>120.69</td>
<td>10.9859</td>
</tr>
<tr>
<td>2. Social</td>
<td>47.22</td>
<td>104.00</td>
<td>10.1980</td>
</tr>
<tr>
<td>3. Emotional</td>
<td>44.00</td>
<td>124.41</td>
<td>11.1539</td>
</tr>
<tr>
<td>4. Spiritual</td>
<td>44.67</td>
<td>94.68</td>
<td>9.7303</td>
</tr>
<tr>
<td>5. Physical</td>
<td>44.36</td>
<td>73.97</td>
<td>8.6005</td>
</tr>
<tr>
<td>6. Total</td>
<td>44.60</td>
<td>162.89</td>
<td>12.7628</td>
</tr>
</tbody>
</table>

Source: Coping Resources Inventory, published by Consulting Psychologists Press, Palo Alto, CA.

Figure 10. Coping Resources--Closing Group.
Table 8
Coping Resources Inventory (Nonclosing Group)

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean</th>
<th>Variance</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cognitive</td>
<td>47.29</td>
<td>87.90</td>
<td>9.3754</td>
</tr>
<tr>
<td>2. Social</td>
<td>49.11</td>
<td>125.38</td>
<td>11.1973</td>
</tr>
<tr>
<td>3. Emotional</td>
<td>45.03</td>
<td>94.87</td>
<td>9.7401</td>
</tr>
<tr>
<td>4. Spiritual</td>
<td>47.42</td>
<td>70.97</td>
<td>8.4243</td>
</tr>
<tr>
<td>5. Physical</td>
<td>44.69</td>
<td>118.56</td>
<td>10.8885</td>
</tr>
<tr>
<td>6. Total</td>
<td>45.48</td>
<td>101.85</td>
<td>10.0920</td>
</tr>
</tbody>
</table>

Source: Coping Resources Inventory, published by Consulting Psychologists Press, Palo Alto, CA.

Figure 11. Coping Resources--Nonclosing Group.
### Table 9
Coping Resources Inventory (Combined Group)

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean</th>
<th>Variance</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cognitive</td>
<td>46.68</td>
<td>106.82</td>
<td>10.3353</td>
</tr>
<tr>
<td>2. Social</td>
<td>47.99</td>
<td>112.92</td>
<td>10.6263</td>
</tr>
<tr>
<td>3. Emotional</td>
<td>44.72</td>
<td>111.84</td>
<td>10.5754</td>
</tr>
<tr>
<td>4. Spiritual</td>
<td>46.98</td>
<td>84.55</td>
<td>9.1951</td>
</tr>
<tr>
<td>5. Physical</td>
<td>44.49</td>
<td>91.70</td>
<td>9.5760</td>
</tr>
<tr>
<td>6. Total</td>
<td>44.96</td>
<td>137.16</td>
<td>11.7115</td>
</tr>
</tbody>
</table>

**Source:** Coping Resources Inventory, published by Consulting Psychologists Press, Palo Alto, CA.

![Figure 12. Coping Resources--Combined Group.](image)
5 years seemed to foster better relationships and a positive outlook.

2. Social (SOC) is "the degree to which individuals are embedded in social networks that are able to provide support in times of stress" (Manual, Hammer & Marting, undated, p. 3).

The closing group showed a mean of 47.22, which was lower than the nonclosing mean of 49.11, with a difference of 1.89.

Interviews indicated that both groups had social networks but they were used in different ways. The closing workers were a close knit group that functioned more as a family. Concern was shown on many occasions by one closing worker for another. In both groups, varying degrees of family support were demonstrated, with family problems, divorce, or separations occurring in each. Nonclosing workers were reluctant to become involved in social networks concerning fellow workers and were more inclined to establish support networks away from the workplace. Closing workers kept returning to their union hall for various functions and parties, including a final farewell party 5 years after plant closure. Based on the interviews, a greater difference was anticipated in the two groups.

3. Emotional (EMO) is "the degree to which individuals are able to accept and express a range of affect, based on the premise that a range of emotional response aids in ameliorating long-term negative consequences of stress" (Manual, Hammer & Marting, undated, p. 3).

The closing group showed a mean of 44.00, lower than the nonclosing group mean of 45.03, with a difference of 1.03. The combined mean was 44.72.
The range of emotional responses was evident through the 5 years. Workers described how varying degrees of response assisted them to adjust to the long-term negative consequences of stress. Some workers never adapted to the initial stages of intense emotional response; in others, reappraisal brought about an attenuated response. Those who could not adjust showed more evidence of a negative lifestyle and admitted to increased drug or alcohol abuse. Other negative health signs and increased risks included changes in blood pressure, weight, or lack of safety factors in both groups.

4. **Spiritual/philosophical (S/P)** is:

The degree to which actions of individuals are guided by stable and consistent values derived from religious, familial, or cultural tradition or from personal philosophy. Such values might serve to define the meaning of potentially stressful events and to prescribe strategies for responding effectively. The content domain for this scale is broader than traditional Western religious definitions of spirituality. *(Manual, Hammer & Marting, undated, p. 3)*

The closing group showed a mean of 44.67, which was lower than the nonclosing group mean of 47.42, with a difference of 2.75. The combined mean was 46.98.

The greatest difference (2.75) on all of the CRI scales was in this category. Interviews revealed how people gave meaning to stressful events confronting them and interpreted them on the basis of family values, cultural differences, or religious values. Interpretation of events may have been affected by gender, but this factor has not been explored. It is to be noted that a greater number of females were at the nonclosing plant, compared to predominantly male workers at the closing plant.
5. **Physical (PHY) is:**

The degree to which individuals enact health-promoting behaviors believed to contribute to increased physical well-being. Physical well-being is thought to decrease the level of negative response to stress and to enable faster recovery. It may also help to attenuate potentially chronic stress-illness cycles resulting from negative physical responses to stressors that themselves become major stressors. *(Manual, Hammer & Marting, undated, p. 3)*

The closing group showed a mean of 44.36, which was lower than the nonclosing group mean of 44.69, with a difference of 0.33. This is the smallest difference of all the CRI scales, showing that they are most alike on this aspect. The combined mean was 44.49.

Workers of both groups indicated in the interviews that now that they had more time (during layoff) to get involved with physical health, many were increasing good health practices and decreasing health risks.

**Research Question 4**

What is the life-style and health status of the closing and nonclosing workers and their combined groups, and what preventive measures are used by the groups to improve or prolong life as indicated on the Health Risk Appraisal?

The Health Risk Appraisal (HRA), by the University of Michigan Fitness Research Center (undated), has been used to answer this research question. Health risk categories include measurement of sex, age, height, body frame size, blood pressure, total cholesterol, and HDL cholesterol levels. Health related behaviors included assessment of smoking, drinking, drug use, driving habits, types of food regularly eaten, exercise, sleep habits, and positive changes to enhance health
during the past 12 months. Quality of life indicators appraised satisfaction with self and others, one’s job, misfortunes in the past year, and a personal perspective on life and one’s health. Medical history and self-care included questions on high blood pressure, heart problems, diabetes, cancer, high cholesterol, and respiratory problems, as well as those pertinent directly to males and females. Demographic information completed the record.

A summary and synopsis of the HRA is as follows:

Age range of all workers was 30 to 62 years. The majority of workers (155) indicated they were mostly satisfied with life and had their lives in perspective. Job satisfaction varied, and 84 said it was satisfactory, but 62 did not agree. Most workers (123) reported good to excellent health, although 42 said health was only fair to poor. Social support was available to workers and 151 said it was strong to average, but 13 did not feel they had support. Ninety-five workers stated they did not suffer a personal loss due to job change, but 70 said they had.

The most important health related behaviors are listed as follows, and efforts should be directed toward improving these items. Approximately half of the combined group of auto workers smoke, although 29 more stated they were ex-smokers. Government efforts on health promotion are currently directed toward assisting people of all ages to give up smoking. A recent tax increase in 1994 on tobacco products may assist the effort. A large number of workers admitted to using alcohol, with an average of 7.9 drinks per week. Community emphasis continues on awareness and consequences of drug and alcohol abuse, but workers say intake may increase under stress.
Only 60 workers engaged in physical activities three or more times per week, and this may be reason for concern, particularly during long periods of layoff and inactivity. The average overweight in pounds for males was 38.5 pounds and 35 pounds for females. The average blood pressure ranged around 126.7/79.9, but 12 members said they have higher than average values. A large number of the combined group (78) averaged less than 6 hours of sleep per day. Health standards for adequate sleep indicate this is not enough, and 8 hours is preferred for good health.

Awareness of the high incidence of prostate cancer in the Genesee County community is important to male subjects, but 45 males stated they have never had an exam. Females were warned of the high incidence of breast and other female disorders and encouraged toward mammograms and necessary physical examinations.

Tables 10, 11, and 12 list the most significant health problems seen in auto workers and include auto workers' health problems, prevention and health enhancement changes in workers, and risk factor change--prevention and improvement of health, as stated by workers in 1991-1992 on the Health Risk Appraisal.

Research Question 5

Describe the status of closing and nonclosing workers and the combined group in 1991-1992 concerning attitudes about jobs, security of employment, problems of workers, social support, stress, self-satisfaction, is life worth living, thoughts of suicide, Human Resources
Table 10
Auto Workers' Health Problems--Combined Group

<table>
<thead>
<tr>
<th>Medical problem</th>
<th>Yes</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Back pain</td>
<td>91</td>
<td>0</td>
</tr>
<tr>
<td>Blood pressure medication</td>
<td>22</td>
<td>0</td>
</tr>
<tr>
<td>Chronic bronchitis or emphysema</td>
<td>16</td>
<td>9</td>
</tr>
<tr>
<td>Cancer</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Heart problems</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>High cholesterol</td>
<td>14</td>
<td>63</td>
</tr>
<tr>
<td>High blood pressure</td>
<td>19</td>
<td>34</td>
</tr>
<tr>
<td>Women--hysterectomy</td>
<td>16</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Health Risk Appraisal from the University of Michigan Fitness Research Center.

Center (HRC) services, educational status, and income as stated on the Plant Closing Questionnaire and interviews. Also, state if workers regard the layoff situation as a threat, a loss, or a challenge.

A synopsis of the responses from the Plant Closing Questionnaire concerning job status problems and issues facing the auto workers are as follows:
Table 11
Prevention and Health Enhancement Changes in Workers--Combined Group

<table>
<thead>
<tr>
<th>Health enhancement change</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercised</td>
<td>55</td>
<td>84</td>
</tr>
<tr>
<td>Lost weight</td>
<td>52</td>
<td>88</td>
</tr>
<tr>
<td>Reduced alcohol use</td>
<td>37</td>
<td>43</td>
</tr>
<tr>
<td>Quit/reduced smoking</td>
<td>42</td>
<td>68</td>
</tr>
<tr>
<td>Reduced fat/cholesterol intake</td>
<td>73</td>
<td>62</td>
</tr>
<tr>
<td>Coped better with stress</td>
<td>92</td>
<td>46</td>
</tr>
<tr>
<td>Reduced blood pressure</td>
<td>22</td>
<td>56</td>
</tr>
</tbody>
</table>

*Source:* Health Risk Appraisal from the University of Michigan Fitness Research Center.

**Introduction to the Findings of the Plant Closing Questionnaire (Research Question 5)**

In 1991-1992, 15 blacks and 85 whites or others were interviewed at the closing plant. Six blacks and 60 whites or others were interviewed at the nonclosing plant concerning job loss or displacement. The age range of the workers was 30 to 62 years, with more males and older workers at the closing plant. At the time of the interview, 62.34% of all workers were married, 20% were divorced, 1.8% widowed, 1.8% separated, 11.5% single, and 2.4% were listed in the "other" category of the HRA Questionnaire (University of Michigan Fitness Research Center, undated).
Table 12

Risk Factor Change--Prevention and Improvement of Health--Combined Group

<table>
<thead>
<tr>
<th>Health related</th>
<th>Percent ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercised more</td>
<td>33.3</td>
</tr>
<tr>
<td>Lost weight</td>
<td>31.5</td>
</tr>
<tr>
<td>Reduced/and cholesterol</td>
<td>44.2</td>
</tr>
<tr>
<td>Reduced blood pressure</td>
<td>13.3</td>
</tr>
<tr>
<td>Nondrug use</td>
<td>80.6</td>
</tr>
<tr>
<td>Reduced smoking</td>
<td>25.5</td>
</tr>
<tr>
<td>Sleep (7-9 hours)</td>
<td>52.7</td>
</tr>
<tr>
<td>Coped better with stress</td>
<td>84.1</td>
</tr>
<tr>
<td>Self-stated fitness (excellent to good)</td>
<td>74.6</td>
</tr>
<tr>
<td>Awareness of potentials of safety hazards</td>
<td>98.1</td>
</tr>
</tbody>
</table>

Source: Health Risk Appraisal from the University of Michigan Fitness Research Center.

1. Category: Job Security and Attitudes About the Job Situation (Research Question 5)

Despite prior knowledge of pending plant closure, 25 closing plant workers said that job security was good, 13 said it was bad, and 12 said they just did not know (see Table 13). Half of the 100 workers involved did not respond to the question at all. Sixty-six nonclosing plant workers were less optimistic, only 12 said job security was good, 26 said job security was bad, and 22 didn’t know (see Table 14).
Recognition is that the closing plant had more long-termed, older workers than the nonclosing plant.

Table 13
How Is Present Job Security--Closing Plant

<table>
<thead>
<tr>
<th>Job security</th>
<th>Frequency</th>
<th>%</th>
<th>Cum. Freq.</th>
<th>Cum. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>25</td>
<td>50.0</td>
<td>25</td>
<td>50.0</td>
</tr>
<tr>
<td>Bad</td>
<td>13</td>
<td>26.0</td>
<td>38</td>
<td>76.0</td>
</tr>
<tr>
<td>Don’t know</td>
<td>12</td>
<td>24.0</td>
<td>50</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Source:* Plant Closing Questionnaire designed by the researcher with assistance from Michigan Health and Social Security Research Institute.

Table 14
How Is Present Job Security--Nonclosing Plant

<table>
<thead>
<tr>
<th>Job security</th>
<th>Frequency</th>
<th>%</th>
<th>Cum. Freq.</th>
<th>Cum. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>12</td>
<td>20.0</td>
<td>12</td>
<td>20.0</td>
</tr>
<tr>
<td>Bad</td>
<td>26</td>
<td>43.3</td>
<td>38</td>
<td>63.3</td>
</tr>
<tr>
<td>Don’t know</td>
<td>22</td>
<td>36.7</td>
<td>60</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Source:* Plant Closing Questionnaire designed by the researcher with assistance from Michigan Health and Social Security Research Institute.

Morale at the nonclosing plant appeared worse than the closing plant. Years after the event and transfer of closing plant workers to the
Buick plant under Paragraph 96 of the UAW contract, nonclosing workers were still saying they were not "let in" on the decision-making level. Workers felt this threatened job security and changed whole lives. Anger was evident when nonclosing workers said that too many closing workers were let in--far more than they were told about.

Credibility of the entire administrative process, particularly the union's role in negotiations, seemed threatened because of this unresolved anger. Workers said they did not trust GM, the union, or other institutions regarding their lives. Closing workers stated that they were all a part of the GM family and universal seniority should be the policy for all. Closing workers said that they were out of work through no fault of their own and should be entitled to a job in other UAW plants.

One hundred and forty-three of the combined group said that things could be worse, although 23 said no, they didn't think so. The majority of the combined group (116) said the future depended upon themselves, but 46 said no, there were other factors involved outside of their control.

Workers expressed powerlessness and anger at job loss or continual work-related changes. Closing workers said they did everything asked of them based on the promise the plant would stay open. But administration closed the plant anyway and workers felt betrayed.

Workers of both groups with less than 10 years of seniority, who had no rights of recall, were among the most disadvantaged workers. In 1991, nonclosing workers stated it took more than 15 years of seniority to keep a job; by the end of 1992, a strong increase was noted and estimated seniority needed to maintain a job rose to 20-25 years. The
rise in seniority required to maintain employment left workers feeling more insecure and with little hope of competing for jobs.

2. Category: Ability to Change the Situation (Research Question 5)

As shown in Table 15, 48 auto workers of the combined group said there was little one could do to change things, but 111 said no, this was not true--there was a lot that could be done. One hundred and fifty-nine combined members responded and seemed optimistic that things could be done to change the work outlook and the effects on their lives. Forty-eight did not see how they could be involved in the change process. Negative responses indicated workers may be inhibited from seeking new employment opportunities, retraining, or educational opportunities.

Table 15

<table>
<thead>
<tr>
<th>Change</th>
<th>Frequency</th>
<th>%</th>
<th>Cum. Freq.</th>
<th>Cum. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>48</td>
<td>30.2</td>
<td>48</td>
<td>30.2</td>
</tr>
<tr>
<td>No</td>
<td>111</td>
<td>69.8</td>
<td>159</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Plant Closing Questionnaire designed by the researcher with assistance from Michigan Health and Social Security Research Institute.
Satisfied Workers (Research Question 5)

Workers of the combined group agreed that due to poor economic conditions in Flint, Michigan, they were happy to have any job at all if it would allow them to feed their families, pay the bills, and survive. The first choice and preference was to work for GM, but workers stated they would rather have some job than no job. Workers further stated they were stigmatized for being GM employees, and other employers would not hire them because they knew they would return to General Motors as soon as they were able.

The combined group stated it was hard to generalize about conditions from one layoff to another, as there were different implications involved in each release, particularly length of time, but most agreed the years 1987-1990 were especially hard on them. Fisher plant closure took place in December 1987 and that fall Buick also had massive layoffs. Financial problems ranked high on the list of priorities of workers, along with negative ripple effects from lack of money. Relationships with spouse or partner, children, other family, friends, and neighbors were explored.

Attitudes Toward Self and Others (Research Question 5)

Most workers of the combined group (160) stated they have a number of good qualities, although 13 said they did not feel they had much to be proud of. A large number (116) admitted to getting down on themselves, but 48 said they did not, as they did not think the situation was their fault. An important factor in successful adaptation
concerns where the worker places blame for the condition. Blame placed on others relieves guilt and hastens adjustment (Lazarus & Folkman, 1984).

A major regret expressed by unemployed members of both plants was sorrow they could not provide as much food or clothing that their families needed. Workers felt humiliated as they believed providing for basic needs was the responsibility of the breadwinner. Workers feared being "hounded" for payments unable to be made. Closing plant workers seemed more prepared for job loss, generally, than their counterparts. Closing workers sold extra cars, houses or cottages, leisure equipment, or other belongings in anticipation of plant closure. Nonclosing workers were not as prepared for job loss because they clung to hope of recall. In the beginning, employees anticipated the layoff would be temporary, but as the work release became more prolonged, employees had to forego social and recreational activities in addition to basic necessities of living. Many workers expressed deep concern for their children, who had to wear Salvation Army clothes or hand-me-downs; be without hot meals or enough to eat; or be moved away from familiar homes, schools, or communities.

3. Category: Social Support (Research Question 5)

Social support is an important consideration in how auto workers coped with job loss, and the reader is directed to Gore's (1978) study for further information. A large number of the combined group (128) stated there was someone to help them in difficult periods and give them
emotional support, although 37 said there was no one they could turn to in times of crisis (see Tables 16, 17, and 18).

Table 16
Is There Anyone to Help You in Difficult Periods--Closing Plant

<table>
<thead>
<tr>
<th>Support</th>
<th>Frequency</th>
<th>%</th>
<th>Cum. Freq.</th>
<th>Cum. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>78</td>
<td>77.2</td>
<td>78</td>
<td>77.2</td>
</tr>
<tr>
<td>No</td>
<td>23</td>
<td>22.8</td>
<td>101</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Plant Closing Questionnaire designed by the researcher with assistance from Michigan Health and Social Security Research Institute.

Table 17
Is There Anyone to Help You in Difficult Periods--Nonclosing Plant

<table>
<thead>
<tr>
<th>Support</th>
<th>Frequency</th>
<th>%</th>
<th>Cum. Freq.</th>
<th>Cum. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>50</td>
<td>78.1</td>
<td>50</td>
<td>78.1</td>
</tr>
<tr>
<td>No</td>
<td>14</td>
<td>21.9</td>
<td>64</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Plant Closing Questionnaire designed by the researcher with assistance from Michigan Health and Social Security Research Institute.

Some workers stated that they would not talk very often, if ever, about the situation even if they had someone to relate to, as it would only transfer anxiety from one family member or friend. Due to the fact
Table 18
Is There Anyone to Help You in Difficult Periods--Combined Group

<table>
<thead>
<tr>
<th>Support</th>
<th>Frequency</th>
<th>%</th>
<th>Cum. Freq.</th>
<th>Cum. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>128</td>
<td>77.6</td>
<td>128</td>
<td>77.6</td>
</tr>
<tr>
<td>No</td>
<td>37</td>
<td>22.4</td>
<td>165</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Plant Closing Questionnaire designed by the researcher with assistance from Michigan Health and Social Security Research Institute.

economic conditions were poor all over in Flint, laid off members stated that no good would come of the interaction anyway. Others said that they withdrew simply because it was easier for them. Closing plant workers, a more social group, made it a point to stay in contact with fellow workers through phone calls, meetings, or parties held at the union halls for their benefit. Nonclosing workers did not seem to reflect a need for this type of association with fellow workers and tended to stay alone, except for business type meetings at the union hall.

4. Category: What Workers Did When Faced With Stress (Research Question 5)

Workers faced the issue of joblessness and too much time on their hands by working hard at home, increasing social activities, communing with nature, or enjoying hobbies. Despite accelerated activity in some who were laid off, 51 of the combined group still think life is not worth living due to job loss, although 73 disagreed. What workers do when
faced with stress is an important consideration, as unresolved stress may lead to more serious consequences and actions.

Of a total of 100 closing plant workers, 20 stated yes to thoughts of suicide throughout the years after closure, but 80 responded no to this question. Twenty-four nonclosing workers said they had thoughts of suicide, but 40 stated no. Of the combined group, 44 said yes and 120 said no (see Tables 19, 20, and 21).

Table 19
Ever Thought About Suicide--Closing Plant

<table>
<thead>
<tr>
<th>Suicide thoughts</th>
<th>Frequency</th>
<th>%</th>
<th>Cum. Freq.</th>
<th>Cum. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>20</td>
<td>20.0</td>
<td>20</td>
<td>20.0</td>
</tr>
<tr>
<td>No</td>
<td>80</td>
<td>80.0</td>
<td>100</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Plant Closing Questionnaire designed by the researcher with assistance from Michigan Health and Social Security Research Institute.

Table 20
Ever Thought About Suicide--Nonclosing Plant

<table>
<thead>
<tr>
<th>Suicide thoughts</th>
<th>Frequency</th>
<th>%</th>
<th>Cum. Freq.</th>
<th>Cum. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>24</td>
<td>37.5</td>
<td>24</td>
<td>37.5</td>
</tr>
<tr>
<td>No</td>
<td>40</td>
<td>62.5</td>
<td>64</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Plant Closing Questionnaire designed by the researcher with assistance from Michigan Health and Social Security Research Institute.
Table 21

<table>
<thead>
<tr>
<th>Suicide thoughts</th>
<th>Frequency</th>
<th>%</th>
<th>Cum. Freq.</th>
<th>Cum. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>44</td>
<td>26.8</td>
<td>44</td>
<td>26.8</td>
</tr>
<tr>
<td>No</td>
<td>120</td>
<td>73.2</td>
<td>164</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Plant Closing Questionnaire designed by the researcher with assistance from Michigan Health and Social Security Research Institute.

There was a discrepancy between verbal responses of the auto workers, which were more numerous than written answers. Some workers continue to admit to thoughts of suicide even now 5 years after job loss. This number may indicate silent suffering and a need for prolonged help. Counseling was available prior to plant closure or shutdown and the first year thereafter, but has since been discontinued. Workers admitted to extreme stress in the year prior to closure (1986), but ignored the opportunity for counseling because they thought it was an administrative ploy, and the plant wouldn’t really close anyway. The 5-year anticipatory period is noteworthy for its effect on workers. Lazarus and Folkman (1984) called this the incubation period, but said effects of prolongation have not been studied.

At the time of the interviews (1991-1992), closing plant workers were still sitting at home waiting for a work recall that never came. Nonclosing workers expressed more agitation and distress, and were not as willing to sit around and wait for GM’s recall as were closing plant
Behaviors during interviews were noted, and reflected feelings not verbalized including long pauses of silence, audible sighs, hand-wringer, silent tears, changes in facial expression, frank sobbing, pacing, and chain smoking. Closing workers showed deep sadness over job loss; nonclosing workers demonstrated more hostility, but stated they, too, felt helpless to change the status quo. One hundred and eight of the combined group thought they would have to start life all over due to plant closure, job loss, and displacement.


As shown in Table 22, in the combined group 73 workers ranked money to meet the bills as their greatest problem in 1991-1992; second, relationship with spouse or partner (16); and third, lack of recreation (15). Several discussed the implications of job loss on children extensively but said the situation really affected all of them. An aspect that needs further consideration is how long after layoff will it take the individual or family member to recover? For many, financial set backs and money problems continue for a long period of time, and some workers never recover past losses.

6. Category: Who Else Works? (Research Question 5)

Whether or not the spouse/partner is working is an important component of the question concerning what happens to the family during layoff (see Table 23). How the family manages or whether there
Table 22
What Is Your Most Important Problem
Today--Combined Group

<table>
<thead>
<tr>
<th>Problem</th>
<th>Frequency</th>
<th>%</th>
<th>Cum. Freq.</th>
<th>Cum. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Money for food</td>
<td>11</td>
<td>7.6</td>
<td>11</td>
<td>7.6</td>
</tr>
<tr>
<td>Living conditions</td>
<td>6</td>
<td>4.1</td>
<td>17</td>
<td>11.7</td>
</tr>
<tr>
<td>Money for clothing</td>
<td>3</td>
<td>2.1</td>
<td>20</td>
<td>13.8</td>
</tr>
<tr>
<td>Transportation</td>
<td>4</td>
<td>2.8</td>
<td>24</td>
<td>16.6</td>
</tr>
<tr>
<td>Relationship with partner</td>
<td>16</td>
<td>11.0</td>
<td>40</td>
<td>27.6</td>
</tr>
<tr>
<td>Problems with children</td>
<td>5</td>
<td>3.4</td>
<td>45</td>
<td>31.0</td>
</tr>
<tr>
<td>Child care</td>
<td>1</td>
<td>0.7</td>
<td>46</td>
<td>31.7</td>
</tr>
<tr>
<td>Lack of recreation</td>
<td>15</td>
<td>10.3</td>
<td>61</td>
<td>42.1</td>
</tr>
<tr>
<td>Money to meet bills</td>
<td>73</td>
<td>50.3</td>
<td>134</td>
<td>92.4</td>
</tr>
<tr>
<td>Other</td>
<td>11</td>
<td>7.6</td>
<td>145</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Source:* Plant Closing Questionnaire designed by the researcher with assistance from Michigan Health and Social Security Research Institute.

are comparable wages or earnings loss, can have harmful and lasting effects on individuals and their families. Some families had a spouse or partner working in one of the auto plants, and this contributed to overall survival, if at least one continued working while the other was laid off.

The layoff situation depended on where the member was employed and their seniority date. The male member, the one with the greatest seniority, usually, remained working, while the female with less
Table 23
Is Your Spouse/Partner Working--Combined Group

<table>
<thead>
<tr>
<th>Spouse working</th>
<th>Frequency</th>
<th>%</th>
<th>Cum. Freq.</th>
<th>Cum. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>89</td>
<td>55.3</td>
<td>89</td>
<td>55.3</td>
</tr>
<tr>
<td>No</td>
<td>72</td>
<td>44.7</td>
<td>161</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Plant Closing Questionnaire designed by the researcher with assistance from Michigan Health and Social Security Research Institute.

seniority was laid off. The females' choices at the closing plant were to take the buyout if they had enough seniority, to stay home and care for the children if they lacked seniority, or to seek employment elsewhere. At the nonclosing plant, a couple could be laid off together if they worked in the same plant scheduled for shut-down.

Although it has not yet been explored, the question asked is, What happens to families or individuals when they are forced to go to work when the breadwinner is out of a job?

7. Category: Programs and Services of the Human Resource Center (HRC) (Research Question 5)

Most workers were aware of the Human Resource Center (HRC), and information came to them by a variety of means listed previously. Only 80 workers used any programs offered but 71 claimed no participation (see Table 24). This indicates a high number of unemployed workers are not using available services designed for them. Corporate requirements now include more general education, training and retraining,
and the learning of new skills. Joint management-union ventures such as HRC can assist the process of restructuring the workplace.

Table 24

<table>
<thead>
<tr>
<th>HRC services</th>
<th>Frequency</th>
<th>%</th>
<th>Cum. Freq.</th>
<th>Cum. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>80</td>
<td>53.0</td>
<td>80</td>
<td>53.0</td>
</tr>
<tr>
<td>No</td>
<td>71</td>
<td>47.0</td>
<td>151</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Plant Closing Questionnaire designed by the researcher with assistance from Michigan Health and Social Security Research Institute.

Of the combined group, 121 said they had additional training to help them survive, but 39 said they did not have any extra training. At this point, training is voluntary, but may be linked to subsidy offered in the future.

Workers said help was afforded them if TRA or scholarship assistance was available (see Table 25). Of the combined group, 89 had finished high school, roughly about half of all the workers; 24 had completed the first year of college; and 27 had completed the second year of college. Six members said they had completed a full college program. Workers responded positively to offers to increase education and appeared increasingly interested in more education as job requirements escalate and skills become obsolete.

The process of transition back to school was fostered by availability of Mott Community College counselors at the HRC.
### Table 25
Are You Receiving TRA Assistance--Combined Group

<table>
<thead>
<tr>
<th>TRA assistance</th>
<th>Frequency</th>
<th>%</th>
<th>Cum. Freq.</th>
<th>Cum. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>41</td>
<td>24.8</td>
<td>41</td>
<td>24.8</td>
</tr>
<tr>
<td>No</td>
<td>124</td>
<td>75.2</td>
<td>165</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Plant Closing Questionnaire designed by the researcher with assistance from Michigan Health and Social Security Research Institute.

8. Category: Total Family Savings and Earnings (Research Question 5)

Sixty-eight workers of the combined group said they had zero savings, but 29 claimed more than $5,000 in savings (see Table 26). Those without savings found they had to rely on community services quickly, and this was not a satisfactory method to meet family needs for prolonged periods. Total household income before taxes indicated that 18 members are in the less than the $10,000 category, and 20 members are in each of the following groups: $15,000-19,000; $30,000-34,999; and $35,000-39,999. The rest are dispersed in a range from less than $10,000 to $75,000 or more.

9. Category: Job Loss--A Threat, a Loss, or a Challenge (Research Question 5)

Fourteen closing workers stated job loss was a threat, 53 said a loss, and 29 viewed it as a challenge. Eleven of the nonclosing stated job loss was a threat, 34 said a loss, and 19 a challenge. Of the
Table 26
Total Family Savings--Combined Group

<table>
<thead>
<tr>
<th>Savings</th>
<th>Frequency</th>
<th>%</th>
<th>Cum. Freq.</th>
<th>Cum. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero</td>
<td>68</td>
<td>44.4</td>
<td>68</td>
<td>44.4</td>
</tr>
<tr>
<td>Less than $500</td>
<td>15</td>
<td>9.8</td>
<td>83</td>
<td>54.2</td>
</tr>
<tr>
<td>$501-1,000</td>
<td>15</td>
<td>9.8</td>
<td>98</td>
<td>64.1</td>
</tr>
<tr>
<td>$1,001-2,000</td>
<td>12</td>
<td>7.8</td>
<td>110</td>
<td>71.9</td>
</tr>
<tr>
<td>$2,001-3,000</td>
<td>8</td>
<td>5.2</td>
<td>118</td>
<td>77.1</td>
</tr>
<tr>
<td>$3,001-5,000</td>
<td>6</td>
<td>3.9</td>
<td>124</td>
<td>81.0</td>
</tr>
<tr>
<td>More than $5,000</td>
<td>29</td>
<td>19.0</td>
<td>153</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Plant Closing Questionnaire designed by the researcher with assistance from Michigan Health and Social Security Research Institute.

combined group, 25 said a threat, 87 a loss, and 48 a challenge (see Tables 27, 28, and 29).

Lazarus and Folkman (1984) said challenge has important implications for adaptation. These people, they stated, are more likely to have better morale because to be challenged means feeling positive about demanding encounters.

Hypotheses

To assist in further development of the issues concerning effects on unemployed or displaced workers, the following hypotheses derived on the bases of readings and present research are offered for future
Table 27
Was Plant Closing or Job Loss a Threat, a Loss, or a Challenge--Closing Plant

<table>
<thead>
<tr>
<th>Job loss viewed</th>
<th>Frequency</th>
<th>%</th>
<th>Cum. Freq.</th>
<th>Cum. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threat</td>
<td>14</td>
<td>14.0</td>
<td>14</td>
<td>14.0</td>
</tr>
<tr>
<td>Loss</td>
<td>53</td>
<td>53.0</td>
<td>67</td>
<td>67.0</td>
</tr>
<tr>
<td>Challenge</td>
<td>29</td>
<td>29.0</td>
<td>96</td>
<td>96.0</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>2.0</td>
<td>98</td>
<td>98.0</td>
</tr>
<tr>
<td>All above</td>
<td>1</td>
<td>1.0</td>
<td>99</td>
<td>99.0</td>
</tr>
<tr>
<td>Threat and loss</td>
<td>1</td>
<td>1.0</td>
<td>100</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Plant Closing Questionnaire designed by the researcher with assistance from Michigan Health and Social Security Research Institute.

Table 28
Was Plant Closing or Job Loss a Threat, a Loss, or a Challenge--Nonclosing Plant

<table>
<thead>
<tr>
<th>Job loss viewed</th>
<th>Frequency</th>
<th>%</th>
<th>Cum. Freq.</th>
<th>Cum. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threat</td>
<td>11</td>
<td>16.9</td>
<td>11</td>
<td>16.9</td>
</tr>
<tr>
<td>Loss</td>
<td>34</td>
<td>52.3</td>
<td>45</td>
<td>69.2</td>
</tr>
<tr>
<td>Challenge</td>
<td>19</td>
<td>29.2</td>
<td>64</td>
<td>98.5</td>
</tr>
<tr>
<td>Threat and loss</td>
<td>1</td>
<td>1.5</td>
<td>65</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Plant Closing Questionnaire designed by the researcher with assistance from Michigan Health and Social Security Research Institute.
Table 29
Was Plant Closing or Job Loss a Threat, a Loss, or a Challenge--Combined Group

<table>
<thead>
<tr>
<th>Job loss viewed</th>
<th>Frequency</th>
<th>%</th>
<th>Cum. Freq.</th>
<th>Cum. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threat</td>
<td>25</td>
<td>15.2</td>
<td>25</td>
<td>15.2</td>
</tr>
<tr>
<td>Loss</td>
<td>87</td>
<td>52.7</td>
<td>112</td>
<td>67.9</td>
</tr>
<tr>
<td>Challenge</td>
<td>48</td>
<td>29.1</td>
<td>160</td>
<td>97.0</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>1.2</td>
<td>162</td>
<td>98.2</td>
</tr>
<tr>
<td>All above</td>
<td>1</td>
<td>0.6</td>
<td>163</td>
<td>98.8</td>
</tr>
<tr>
<td>Threat and loss</td>
<td>2</td>
<td>1.2</td>
<td>165</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Plant Closing Questionnaire designed by the researcher with assistance from Michigan Health and Social Security Research Institute.

study:

1. People who believe that outcomes are dependent on their own behavior cope differently with health problems than people who see outcomes to be the result of luck, chance, fate, or powers beyond their personal control.

2. A significant difference between closing and nonclosing plant workers in health status and practice will be seen by the extent to which people feel confident of their powers of mastery over themselves, their health, and their environment.

3. The extent to which individuals are successful in coping with change in their lives will be reflected in the degree to which they report distress or strain.
4. Plant closure workers have greater levels of stress but higher levels of self-esteem than do displaced workers.

5. Do workers who deal with stressful life events effectively, and who also have appropriate coping and adaptational resources in terms of either personal or social support, experience lower degrees of life dissatisfaction, distress, and negative effects from unemployment?

Flaws and weakness of this study may be attributed to a weak design which lacked generalizability; however, descriptive studies are not without merit as they provide the basis for extended studies and constructive planning and implementation. Another weakness may be the prolonged nature of the study due to one person working alone, and the inability to control a population that was on the move. Further limitations of the study are fully discussed in another chapter.

Overview

Answers to research questions concerning how closing and nonclosing auto workers in two GM organizational settings in Flint, Michigan, coped mentally and physically with unemployment and displacement have been addressed through multiple methods. Descriptive statistics document results of Revised Ways of Coping, Combined Hassles and Uplifts Scale, Coping Resources Inventory, the Health Risk Appraisal, and the Plant Closing Questionnaire. The major concepts addressed in this study were stress, coping, and health in the unemployed auto worker.
CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Summary

This study was directed toward describing UAW auto workers of closing and nonclosing plants in Flint, Michigan, on a wide range of physical and psychological measures including Revised Ways of Coping (Folkman & Lazarus, undated), Hassles and Uplifts Scale (Lazarus & Folkman, undated), Coping Resources Inventory (Hammer & Marting, undated), and a Health Risk Appraisal (University of Michigan Fitness Research Center, undated). A Plant Closing Questionnaire stated demographics, current data about the job status, problems and issues of concern to the workers and their families, and services of the Human Resource Center.

The theoretical framework used to accomplish this study was Lazarus and Folkman's (1984) transactional model of stress and coping, which depicted a continually evolving relationship between the person and environment. Cognitive appraisal determined if the event was stressful for the individual and to what extent. Previous attributes or variables like self-esteem, hardiness, locus of control, or social support can influence the outcome or action. A particular focus of the study was directed toward whether the individual appraised the event as a threat, a loss, or a challenge, and to what extent it affected the individual. The manner in which an individual used appraisal and reappraisal in
their lives in response to a major life transition is an important factor (Lazarus & Folkman, 1984). Together, these components seem to attenuate the outcome. Research can assist other auto workers facing the same transition in the world of work to adjust to change through meaningful documentation of plant closure and displacement.

Quantitative and qualitative data were used to document relationships between the auto worker and his environment as he worked his way through changing information through the appraisal and reappraisal process. Lazarus (cited in Monat & Lazarus, 1985) viewed the process as circular and similar to a general systems framework.

Conclusions

The purpose of this research in 1991-1992 and the extended follow-up was to examine the continuing effects of auto plant closures and layoffs since 1987, and to document what is happening to the quality of lives of auto workers as a result of this transition. The first data based on plant closure and effects on workers in Flint, Michigan, were drawn from a survey conducted by Michigan Health and Social Security in 1987 at the closing of Fisher Body 1, on December 10, 1987. This research, A Descriptive Study of Michigan Auto Workers' (UAW) Physical and Psychological Responses to 1987 Plant Closures, continued the theme of psychosocial aspects of layoffs on auto workers. Revised Ways of Coping and the Coping Resources Inventory indicated few differences in the two groups of auto workers. The Hassles and Uplifts Scale documented and prioritized problems as the workers saw them. The Health Risk Appraisal reviewed areas of health risk for workers and
negative life-style habits that can be attenuated through education and information.

Recommendations

Rapid changes in the world of work and effects on the individual should be observed by longitudinal studies conducted over a long time span of 5 to 15 years, as recommended in the literature (Brenner, 1979). In 1991-1992 there was still a serious lack of studies of this type due to two factors--the length of work involved and high costs. Nevertheless, there have been some interesting contributions beginning in the late 1980s and early 1990s, with hope of more to come. Action research, particularly, is moving forward at an accelerated rate.

Attention continued concerning fears of workers that the auto industry continued to deteriorate, and the possibility of no more GM jobs in Flint, Michigan, for their growing children. Positive changes in contracts for particular plants, like GM Truck and Bus, have temporarily relieved concerns, but workers still fear lack of job security in the future.

Recommendations for auto workers include extended counseling through labor-management funded organizations, more opportunities for higher education, and increased learning of new skills. Recommendations stated can be an antidote to fear, depression, and general lack of self-satisfaction within this population. Ways in which auto workers cope and knowledge of coping resources are important factors in understanding how to help auto workers problem solve to their best benefit. Individual worker profiles could indicate those who are at greatest risk physically and psychologically, and a referral system could be used to
direct employees to professional help.

This study agrees that unemployment alone does not necessarily put an individual at risk health-wise (Lazarus & Folkman, 1984) but can contribute to increased levels of stress with negative physiological effects. Until recently, it was not known that negative effects of unemployment on health could be found as long as 10 to 15 years after the fact, but long-term implications are becoming more evident (Brenner, 1979).

The Health Risk Appraisal administered in this study did indicate that auto workers, like most Americans, do not engage in enough physical activity outside their work. Health implications of physical inactivity during long layoff periods can result in decreased physical working capacity at all ages and a general decrease in physiologic function and health status. Physical inactivity due to unemployment can also result in increased risk of developing obesity and its disease correlates, including increased risk of coronary heart disease.

Appropriate physical activity is a valuable tool in the treatment, control, or rehabilitation of many physical conditions of the auto workers, as well as in stress, depression, and anxiety. Workers should be cautioned against high levels of smoking, drinking of alcohol, failure to do self-body examinations, high cholesterol levels, significant increases or decreases in weight, and failure to watch safety rules and regulations important to good health.

Local union halls and other major gathering places of unemployed workers can host available community services to assist in the well-being of workers through blood pressure programs, cholesterol
screening, and blood sugar evaluation at minimal or no cost to individuals on a regular basis. Contracts for health services can be made available through local hospitals or with those professionals who regularly operate within the community. In addition, a profile can be obtained on workers by, Health Services for future reference and application. Encouragement can be offered to workers to join community health centers or other organized settings that can facilitate physical fitness.

The Michigan Department of Health Promotion may allow for expenditure of funds for fitness-related activities under federally funded programs guided by federal regulations. The state, which is interested in special groups such as the unemployed workers, may also offer the private sector a tax incentive for developing physical fitness programs for employees or recently dismissed employees who have lost their job due to no fault of their own. Health and life insurance policies could be made available with reduced premiums for those who participate in regular, vigorous, physical activity. The total plan would be in keeping with the specific 1990 Health Objectives set for the nation by the federal government's Public Health Service that included improved health status, reduced risk factors, increased public/professional awareness, improved services/protections, and improved surveillance and evaluation (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, 1986a).

The Flint community in the past has regarded the presence of General Motors as a great benefit, but more recently understands the need for diversification of the local economy. Flint, Michigan, as well as many other communities across the United States, is hurt when sales are
down in the auto industry, and will continue to be affected by GM's
efforts to recover and be more competitive in the global automotive
market. Recommendations are for continued efforts toward diversifica-
tion in Genesee County and the surrounding communities.

A 1990 study (University of Michigan & Widgery & Associates), A
Decade of Crisis in Genesee County, agrees with increasing diversifica-
tion of the local economy but says:

It is exceedingly difficult to attract new industries from
outside the area because of the overwhelming dominance of
General Motors in this market. The better policy is to help
businesses that are already here retain their position—and
grow and expand. It is also a better policy to encourage and
support new businesses that show promise in exploring their
products and services outside of Flint and Genesee County.
(p. 4)
APPENDICES
Appendix A

Letter to Participants
Lorraine M. Oginsky, R.N.
2800 Byron Rd.
Lennon, Michigan 48449

To whom it may concern:

As a participant in the study of the impact of plant closings on automobile workers and their families being conducted by the UAW's Michigan Health and Social Security Research Institute, we would like to talk to you again this fall. We care about how you feel, what you think about continuing changes in the employment area and about issues related to being out of a job. We particularly want to know the things that help you cope with the changing workplace situation. Mrs. Lorraine Oginsky, R.N., will be coordinating this phase of the study.

We are asking three things of you: first, that you complete a Health Risk Appraisal, at no cost to you, at which time we will check your blood pressure, blood sugar and cholesterol, and ask several questions about your current state of health. In return for your cooperation we will send you a summary of the key conditions that affect your health, or telephone recommendations as to how you can improve your health through changes in your lifestyle. Second, we would like you to answer questionnaires concerning how you cope with life stressors like unemployment or displacement from your job. This will take about 20 minutes. Third, you will be asked to discuss how plant closure or displacement affects you and your family on a taped recording. As before, all information will remain confidential. Recording will be in addition to the questionnaires and will be on a voluntary basis.

We will be calling you to set up a date and time for the survey. If you do not have a phone listed, please use the enclosed postcard to let us know how to get in touch with you. If there has been a change of address or phone listing, please let us know. Thank you for your continuing cooperation.

Sincerely,

Patricia C. Alting, Project Director
Plant Closing Study
Appendix B

Plant Closing Questionnaire
Plant Closing Questionnaire

INTRODUCTION:

Before we begin the interview, I want to thank you very much for your participation. I also want to assure you that this interview is completely voluntary and that all your responses will be completely confidential. If at any time I come to a question that you do not want to answer, let me know and I will go on to the next question . . . .

SECTION A: LISTING AND EMPLOYMENT STATUS

A1. First, who lives with you in your home? I don't need to know their names, just their relationship to you and their ages. First, how old were you on your last birthday?

<table>
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<tr>
<th>PERSON</th>
<th>MALE (1)</th>
<th>FEMALE (2)</th>
<th>AGE</th>
<th>DISAB.</th>
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<tr>
<td>RESPONDENT</td>
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A2a. (Are any of these people/Is this person) disabled in any way? (FOR ANY "YES" ANSWER, MAKE AN "X" IN CORRECT DISABLED COLUMN ABOVE)
A2. What is your current job status? Are you ...

1. Working at GM
2. Working at another job full-time
3. Working at a part-time job
4. In training program or school □
7. Other (SPECIFY): ____________
   GO TO A2

A2a. How do you feel about your present job? Are you

1. Very satisfied
2. Somewhat satisfied
3. Neither satisfied nor dissatisfied
4. Somewhat dissatisfied
5. Very dissatisfied

A2b. How long have you been working at your present job?

# MONTHS

A2c. How is your present job security? Would you say it's good, bad, or don't you know?

1. GOOD
2. BAD
8. DON'T KNOW

A3. How many years of seniority do you have with GM?

# YEARS

A4. How many years of service do you have with GM?

# YEARS
A5. CHECKPOINT: (SEE A2)

☐ 1. R IS WORKING AT GM
☐ 2. ALL OTHERS → GO TO A9

A6. How many times, if any, have you been bumped in the last two years?

# TIMES

A7. How many times have you been involuntarily laid off (K released) from GM altogether?

☐ 0. NEVER

# TIMES

A7a. When was the last time? DATE

A8. How likely is it that you'll be involuntarily laid off from your job in the plant in the next two years?

☐ 1. Very likely
☐ 2. Somewhat Likely
☐ 3. Not at all likely

ASK EVERYONE:

A9. Do people criticize you when you are out of a job?

YES NO (1) (5)

A10. Do you accept the situation (lay-off) the way it is?

A11. Do you go on as though no problem exists?

A12. Do you tell yourself things could be worse?

A13. Do you believe that what happens to you in the future mostly depends on you?

A14. Do you feel there is little you can do to change many of the important things in your life?
A15. This next question relates to your being a worker at Fisher One when it was shut down. How does it feel to be a displaced worker?


A16. When Fisher One closed, would you say that it was a threat, a loss, or a challenge to you?

□ 1. THREAT
□ 2. LOSS
□ 3. CHALLENGE
□ 7. OTHER (SPECIFY):____________________

A17. How do you feel about your life outside of work? Are you ...

□ 1. Very satisfied
□ 2. Somewhat satisfied
□ 3. Neither satisfied no dissatisfied
□ 4. Somewhat dissatisfied
□ 5. Very dissatisfied


SECTION B: HEALTH

B1. In general, would you say your health is excellent, good, fair or poor?

□ 1. EXCELLENT
□ 2. GOOD
□ 3. FAIR
□ 4. POOR
B2. How do you feel about your physical health at the present time? Are you ...

☐ 1. Very satisfied
☐ 2. Somewhat satisfied
☐ 3. Neither satisfied nor dissatisfied
☐ 4. Somewhat dissatisfied
☐ 5. Dissatisfied

B3. How would you compare your health to other persons your age? Is it ...

☐ 1. Better
☐ 2. Worse, or
☐ 3. The same

B4. How often do you engage in exercise? Would you say ...

☐ 1. Very often
☐ 2. Often
☐ 3. Not very often
☐ 4. Never

B5. How often do you participate in individual or team sports? Would you say ...

☐ 1. Very often
☐ 2. Often
☐ 3. Not very often
☐ 4. Never

B6. How many hours of sleep per day do you usually get?

# HOURS
B7. Do you take tranquilizers or sleeping pills?

1. Yes
5. No

B8. Is there anyone in particular who helps you in getting through difficult periods in your life, like when you are unemployed or when you feel life is stressful?

1. YES → B8a. Who is that (role/relationship)?
5. NO

B9. In general, when you have a personal problem, how often do you talk to someone about it? Would you say ...

1. Very often
2. Often
3. Not very often
4. Never

B10. How do you take your mind off your personal problems?
Do you ...

1. Work hard at some task in the house or yard
2. Increase your social activities
3. Commune with nature (fish, hike, etc.)
4. Enjoy your hobbies
7. OTHER (SPECIFY):
Here is something a little different. Please answer yes or no in response to the following statements.

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
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<tbody>
<tr>
<td>B11. Do you feel you have a number of good qualities?</td>
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<td>B12. Do you feel that you do not have much to be proud of?</td>
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<tr>
<td>B13. Do you get down on yourself?</td>
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<tr>
<td>B14. On the whole, are you satisfied with yourself?</td>
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<td>B15. Have you ever thought life is not worth living?</td>
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<td>B16. Have you ever thought about suicide?</td>
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<tr>
<td>B17. Do you feel like you have to start life all over?</td>
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<td>B18. In general, how much are your family, friends and/or co-workers willing to listen to your work-related problems? Would you say...</td>
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</tbody>
</table>

☐ 1. Very often
☐ 2. Often
☐ 3. Not very often
☐ 4. Never
SECTION C: PROBLEMS

Which of the following problems have affected you most in the past 6 months? (ACCEPT ALL "YES" ANSWERS.)

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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</table>

C1. Financial problems?

C2. Problems in your relationship with (partner/husband/wife)?

C3. Problems with the children?

C4. Problems in relationships with others (friends, neighbors, etc.)

C5. Personal health problems?

C6. Family health problems?

C7. Problems in arranging child care?

C8. Transportation problems?

C9. Sexual difficulties?

C10. OTHER (SPECIFY): ____________________
What is your most important problem today? (PAUSE, THEN READ IF NECESSARY "I'll read you a list of problems people have and after I'm through, please select only one problem.")

☐ C11. Money for food
☐ C12. Living conditions and the home
☐ C13. Money for clothing
☐ C14. Transportation
☐ C15. Relationship with partner or spouse
☐ C16. Problems with the children
☐ C17. Child care
☐ C18. Lack of recreation/social activities
☐ C19. Money to meet bills
☐ C20. OTHER (SPECIFY):

The following list contains some things people do when faced with stress. Which of the following do you do? (MARK EACH "YES" ANSWER.)

☐ C21. Smoke
☐ C22. Drink
☐ C23. Exercise
☐ C24. Play cards and games
☐ C25. Participate in sports
☐ C26. Go dancing
☐ C27. Read a lot
☐ C28. Talk to old co-workers
☐ C29. Sleep a lot
☐ C30. Eat too much
☐ C31. Eat too little
☐ C32. Take drugs to calm the nerves
☐ C33. Keep busy to avoid thinking
☐ C34. Get into a training program or school
☐ C35. Look for a new job or career change
☐ C36. OTHER (SPECIFY):
In the last twelve months, did any of the following things happen to you?

<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
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</thead>
<tbody>
<tr>
<td>C37. Death of your spouse or partner?</td>
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<td>C38. Death of a child?</td>
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<td>C39. Death of close friend or relative?</td>
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<td>C40. Pregnancy or birth of a child?</td>
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<td>C41. Major personal illness or injury?</td>
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<td>C42. Were you evicted?</td>
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<td>C43. Were you arrested for anything?</td>
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<tr>
<td>C44. Were you involved in a court case?</td>
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</table>

Are you covered by ...

<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
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<tr>
<td>C45. Medical insurance?</td>
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<td>C46. Dental insurance</td>
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<tr>
<td>C47. Life insurance</td>
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<tr>
<td>C48. Automobile insurance?</td>
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</tbody>
</table>
C49. Are you receiving TRA?
   □ 1. YES
   □ 5. NO

C50. Do you have a scholarship of any type?
   □ 1. YES
   □ 5. NO

C51. In the last twelve months, have you lost any personal possessions due to lay off and unemployment, like your car or furniture?
   □ 1. YES
   □ 5. NO

C52. Is your spouse or any other adult member of the household working?
   □ 1. YES
   □ 5. NO
SECTION D: UAW/GM HUMAN RESOURCE CENTER

D1. The UAW and GM jointly operate Human Resource Centers which have programs designed to help automobile workers. Have you ever visited the Human Resource Center in Flint?

☐ 1. YES ☐ 5. NO—GO TO D9

D2. Who told you about the center?

PERSON BY ROLE

Here is a list of services the Center offers. Please tell me if you are aware of the service after I read each item. (MARK "YES" ANSWERS ONLY.)

☐ D3. EAP Program
☐ D4. Placement and Training
☐ D5. Pre-Retirement Planning
☐ D6. Tuition Assistance Plan (TAP)
☐ D7. Skill Development and Training

D8. Have you ever used any of these programs?

☐ 1. YES ☐ 5. NO—GO TO D9

D8a. Tell me a little about the program. (BE SURE TO RECORD NAME OF PROGRAM.)

D9. Do you think opportunities for additional training and development are equally available to everyone?

☐ 1. YES ☐ 5. NO—D9a. Why do you say so?
SECTION E: DEMOGRAPHICS

We need to update some information we obtained from you in earlier interviews ...

E1. What is your current marital status? Are you ...

☐ 1. Married
☐ 2. Cohabiting
☐ 3. Separated
☐ 4. Divorced
☐ 5. Widowed
☐ 6. Never married

E2. What is the highest grade you completed?

01 02 03 04 05 06 07 08
09 10 11 12 13 14 15 16 OR MORE

E3. Have you had any additional training?

☐ 1. YES ☐ 5. NO -> GO TO E4

E3a. Please tell me a little about the training ...

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
HAND CARD TO RESPONDENT:

E4. Here is a card which lists categories of income. Please tell me the letter that describes how much you earned from your job last year before taxes and other deductions were made. (ENTER LETTER IN SPACE BELOW.)

LETTER

E5. Please tell me the letter that describes your total household income from all sources last year before taxes and other deductions were made.

LETTER

E6. Please turn the card over ... Which of these describes your total family savings?

LETTER

E7. And now for my final question ... How do you feel you can be helped best during this life transition, and by whom?
Appendix C

Approval Letters From Human Subjects
Institutional Review Board
Date: February 6, 1991
To: Lorraine Oginsky
From: Mary Anne Bunda, Chair
Re: HSIRB Project Number: 90-11-15

This letter will serve as confirmation that your research protocol, "A Descriptive Study of Michigan Auto Workers (UAW) and their Response to Plant Closures, Unemployment and Displacement" (as revised), has been approved under the exempt category of review by the HSIRB. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the approval application.

You must seek reapproval for any changes in this design. You must also seek reapproval if the project extends beyond the termination date.

The Board wishes you success in the pursuit of your research goals.

cc: David Cowden, Educational Leadership

Approval Termination: February 6, 1992
Date: August 22, 1991
To: Lorraine M. Oginsky
From: Mary Anne Bunda, Chair
Re: HSIRB Project Number 90-11-15

This letter will serve as confirmation that the changes in your research protocol, "A descriptive study of Michigan Auto Workers (UAW) and their response to plant closures, unemployment and displacement" were received (per your August 19, 1991 memo) and approved by the HSIRB on August 22, 1991.


