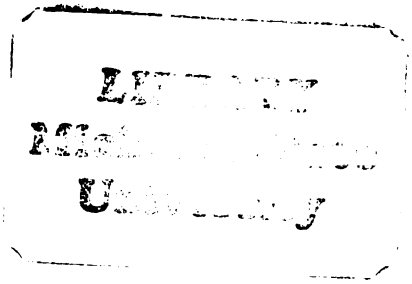

This is to certify that the

thesis entitled

BURNOUT: CAUSATION AND MEASUREMENT

presented by

Beth Rubin

has been accepted towards fulfillment
of the requirements for

M.A. degree in Psychology

Ben Schneider

Major professor

Date 11/2/87

BURNOUT:

CAUSATION AND MEASUREMENT

By

Beth Rubin

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF ARTS

Department of Psychology

1982

ABSTRACT

BURNOUT:
CAUSATION AND MEASUREMENT

By

Beth Rubin

This thesis examines the literature on worker burnout and presents an integrative definition of the construct. A general model of the antecedents and consequences of burnout is explained. Six hypotheses of the relationships of burnout and timing control, role strain and job satisfaction are developed, and combined in a process model of burnout.

An affectively oriented measure of burnout is developed by exploratory factor analysis, and its structural integrity and reliability are supported by confirmatory factor analysis on a second sample. The six hypotheses are tested and supported. Burnout, role strain, job dissatisfaction and lack of timing control are significantly intercorrelated. Burnout and job dissatisfaction appear to be overlapping constructs.

Path analysis of the process model suggests that burnout results from role strain, job dissatisfaction and lack of control over the timing of work.

ACKNOWLEDGEMENTS

I would like to express my gratitude to all the people without whom this thesis would not have been completed. First, I wish to thank all the members of my family for their unceasing belief in me, and their consistent support, both financial and emotional.

I also want to thank the members of my committee, Ben, Neal, Mary and Mary, for their guidance, direction, and the knowledge they shared with me.

This thesis would never have been completed were it not for all my friends, who listened to me, consoled me, and encouraged me to continue. Likewise, I wish to thank Mr. Rob Allemier and the Lansing American Tackwondo Association; the ATA was one of the greatest sources of strength I had, and inspired "perseverance" and "indominable spirit" in this endeavor.

Most of all, I want to thank Mary Van Sell for all she has done, but the words needed to describe her gifting and my feelings would not fit onto this page. Suffice to say that, Mary, I am Galatea to your Pygmalion; this erstwhile lump of marble has shape, form and breath in this academic world due to your skill, effort, belief and caring.

Thank you for all that you have done.

--Beth Rubin

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I. INTRODUCTION

This thesis examines the phenomenon of worker burnout and tests causative models of it. The literature on burnout is reviewed, and a definition and description based on previous research is presented. A general model of the potential antecedents and results of burnout is explained. A specific causal model is presented, and tested by path analysis.

This section introduces the construct of worker burnout, and gives an overview of the conceptual and measurement issues that will be explored in this thesis. Burnout is defined, and its relationships with other variables of interest are presented. The importance of studying burnout and the specific purpose and contribution of this study are described. Finally, the other variables salient to the process of burnout are introduced.

Importance of Burnout

The subject of worker burnout has received increasing attention and concern in both practitioner and academic publications in recent years. Since the introduction of the term in the mid-1970's, the number of articles published in mass-appeal journals has mushroomed. Such varied

publications as Law and Order, Child Care Quarterly, and Journal of Occupational Behavior have featured articles on the subject. Workshops on burnout and its avoidance have become increasingly popular (Cherniss, 1980, 1981); more and more managers and executives in human service fields are showing an awareness of and interest in the problem (Cherniss, 1981; Minnehan and Paine, 1981).

In 1981, the first National Conference on Burnout was held, which brought together for the first time the pre-eminent researchers and students of burnout. The papers presented there represented the range of orientations toward the analysis of burnout, from the "Basic Economic and Legal Consequences of Burnout" (Minnehan and Paine, 1981) to the development of an "ecological framework" of burnout (Caroll and White, 1981). This conference represents an attempt to unify the concepts and terms which have been examined in the study of burnout. It also indicates the widespread interest, both on the part of business practitioners and academics, and underscores the importance of understanding the problem.

Regardless of any "faddish" element which may be present in the study of burnout, it remains an important topic for research. It is strongly related, both theoretically and empirically, to job stress, job dissatisfaction and job performance. The construct may help to clarify the relationship among the three variables. This relationship

has received much attention with few conclusive results (Van Sell, Brief and Schuler, 1981). In many cases, especially in samples of human service workers, the link between job stress and job dissatisfaction as antecedents to poor job performance may be explained by the occurrence of burnout.

In addition to the theoretical importance of burnout, the construct has great practical importance: burnout is very costly for the individual, the organization, and, where applicable, the clients. These costs range from the concrete, monetary expenses of health insurance, sickness, accidents, turnover, decreased performance, lawsuits and administrative costs, to the abstract, personal costs of conflict with family members, emotional angst, depression and loss of self esteem (Minnehan and Paine, 1981).

Purpose of this Study

This study reviews the multiple theoretical and methodological conceptualizations of burnout, and unifies several related definitions into one. It then describes in detail the elements that comprise this concept. Individual, interpersonal, job, task, and organizational variables which correlate with it are reviewed, and organized into a general model of the antecedents and consequences of burnout. Several specific variables which have theoretical and/or

empirically supported relationships to burnout are described, along with the relevant literature. These variables, role strain, global job satisfaction, and control over the timing of work, form the basis of a process model of burnout. Specific hypotheses about their relationships are developed. Methods of measuring and testing both the model and the hypotheses concerning the process of burnout are then described.

The need for a unifying definition and conceptualization of burnout has been discussed in detail by Maslach (1981), and is obvious from even a casual perusal of the literature. Table 1 lists a few of the many definitions which have been used in published analyses of burnout (Maslach, 1981). Because each researcher defines the phenomenon of burnout differently, and most of the research on burnout has been in the form of case studies (Freudenberger, 1975; Maslach, 1976, 1978; Kahn, 1978), the studies vary widely in content. There are no hard definitional lines between a case of burnout and one of job dissatisfaction, emotional breakdown, or inappropriate career choice.

Due to the overabundance of case studies, sweeping generalizations about burnout have been made from as small a sample size as one. This study is one of the few to empirically examine an objectively measured conceptualization of burnout through correlational and regression

TABLE 1

DEFINITIONS OF BURNOUT

"A syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among individuals who do 'people-work'." (Maslach, 1981)

"A process in which a previously committed professional disengages from his/her work in response to stress and strain experienced on the job." (Cherniss, 1980)

"A state of physical, emotional, and mental exhaustion marked by physical depletion and chronic fatigue, feelings of helplessness and hopelessness, and the development of a negative self-concept and negative attitudes toward work, life, and other people." (Pines, 1981)

"An ongoing process that varies both in its severity and in the number of times the cycle repeats itself...a series of predictable stages...enthusiasm...stagnation... frustration...apathy...burnout means apathy." (Edelwich & Brodsky, 1981)

"A malaise of the spirit. A loss of will, an inability to mobilize interest and capabilities."

"A pervasive mood of anxiety giving way to depression and despair."

"To deplete oneself. To exhaust one's physical and mental resources..."

analyses. It is also one of the few to use large samples of employees of several organizations.

This paper also presents the evolution of an affectively oriented measure of burnout. Several other concrete, paper and pencil measures of burnout have been developed; one of these has extensive reported reliability and validity coefficients, and has been used by several researchers in the field (Maslach and Jackson, 1981; Golembiewsky and Munzenrider, 1981). This measure, the Maslach Burnout Inventory (MBI), focuses on cognitive reactions to the work situation, the worker's performance, and relationships with clients. This is congruent with Maslach and Jackson's definition of the burnout construct, but not with the construct as defined in this thesis. The measure of burnout presented here focuses on the affective, rather than the behavioral or cognitive, aspects of burnout. This paper examines whether these affective aspects of burnout parallel the cognitive aspects tapped by the MBI in their relationships with antecedent variables.

This study endeavors to combine empirical research with the multiple approaches to burnout found in the literature. It describes burnout theoretically and operationally, derived from an empirical testing of the multiple dimensions of burnout described by researchers with varied orientations and conceptualizations of the construct. Like many of the existing studies, it goes beyond the definition of the

concept to posit the process through which burnout evolves; unlike other existing studies, it empirically tests competing hypotheses with regression analyses.

The next two sections present the construct of burnout in detail, including further description of the conceptual confusion underlying the research. Several views of the construct are combined in a factor analysis of multiple hypothesized aspects of burnout, to produce a single unifying concept. Many of the variables which have been posited as causing or resulting from burnout are reviewed, and are organized into a general model of antecedents and consequences. These variables are categorized as individual factors, interpersonal factors, job and task factors, and organizational factors.

The specific variables of role strain, job satisfaction and control of the timing of work are selected from the literature for analysis. Time control is reviewed in depth, and its relationships to stress coping strategies are described. The relationships of these variables and burnout are explored, and specific hypotheses are derived. These form the basis of the causal model of burnout which is presented. The methods for testing the models are then described, along with the subjects studied and the procedures used. The evolution of an affective paper-and-pencil measurement of burnout is described. The other measures are also presented, along with specific hypotheses and statistical

analyses used to test them. Conclusions are drawn from these results, and suggestions are offered for future research.

Summary

This section introduced the concepts which will be analyzed in this study: burnout and its relationships in the role strain, job satisfaction, and time control. It described the importance of understanding burnout, and the unique contribution which the proposed study will make to the present knowledge about the area. It briefly outlined the purpose and procedures of this research, and then previewed the model that is tested.

II. REVIEW OF THE LITERATURE

This section begins with a literature review of the burnout concept, and organizes the variables which have already been researched into a general framework of burnout's antecedents and consequences. The confusion surrounding the concept of burnout is described, and a solution that integrates many of the definitions is suggested. Several variables which have been related to burnout are examined, and the research on their interrelationships is reviewed. A causal model and specific hypotheses suggested by the research are presented.

The Burnout Construct

Conceptual Confusion

The present state of burnout research is one of confused definitions and operationalizations (Maslach, 1981). The confusion is due to the recency of the topic, the overwhelming number of case studies, and the flashy nature of the name "burnout" itself. The word has multiple meanings in everyday speech; everyone has an idea of what it is like to be "burned out", but this may refer to a particularly hard day, week, time in one's life, or way of life.

According to Maslach (1981), the only elements common to all definitions of burnout are the following:

1) burnout is an individual-level event, process or syndrome;

2) burnout is an internal process of a psychological nature; and

3) burnout involves negative consequences, problems, distress, discomfort, dysfunction, or some combination thereof.

Some authors speak of burnout as a process (Cherniss, 1980; Edelwich and Brodsky, 1981; Freudenberger, 1975, 1977, 1981), some as a syndrome (Maslach, 1981; Kahn, 1978), and some as a state (Pines, 1981). Some include behavioral factors, such as personal accomplishment (Maslach, 1981a, Maslach and Pines, 1977, Maslach and Jackson, 1979, 1980) and physical exhaustion (Pines, 1981) as a part of the burnout construct. Most researchers, however, describe attitudinal and/or affective characteristics such as "negative self-concept and ... attitudes toward work life and other people" (Pines, 1981), "emotional withdrawal" (Cherniss, 1980). "alienation from the job" (Daley, 1979), and "cynicism and negativism and a tendency to be inflexible" (Freudenberger, 1977).

Other definitional contrasts are evident in the domain of potential victims of burnout. Some theorists include only "individuals who do 'people-work'" (Maslach, 1981), or professionals (Cherniss, 1980), "workers in the world of helping institutions" (Freudenberger, 1977) or "human service

professionals" (Daley, 1979). Others do not limit the domain of victims to any one particular type of job or organization (Freudenberger, 1975; Pines and Aronson, 1981; Golembiewski et al., 1981). Another element that sometimes appears is a hypothesized cycle of burnout and recovery (Edelwich and Brodsky, 1981), as opposed to a linear progression that results in severely burned-out workers who have a higher probability of leaving the work environment than other workers (Cherniss, 1980; Shinn, 1981).

Some of the many elements that have been used to characterize burnout are: emotional, mental, or physical exhaustion (Pines and Kafry, 1981), apathy (Edelwich and Brodsky, 1981), withdrawal (Cherniss, 1980), anomie (Chamberlin, 1978), decreased perceived personal achievement, depersonalization (Maslach, 1981), negativism, inflexibility, condescending attitude (Freudenberger, 1977), inappropriate attitudes (Kahn, 1978), and changes in attitudes towards work and clients (Cherniss, 1980).

There is somewhat more agreement on the idea that burnout is the result of job stresses and their resultant strain on the worker (Cherniss, 1980; Golembiewski et al., 1981, Maslach, 1978; Kahn, 1978; Pines and Kafry, 1978; Sweeney, 1981; Shinn, 1981). Although burnout and job stress have been found to correlate (e.g., Maslach, 1980; Jackson and Maslach, 1981), there is no empirical evidence for a causal relationship. Job stress is usually defined as the state

"when environmental demands tax or exceed the resources of the person" (Lazarus and Launier, 1978). Strain has been defined as "any deviation from normal responses in [a] person" (Caplan et al., 1975); an alternative definition used is "the immediate, short-term emotional response to ... imbalance, characterized by feelings of anxiety, tension, fatigue, and exhaustion" (Cherniss, 1980). Job strains have also been operationalized as job dissatisfaction, boredom, depression, and somatic complaints; these overlap with several of the definitions of burnout.

Many characteristics of individuals, tasks, environments and interpersonal relationships have been hypothesized to relate to burnout. Due to the lack of consensus on a definition of what exactly burnout is, however, many of these characteristics are posited by different researchers as being elements of the burnout construct, causes of burnout, moderators of burnout, and the result of burnout. For example, Cherniss (1980) presents exhaustion as a part of job strain, which he posits as a cause of burnout; Pines and Kafry (1981) define burnout as the combination of three types of exhaustion: mental, emotional and physical. They measure those three aspects as an index of burnout. Maslach (1978) refers to "emotional exhaustion resulting from the stress of interpersonal contact" as burnout. This factor is one of the three subscales in the Maslach Burnout Inventory. Kahn refers to exhaustion as an

"uncomfortable physical symptom" that is "often associated" with burnout (Kahn, 1978).

Multi-stage Conceptualizations

Several theorists have suggested multi-stage models of burnout, wherein the worker proceeds from one to the next in chronological order (Cherniss, 1980; Golembiewski and Munzenrider, 1980; Edelwich and Brodsky, 1981). Cherniss (1980) presents a three-step process, the culmination of which he defines as burnout. The first step is an imbalance between resources and demands (stress). This is followed by a short-term emotional response, characterized by anxiety, tension, fatigue and exhaustion, which he defines as strain. The third and last stage is a set of changes in attitude and behavior, that include emotional detachment, withdrawal, cynicism and rigidity. He does not present empirical evidence to support this theory, however.

Edelwich and Brodsky (1981) conceive of burnout as a cyclical process, in which the worker progresses from one stage to the next, and runs through the cycle several times in his/her career. The first stage is one of enthusiasm and positive affect.

> This is followed by a period of stagnation. People go through a series of predictable stages in relationship to their work. The first is enthusiasm, a period of high hopes, high energy, unrealistic expectations, and oversimplification with the job. The second is stagnation, in which personal, financial, and career development needs begin to be felt.

> This is followed by frustration, in which one questions one's effectiveness and the value of one's efforts in the face of obstacles to meaningful accomplishment. Frustration ... can lead either back to enthusiasm ... or down to the fourth stage of apathy, and abyss of chronic indifference that defies most efforts at intervention.
>
> (Edelwich and Brodsky, 1981, p. 202)

Edelwich and Brodsky specifically define the last stage of the four as being burnout: "Frustration is not burnout. Burnout means apathy. Frustration is the experience of learning to cope with limitations.... Apathy, although common, is not normal." (Edelwich et al., p. 202.)

Golembiewski and Munzenrider (1980) adapt Maslach's conceptualization of burnout, but turn it from a single-stage model to a multi-stage one. They theorize that Maslach's three elements of burnout occur in a sequential order. Workers first become alienated from clients, viewing their clients in depersonalized ways, as non-people; they then perceive a lack of personal accomplishment; finally, they become emotionally exhausted. Golembiewski and Munzenrider (1980) performed correlational analyses, with paired comparisons of levels of different MBI subscales. The results support the hypotheses, such that subjects who scored highly on more "advanced" stages of burnout scored higher on other measures of burnout and strain.

There are several aspects of this study which decrease its validity as a true test of a multi-stage model. First, the pair comparisons indicate that the more of the

subcategories of burnout a worker scores highly on, the more overall burnout s/he seemed to experience. This is not proof that s/he moves from one stage of burnout to the next, although it is interpreted as such. Second, the authors used Maslach's measurement of burnout, which is aimed specifically at human service workers and theoretically limited to that population; however, they administered it to employees who were not human service workers. The depersonalization scale of the MBI refers specifically to depersonalizing clients. Golembiewski and Munzenrider (1980) use a sample of workers in "a product-line division" in an "industrialized setting", and use depersonalization in reference to co-workers. This ignores the concept of responsibility for clients who are no longer viewed as people, with the attendant guilt and decreased performance that was intrinsic to the original measure.

No other multi-stage model has received any type of test; no longitudinal or path analyses have been performed on any process model of burnout. Both the theoretical and empirical support for multiple stages of burnout are minimal, leading to the rejection of the multi-stage conceptualization.

The Synthesis of Multiple Perspectives on Burnout

The present conceptualization of burnout, used as the focus of the causal model of burnout, is primarily adapted from Cherniss (1980), Maslach (1981), and Pines and Aronson

(1980). Cherniss describes "a transactional process that begins with job stress. Stress contributes to strain, and efforts by individuals to cope with that strain lead to ... burnout." Cherniss, however, conceptualizes burnout as this process itself; the present conceptualization defines burnout as the syndrome resulting from this process. Cherniss defines burnout in terms of emotional detachment and withdrawal; the present model defines other affective and attitudinal reactions. Lastly, Cherniss limits burnout to occurring in "human service" workers; the present model does not.

Cherniss describes in detail the severe stresses that exist for human service workers; case study after case study documents the difficulties involved in their work (e.g., Maslach, 1976; Daley, 1979; Kermisch and Kushin, 1969; Freudenberger, 1975). However, there are undeniably other occupations typified by extreme levels of stress, such as air traffic controllers. Workers in these professions, however, may not have as large a decrease in the quality of their performance due to the affective and attitudinal changes involved in burnout. The negative affective changes, while uncomfortable and disturbing, would not automatically decrease the performance level of a secretary or an air traffic controller as much as it might that of a teacher, a therapist or a police officer. Others may be no less burned out, but the effects may not be so noticeable due to the

type of work that is performed. Human service work depends on good communication, openness, and trust, which are very likely to suffer from the negative affect involved in burnout.

Maslach refers to burnout as a syndrome of negative attitudes and affects, which she lists as depersonalization, emotional exhaustion and decreased personal competence. Golembiewski describes burnout as "implying inadequate coping with job stressors and their derivative strain ... which ... surfaces in 'inappropriate attitudes toward clients and toward self; often associated with uncomfortable ... emotional symptoms'" (Golembiewski, 1981, quoting Kahn, 1978). He also includes physical symptoms along with the emotional ones in his conceptualization of burnout; the present model portrays physical effects as second level results of burnout, rather than as part of the construct itself. A worker can be burned out and not be physically exhausted.

Coping Strategies

"Coping refers to ... efforts taken to manage demands and conflicts which tax or exceed a person's resources.... Coping may be cognitive, behavioral, or a combination" (Cherniss, 1980, p. 45). Lazarus and Launier (1978) suggest that the type of situation in which a person operates affects what type of coping behavior s/he will tend to use.

Situations of high conflict, ambiguity or helplessness will result in intrapsychic, passive coping strategies; either the person is seeking information, s/he is incapable of taking effective action to reduce stresses in the environment, or the situation is too unclear for effective action to be identified.

Pines and Aronson (1980) empirically examine multiple means of coping with stress, and find that direct and active coping strategies have a lower correlation with Pines' (1978) Tedium measure of burnout. The strategies with the highest correlations with measured burnout are indirect and passive ones, such as taking drugs or using alcohol. Pines and Aronson develop a two-by-two matrix that categorizes all the strategies along two orthogonal, dichotomous variables; activity/passivity and directness/indirectness. This matrix is presented in Figure 1. Direct strategies are defined as those applying to the external environment, as opposed to indirect ones which apply to one's own behavior or emotions. Active strategies are those which entail confronting or attempting to change the source of stress or oneself, as opposed to passive ones which entail avoidance or denial by cognitive or physical means.

Burnout Defined

One of the more commonly presented causes of the burnout construct which has received correlational support is

	ACTIVE	PASSIVE
DIRECT	*Changing the source of the stress *Confronting the source *Adopting a positive attitude	*Ignoring source of of the stress *Avoiding source *Leaving
INDIRECT	*Taking about the source of stress *Changing self *Getting involved in other activities	*Alcohol or drugs *Getting ill *Collapsing

Figure 1. Strategies for coping with stress (Pines and Aronson, 1980).

the existence of job stressors, such as overload, difficult client population, difficult environment, conflicting demands, red tape, paper work, role conflict and ambiguity (Pines, 1981; Maslach and Jackson, 1979, 1980), which result in worker strain. There is also evidence supporting the idea that the relationship between strain and burnout is moderated by the type and success of the coping strategies used (Shinn, 1981; Pines and Aronson, 1981).

Following the research, a preliminary definition of burnout is evolved: burnout is the syndrome of negative changes in affects and attitudes which result from the ineffective coping with the strain produced by job stresses.

The specific affects and attitudes which undergo negative changes are specified later in this thesis; they were determined by empirical analysis of this definition.

Antecedents and Consequences of Burnout

Many factors have been posited as relating to burnout, and can be categorized into antecedents and consequences of burnout. Although many of the factors may act as moderators, there is not enough agreement as to the definition of the burnout construct itself to make such a complicated analysis fruitful. The antecedents of burnout are organized into a categorization system based on levels of analysis: individual, interpersonal, job/task and organizational factors. The consequences are organized into the categories of interpersonal variables and three types of individual variables: affective/attitudinal, health-related, and work behaviors. These combine to produce organizational level variables, such as organizational costs (Minnehan and Paine, 1981). This categorization system is presented in Figure 2.

Theoretical Antecedents

According to the literature, burnout results from many different factors. A partial listing of these is presented in Table 2. Some of the individual characteristics which have been proposed to be associated with burnout are single marital status, female gender, inadequate training, and having unrealistic job expectations (Edelwich and Brodsky, 1981; Cherniss, 1981; Wilder and Plutchik, 1981). Most hypothesized antecedents of burnout are gathered under the

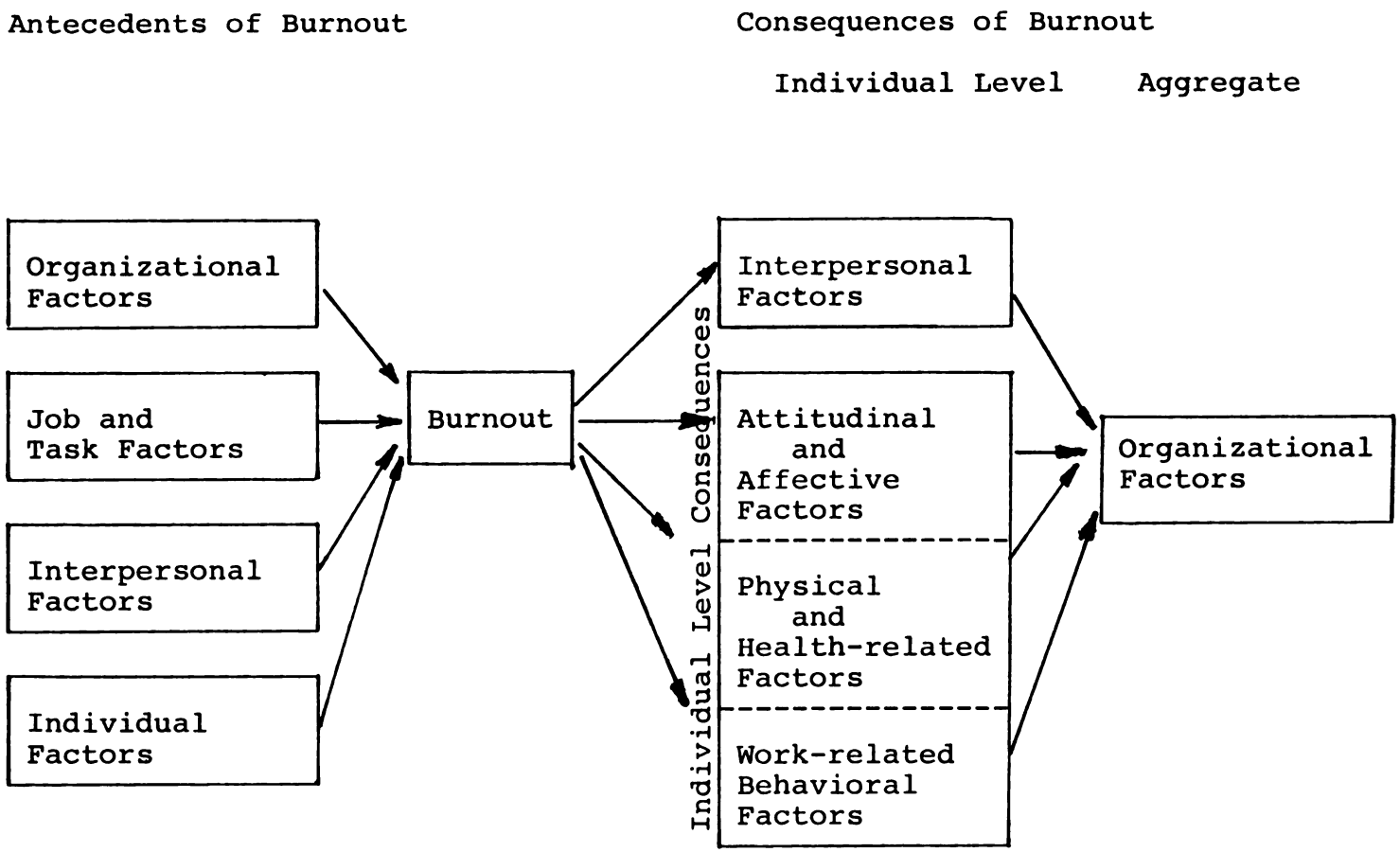


Figure 2. General model of antecedents and consequences of burnout.

TABLE 2

THEORETICAL ANTECEDENTS OF BURNOUT

ORGANIZATIONAL FACTORS

Formalization
Centralization
Bureaucratization

JOB AND TASK FACTORS

Control of work environment
Ability to take "time-outs" from stressful task
Availability of training in job
Workload
Specific task performed
Physical environment (noise level, crowdedness)
Autonomy
Task variety
Task identity
Task significance
Closeness of supervision
Competence of supervision
Feedback from the job itself
Feedback from supervisors or peers

INTERPERSONAL FACTORS

Communication with peers or supervisors
Support from peers or supervisors

INDIVIDUAL FACTORS

Bureaucratic/professional orientation
Stress tolerance
Personality type (A vs. B)
Amount of education
Neurotic anxiety
Locus of control
Perceived role conflict
Perceived role ambiguity
Flexibility
Age
Sex
Marital status
Self esteem
Perceived competence

umbrella of job stresses; however, these vary in perspective from author to author. Role strains have been suggested, such as role overload (Carroll and White, 1981), and various aspects and dimensions of role conflict (Carroll and White, 1981; Shinn, 1981; Golembiewski, 1981). Task factors such as insufficient autonomy, flexibility in job and scheduling, ability to take time-outs, feedfack, participation in decision making, control over environment, boundary spanning positions, and type of client (Edelwich and Brodsky, 1981; Golembiewski, 1981; Shinn, 1981; Carroll and White, 1981; and Pines, 1981) have all been discussed as causing burnout.

Interpersonal factors such as relations with co-workers, climate of trust, quality of supervision, and distance from role sender (White, 1981; Shinn, 1981; Golembiewski, 1981; and Pines, 1981) have been suggested as antecedents of burn-out. Organizational factors, such as amount of red tape, bureaucratization, centralization of decision making, opportunity for career advancement, shape of organization, and equitability of resource sharing (Edelwich and Brodsky, 1981; Golembiewski, 1981; and Pines, 1981) have also been suggested.

Theoretical Consequences

Almost as many consequences of burnout as causes have been suggested in the literature. A partial listing of these is presented in Table 3. On an individual/affective

TABLE 3

THEORETICAL CONSEQUENCES OF BURNOUT

INDIVIDUAL LEVEL

ATTITUDINAL AND AFFECTIVE FACTORS

Apathy
Alienation
Nervousness
Irritability
Depression
Cynicism
Intention to quit
Job involvement (low)
Job dissatisfaction
Perceived ineffectiveness
Tension

PHYSICAL AND HEALTH-RELATED FACTORS

Use of alcohol
Use of drugs
Use of tranquilizers
Accident rates
Exhaustion
Insomnia
High blood pressure
Coronary heart disease
Headaches
Backaches
Weight loss
Weight gain

WORK-RELATED BEHAVIORS

Decreased productivity (quality and quantity)
Absenteeism
Turnover
Tardiness
Task completion
Early retirement
Employee theft

ORGANIZATIONAL FACTORS

Low morale
Departmental relationships (hostility, competition, lack of cooperation, lack of communication)
Organizational effectiveness
Incidence of involun--tary turnover

INTERPERSONAL FACTORS

Family conflict
Trust in supervisors or peers

level, distancing, paranoia, depression, martyrdom, tension, anger, decreased emotional control and apathetic attitudes have been posited as "indicating" burnout; whether these are part of the syndrome, coincidental with it, or resulting from it is never made clear (Minnehan and Paine, 1981; Edelwich and Brodsky, 1981). Freudenberger includes the perceptions of worthlessness, helplessness, hopelessness, depression, and martyrdom in his clinical description of burned-out cases (Freudenberger, 1981; Minnehan and Paine, 1981). Attitudes that are hypothesized to increase with burnout are boredom, cynicism, distrust of management and peers, decreased flexibility, and decreased tolerance for ambiguity (Freudenberger, 1981; Minnehan and Paine, 1981).

Interpersonal factors that have been suggested to result from burnout include an increase in isolation from peers and clients, and an increase in interpersonal conflicts with staff members and with family (Minnehan and Paine, 1981; Maslach and Jackson, 1981).

A great number of health-related factors are hypothesized to result from burnout. Most of these are empirical correlates of job stress. They include: fatigue, illness, headaches, sleep disturbances, sudden gains or losses in weight, injuries, muscular pain, premenstrual tension, psychosomatic illnesses, and use of alcohol and drugs (Minnehan and Paine, 1981; Edelwich and Brodsky, 1981).

There are multiple job behavior variables that have also been posited to result from burnout. These include turnover, absenteeism, tardiness, failure to perform required work, and decreased quality and quantity of performance (Edelwich and Brodsky, 1981; Pines, 1981; Minnehan and Paine, 1981).

Empirical Correlates of Burnout

Recently evolved paper-and-pencil measures of burnout have allowed correlational studies examining the relationship of burnout and individual, interpersonal, organizational and task characteristics. Although no longitudinal designs or other tests of causality have been performed for any of these factors, some of them have been empirically correlated with objective measures of burnout. These include: task/job variables such as autonomy, variety and feedback; job context factors such as the ability to take short work breaks, the ability to change the physical environment, and the physical space of the work setting; interpersonal variables such as relations with peers and supervisors, and support from peers and supervisors; and individual variables of four types: attitudes/affects such as job satisfaction, health-related problems such as use of alcohol and tranquilizers, demographic variables such as age and sex, and work-related behaviors such as absenteeism and turnover (Maslach and Jackson, in press; Pines, 1981). Empirical correlates of burnout are presented in Table 4.

TABLE 4

EMPIRICAL CORRELATES OF BURNOUT

JOB AND TASK VARIABLES

Inability to take "time-outs"
Lack of technical support
Low autonomy
Lack of variety in work environment
Overload (quantitative and qualitative)
Difficult type of work (direct contact with clients, severity of client problems)
Low task significance
Low feedback (from the job itself; feedback about performance)
Poor physical environment (noise levels, crowding, architectural dysfunction)
Conflicting demands
Red tape
Paper work

INTERPERSONAL VARIABLES

Communication problems
Administrative interference in goal achievement
Poor relations with peers
Poor relations with supervisors
Problems with family and friends

INDIVIDUAL VARIABLES

ATTITUDES AND AFFECT

Intentions to quit
Low job satisfaction (with work, life, oneself, peers)
Low need satisfaction (with existence, growth, and relatedness needs)
Hopelessness
Loss of idealism

WORK-RELATED BEHAVIORS

Absenteeism
Turnover
Coping stretegies (active/passive, direct/indirect, instrumental/palliative)

PHYSICAL AND HEALTH-RELATED VARIABLES

Use of alcohol
Use of tranquilizers
Poor health
Sleep problems
Headaches
Backaches
Stomach aches
Loss of appetite
Nervousness

DEMOGRAPHIC VARIABLES

Age
Sex
Marital status
Amount of education

Maslach and Jackson (1981), and Jackson and Maslach (In press) found significant correlations between the emotional exhaustion subscale of the Maslach Burnout Inventory and spouse ratings of policemen's being upset or angry, tense or anxious, physically exhausted and complaining about work. All three subscales were significantly correlated with caseload. Emotional exhaustion correlated with spending time in direct client contact. All three subscales correlated negatively with feedback from the job itself and job satisfaction; the Involvement subscale correlated positively with spending time with others.

Antecedent demographic variables that were correlated with burnout included sex; women scored higher than men on emotional exhaustion, while men scored higher on depersonalization and personal achievement (the latter of which indicates a lack of burnout). Age correlated with all three subscales such that younger people experienced more burnout. Married people scored lower on emotional exhaustion than single or divorced people. Level of education was related such that the more education, the greater emotional exhaustion, and the less depersonalization; high degrees of education scored highest on personal accomplishment, followed by low degrees, followed by median (college) degrees.

Other variables that correlated with the MBI included subscales of the Job Diagnostic Survey: "growth satisfaction" was negatively correlated with all three subscales, as

was "knowledge of results" and "peer and co-worker satisfaction". Burnout was correlated with intention to quit; absenteeism was correlated with the depersonalization subscale only. Depersonalization was correlated with reports of fewer friends, being absent from family celebrations, not sharing feelings or friends with the spouse, and being emotionally distant from children. The more burnout on all subscales, the more reports of the worker getting angry at his/her spouse or children.

Health-related variables that correlated with the MBI included insomnia and drinking: these correlated with the emotional exhaustion subscale. Use of tranquilizers correlated (negatively) with the personal accomplishment subscale.

Golembiewski and Munzenrider (1981) found significant correlations between burnout and job involvement, job tension, trust in supervisor and fellow employees, and participation; they do not mention the directionality of these correlations, however. Significant relationships were found for the Job Descriptive Index subscales of satisfaction with work, supervision, and co-workers, as well as with the Job Diagnostic Survey measures of meaningfulness of work, responsibility for work, general satisfaction, internal work motivation, growth satisfaction, job security, co-workers and supervision.

Pines (1981) presents a review of her research, which utilized her Tedium measure. This operationalizes burnout as

physical, emotional and mental exhaustion. She found significant correlations with turnover rates, tardiness, intention to quit, poor physical health, sleep problems, amount of alcohol consumed, on-duty headaches, loss of appetite, nervousness, backaches, and stomach aches. Tedium was negatively correlated with satisfaction from work, life and oneself, and positively with hopelessness and loss of idealism about work.

Antecedents of burnout that were significantly correlated with Tedium included: task antonomy, variety, overload and significance; perceived actualization and growth; the structure, noise and spacing of the physical environment, the flexibility to change elements of the physical environment, and the ability to take "time-outs". The number and problems of the clients were also related to her measure of burnout. Interpersonal elements included co-worker work relations and support from co-workers. Rewards, support, challenge and feedback from supervisors were also related. Organizational variables included perceived amounts of red tape, paper work, communication problems, amount of rules and regulations, participation in decision making, and ability to influence policy. Lastly, role conflict and ambiguity correlated with burnout, as did status disorder.

All of these studies are correlational in nature. Causal models of burnout have been developed, but have not been tested empirically through use of longitudinal or path

analysis. Therefore, no causal inferences can be drawn on the basis of the correlational results reported. Some variables, such as the demographics, are clearly antecedent variables; most, however, can only be categorized as antecedent or consequential on the basis of logic. The use of a variety of measures which tap different conceptualizations of burnout also makes explicit categorization difficult. The only conclusive statement possible is that these variables are related to burnout; the state of knowledge about burnout is insufficient for more than logical guesswork about the exact form and direction of the relationships.

A Causal Model of Burnout

The review of the burnout literature illustrates the absence of an empirically supported causal process leading to burnout, despite the number and variety of variables that correlate with it. Several elements have been chosen for this study from the theoretical explanations and data available in the literature. These were selected on the basis of their theoretical importance, their importance in interviews with human service and clerical employees, and their inclusion in the synthesized definition of burnout. These variables are: control of work timing, role strain, and global job satisfaction. The next section examines these variables, reviews their relationships with burnout, and derives hypotheses concerning their interrelationships. These are combined into a causal model of burnout.

Control Over Timing

Control over the timing of work can be viewed from several perspectives, each having an impact on burnout. First, timing control can be seen as a type of control over the work setting. It includes two relevant areas of the literature: general situational control, and controlling the work setting as a subset of autonomy. Second, timing control appears as a part of the flexitime research, and can be viewed as a constraint on stress coping strategies available to people. The research on each of these aspects will be briefly reviewed, and the impact of timing control assessed.

Control Over the Work Setting

Several researchers describe lack of control of the work situation as one of the causes of burnout (Cherniss, 1980; Carroll and White, 1981; Golembiewski, 1981; Pines, 1981). One way to control the work situation is through self-determination of which aspect of work is being performed at any given time, and through the ability to remove oneself from the work setting. This type of situation control has been studied as the general control over one's environment and the specific control over the work setting; control of work scheduling is a frequently used operationalization of autonomy.

General Situational Control

The importance of control over one's immediate surroundings has been shown in many studies of both humans and animals. Lack of control over one's environment has been related to depression (Rehm, 1977; Abramson, Seligman and Teasdale, 1978), illnesses (Suls and Mullen, 1981), decreased motivation and depressed affect (Glass, Singer and Friedman, 1969; Rehm, 1977; Abramson et al., 1978; Langer and Rodin, 1976; and Lefcourt, 1973), and decreased happiness, activity, and involvement (Langer et al., 1976). Lack of control over oneself and one's own actions is also related to depression (Rehm, 1977), which, like burnout, is marked by negative changes in affect.

Langer and Rodin (1976) explored the behavioral effects of situational control of nursing home residents. They verbally emphasized the decision-making ability and options available to one group of residents, while giving them complete control over and responsibility for the care of a plant. A comparison group of residents received a comparable verbal message, without the emphasis on decision-making, and received a plant that was taken care of by a nurse. The experimental group members had a significantly greater increase in self-reported happiness and activity level than the comparison group, and greater increases in objective measures of their time spent in proactive interactions.

Control over negative as well as positive events is an important factor in depression and illness. Suls and Mullen (1981) present evidence that perceived control of negative, life changing events is negatively related to the number of illnesses subsequently contracted by college undergraduates. Perceived control over both positive and negative events is presented as the causal factor in the "learned helplessness" theory of depression (Seligman, 1972; Abramson, Seligman and Teasdale, 1978). In the modified depression model, the realization that "the probability of an outcome is the same whether or not a given response occurs" (Abramson et al., p. 51) results in helplessness and depression. Depression has four elements: deficient motivation, cognitive processing, self esteem and depressed affect. The more certain the subject is of his/her helplessness (lack of control), the greater the deficits in each of the four elements (Abramson et al., 1978).

Rehm (1977) adds a new element in the helplessness model of depression by stressing the importance of self-control. His formulation differentiates between the depression caused by perceived helplessness and that caused by perceived incompetence. In all of these models, an inability to control both positive and negative events of personal importance results in depression and its attendant behavioral and psychological deficits.

Lefcourt's (1973) review of the helplessness literature focuses on the perception of control of events; the greater the perceived control, the less acute the depressive symptoms and the less aversive the perception of negative conditions.

In summary, the research on general situational control has related it to illness and depression (Suls and Mullen, 1981; Rehm, 1977; Abramson, Seligman and Teasdale, 1978; Glass, Singer and Friedman, 1969; Lefcourt, 1973; Langer and Rodin, 1976). One of the primary symptoms of depression is depressed affect, which is similar to the negative changes in affect that constitute burnout. Exactly which feelings change for the worse in depression are not identified; those which change for the worse in burnout are described in the next section of this thesis.

Situational Control in Autonomy

Control of one's situation and actions have been examined in the Industrial/Organizational Psychology and Organizational Behavior literature under the heading of autonomy. Autonomy originally referred to that control over task content which led to perceived responsibility by the employee (Hackman and Oldham, 1975). Recently, the specific aspect of control over the context of the work situation has been included in measures of autonomy; in some cases, it has been separated out of the broader measure for specific examination.

Control as a subset of autonomy on a job has been related to job performance (Birchell and Wild, 1976; Marshall and Cooper, 1978; Karasek, 1979) and stress levels (Karasek,

1979; Marshall and Cooper, 1978). Autonomy as a general construct has been related to increased job satisfaction, motivation, productivity, employee growth, life satisfaction, self esteem, and depression (Beehr, 1976; Hackman and Lawler, 1971; Hackman and Oldham, 1976; Argyris, 1964; Likert, 1961; McGregor, 1960).

In their study of the relationships of perceived job attributes and objective performance measures, Birchell and Wild (1976) broke autonomy down into "worker responsibility" and "control over work activity". Both of these aspects of autonomy were significantly correlated with improved job performance, as was "self-actualization". Birchell and Wild, however, emphasize that it is the workers' perceptions of autonomy which lead to increased performance, rather than objective autonomy. As Lefcourt (1973) made clear, the "illusions of control and freedom" have a very powerful impact on actions.

Several studies have operationalized the context control subset of autonomy as control over work scheduling and timing. Control over the timing of work includes <u>exactly which</u> hours are worked, but not the overall <u>number</u> of hours. Control over the number of hours is having control over the demands of a job, as opposed to the decision latitude (Karasek, 1979). Controlling the <u>number</u> of hours worked means controlling the goals set for the employee, and the amount of overload; these are parts of the job content, and

are sources of job stress and strain on the worker. Control over the timing of work is context control; it acts as a modifier on the relationship between strain and burnout, rather than as a causal factor in producing strain.

Time control has been related to burnout, stress and job satisfaction in a few studies. Marshall and Cooper (1978) looked at job characteristics that differentiated between the job satisfaction and job stress on lower, middle and upper-level managers. The stressors were grouped into four factors: job-intrinsic qualities, work role (including "making important decisions"), behavioral restrictions due to being "trapped" in a large organization, and the "work-home interface". The latter factor, which was empirically separated from the job-responsibility aspects of overall job autonomy, contained items describing "more pressure from working long hours, having to spend leisure time on work, business travel and the conflict of work with home demands."

All the patterns of stress did not increase linearly with the level of management; both the upper two groups reported equal degrees of spending leisure time on work, and middle managers reported more pressure from longer hours.

One of the consistent correlates of burnout is an inability to take brief "time-outs", during which an employee can get away from a stressful task for a short while (Maslach and Pines, 1977; Pines, 1980). Karasek (1979) presents a cross-cultural study which combines time pressures and

limitations with the amount of work required to create a scale of "job demands". He contrasts these with "decision latitude" and "decision authority" (including "freedom as to how to work"). He examines their relationships with depression, exhaustion, job and life satisfaction and job strain. In samples within both the United States and Sweden, Karasek found that the combination of high job demands (little time and many pressures) and low decision latitude and authority (constraints on autonomy, both in job intrinsic and job process decisions), had the highest correlation with reports of depression, exhaustion, and anxiety, and job strain.

A worker's time is divided among leisure, work and family, which may result in role conflict, alienation, and a host of other negative affects and perceptions such as tension and poor familial relationships (Kanter, 1977; Korman and Korman, 1980; Haavio-Mannila, 1971; Willmott, 1971). Control over when the employee works should allow him/her to make the interface between work and family life more smooth; the ability to alter one's schedule enough to take children to school, spend a long weekend away, or make appointments for special occasions may go a long way in decreasing role conflict (Kanter, 1977; Ronen, 1981).

Summary

In summary, control over timing has been examined as an aspect of control over the work setting. This has been

especially apparent in the research on autonomy. Control over the work setting is related to low stress levels and job performance (Karasek, 1979; Marshall and Cooper, 1978; Birchell and Wild, 1976). Control over timing of work is related positively with job satisfaction, and negatively with job stress, depression, burnout, role conflict, tension and poor familial relations (Marshall and Cooper, 1978; Karasek, 1979; Maslach and Pines, 1977; Kanter, 1977; Haavio-Mannila, 1971; Willmott, 1971; Korman and Korman, 1980; Ronen, 1981).

Control Over Time in Flexible Working Hours

There is one set of research findings which examines the results of increased control over one's time, without changing the amount of time that is worked; it examines a change in control over context without changing the content of the work, the goals, the demands or the workload. This is the research on flexible time systems, a recent work life intervention that has become increasingly popular with organizations in the last five to ten years.

There are several variations of the flexitime system, but its basis consists of a set of "core" hours from mid-morning to mid-afternoon, during which all employees must be on the job. Before and after the core are a range of two to three hour periods, during which employees begin and leave work. The total number of hours worked each pay period

remains unchanged. Some systems have constant lunch hours, and others have variable ones; some allow daily fluctuations in beginning and leaving times, while others have employees pick a set of hours for each month; some allow hours to be credited to employees over a period of weeks, to be taken later as an extra day off, while others do not.

Some of the proponents of flexitime claim increases in job satisfaction, employee morale, work climate, quality of leisure time, tardiness, absenteeism, lost work hours, and quality of the work-family interface (Donahue, 1975; Hopp and Sommerstad, 1975; Walker, Fletcher and McLeod, 1975). Some of these factors, particularly the affective and subjective ones, have been empirically related to the use of flexitime (Schein, Maurer and Novak, 1977; Golembiewski, Hilles and Kagno, 1974; Ronen and Primps, 1980; Evans, 1973; Ronen, 1981).

Schein, Maurer and Novak (1977) examined supervisors' responses to flexitime in twelve units of an insurance company. They factor analyzed the responses, and reported large positive reactions to the effect of flexitime on the factors of employee productivity and effectiveness, overtime and scheduling, employee honesty and morale, administrative concerns, employee time handling, and employee work habits.

Evans (1973) compared the levels of satisfaction with both work and leisure time along five categories: "using capabilities, accomplishment, prestige, social activity, and

leisure". He examined the differences between the actual and preferred levels of these qualities in a flexitime and a control group of non-supervisory personnel. There were significant differences between the flexitime and control groups along all five categories in work satisfaction, but not in leisure satisfaction.

Golembiewski, Hilles and Kagno (1974) examined attitudes about work in a longitudinal study of non-supervisory personnel. Using two flexitime groups and one control, they found that after six months and after a year, flexitime employees reported greater satisfaction with work hours, greater ease in handling personal business, fewer problems with traffic congestion, and improved "impact of work-hour policy on personal productivity".

Orpen (1981) used an experimental design to examine the changes in satisfaction and productivity after six months in randomly assigned flexitime and control groups of clerical workers. He found significant differences in the change in overall job satisfaction. Ronen and Primps (1980) describe the results of twenty-five studies performed in various organizations, describing both objective and subjective data in four general areas. In studies using objective data, seven out of twelve found a decrease in absenteeism, and nine out of nine found a decrease in tardiness. In studies using subjective (attitudinal) data, fourteen out of seventeen reported improvements in the control of work hours and quiet

time. Seventeen out of fifteen found a positive attitude about flexitime. Subjective data on absenteeism and tardiness resulted in six studies out of six showing improvement in the former, and five out of five showing improvement in the latter. All nine studies that examined attitudes about individual usage of time found improvements.

In general, the research on the use of the flexible time systems supports the hypothesis that it causes increased job satisfaction, even over long time periods. The preponderance of data also supports the conclusion that flexitime decreases absenteeism and tardiness, but does not decrease productivity; it increases perceived control of work hours, and improves attitudes about use of time.

The reason for both these affective and behavioral changes, however, is not clear. The reports of "improved control over work scheduling and work process" (Ronen and Primps, 1980), "a feeling of freedom" (Walker, Fletcher and McLeod, 1975), and increased "degree of participation in decisions about work assignments" (Golembiewski, Hills and Kagno, 1974) all indicate an increased sense of control over the work situation.

Research in altering work hours without giving employees control over them, such as is done with a four-day, forty-hour work week, indicates that there is a short-term improvement in satisfaction and stress-anxiety levels, but no difference in absenteeism or job performance. Long term

examination, however, has found no difference from a comparison group in satisfaction, stress-anxiety, absenteeism or performance (Ivancevich and Lyon, 1976). These findings further support the causative function of the increased control of the work environment in the increases in satisfaction and decreases in absenteeism and tardiness.

In summary, the flexitime research shows a correlation between use of flexitime and increased job satisfaction, morale and work climate, and decreased tardiness and absenteeism. There is strong support for the importance of timing control in creating these positive responses to flexitime systems: workers report increased control, and the positive changes do not last when hours are changed but the employees have no control over them.

Coping Mechanisms and Control Over Time

The amount of control workers have over the timing of their jobs may have two effects. First, it can be a type of decision latitude: it is a way for workers to control their environment, and perceive themselves as in control rather than helpless. Second, it affects the types of coping strategies that may be used to deal with job stress.

According to the research previously described, the perception of control over the work environment should lead to increased job performance and job satisfaction, and to decreased absenteeism, incidence of depression, exhaustion,

anxiety and job strain (Karasek, 1979; Birchell and Wild, 1976; Ronen and Primps, 1980; Ronen 1980; Evans, 1973; Orpen, 1981).

Active, direct strategies are the most effective in coping with strains, but there are limits on the ability of workers to enact effective, outer-directed coping techniques. One major set of limits is the timing of work. As has been suggested, controlling this can allow an employee to actively cope with strains such as inter-role conflict by smoothing the interface between his/her work and family or private lives (Ronen, 1980). This has been empirically supported by the significant correlations found between incidence of family problems and burnout (Maslach and Jackson, 1980).

One aspect of employee control of timing is the ability to take brief "time-outs", during which time the worker can leave the immediate setting. These allow the direct/passive coping response of temporarily leaving the field to avoid the sources of stress for a while. As has been mentioned, Maslach and Jackson (1980) found a strong negative correlation between the ability to take "time-outs" of about 10 minutes duration, and incidence of burnout.

According to the definition of burnout, workers who experience a great deal of role strain may experience burnout. They will do so if they employ coping strategies that do not effectively deal with the strain they experience; that is,

if they use passive, indirect coping strategies. Having less control over the timing of work will decrease the number of direct and active strategies a worker is able to use. This will increase the probability that she/he will cope ineffectively, and experience burnout. Having less control over timing will also give the worker less control over the context of his/her work, which has deleterious effects on work and life satisfaction, depression, alcohol and drug abuse.

Summary of Time Control Literature

Overall, the various aspects of timing control show relationships with job stress, job dissatisfaction and burnout. Lack of control over one's life situation leads to depression, which shares the negative affect of burnout. Lack of control over the work setting, and specifically the timing of work, is related to job stress, role strain, depression, burnout, and job dissatisfaction. The control over timing that characterizes flexitime is related to job satisfaction and decreased withdrawal behaviors. Control over timing also affects the stress coping strategies that are available, which directly impacts on the incidence of burnout.

From this research, specific hypotheses of the relationships of timing control, job satisfaction, role strain and burnout can be derived.

Hypothesis 1: The more control over the timing of work an employee has, the less burnout he/she will experience.

Hypothesis 2: The more control over the timing of work an employee has, the more job satisfaction he/she will experience.

Hypothesis 3: The more control over the timing of work an employee has, the less role strain he/she will experience.

Role Strain

There are many ways of viewing the job-related stresses that employees are subject to. One viewpoint which has received increasing attention in recent years is the concept of job encumbents as occupying multiple roles, which may give rise to role conflicts and/or role ambiguity (Katz and Kahn, 1966). This seems to be especially salient when looking at job stresses from a burnout perspective, because so many of the case studies describe workers who are frustrated by performing tasks that they did not expect to, or are torn between conflicting responsibilities, or who find themselves acting contrary to their expectations of themselves. These all seem to involve sets of expectations which conflict with one another.

A role is "a set of expectations applied to the incumbent of a particular position by the incumbent and by role senders within and beyond an organization's boundaries" (Van Sell, Brief and Schuler, 1981, p. 43). Role strain can

be caused by two types of situations, role conflict and role ambiguity. Role conflict occurs when there is "an incongruity of the expectations associated with a role (Van Sell et al., p. 44)."

> Several types of role conflict have been identified: a) intra-sender role conflict--incompatible expectations from a single role sender; b) inter-sender role conflict--expectations from one role sender which are incompatible with those from another role sender; c) person-role conflict--incompatibility between the expectations held by the role incumbent and the expectations otherwise associated with his/her position; d) inter-role conflict--role pressures stemming from one position; and e) role overload--expecting the role incumbent to engage in several role behaviors, all of which may be mutually compatible in the abstract, within too short a time period.... (Kahn et al., 1964.)

> ... Generally, role ambiguity has been defined as the degree to which clear information is lacking regarding a) the expectations associated with a role, b) methods for fulfilling known role expectations, and/or c) the consequences of role performance (Kahn et al., 1964; Van Sell et al., 1981).

Relationship of Role Strain with Other Salient Variables

Role conflict and ambiguity have been found to relate to many of the same variables which are correlated with burnout. Many studies have examined the relationships of individual, interpersonal, job-related, and organizational variables with these two role stresses, both as antecedent and consequential factors. There are obvious similarities in the variables related to burnout and those related to role strain. This provides circumstantial support for the hypothesis that burnout results from role strain that is

ineffectively coped with.

On an individual level, job tenure has been negatively correlated with role conflict (Corwin, 1961) and role ambiguity (Organ and Greene, 1974). The interpersonal variables of social support from supervisor and co-workers have been negatively related to role ambiguity (Caplan, Cobb, French, Van Harrison and Pinneau, 1975).

The vast majority of the research on antecedent factors in role stress examines job and task characteristics. Autonomy has been negatively correlated with role conflict (Brief and Aldag, 1976), as has involvement in decision making (Belasco and Alutto, 1969). The timing of work has been examined extensively. Work load, variance in workload, and the number of hours of unwanted overtime correlate positively with role ambiguity; the latter is also correlated with role conflict (Caplan et al., 1975).

The best supported consequence of role conflict and ambiguity is job dissatisfaction. Job dissatisfaction has been correlated with role conflict (Beehr, Walsh and Taber, 1976; Brief and Aldag, 1976; Caplan, Cobb, French, Van Harrison and Pinneau, 1975; Gross, Mason and McEachern, 1958; Hall and Gordon, 1973; House and Rizzo, 1972; Johnson and Stinson, 1975; Kahn, Wolfe, Quinn, Snoeck and Rosenthal, 1964; Miles, 1976; Rizzo, House and Lirtzman, 1970; Sorensen and Sorensen, 1974; Szilagyi and Sims, 1975; Tosi and Tosi,

1970), and with ambiguity (Beehr, 1976; Beehr, Walsh and Taber, 1976; Caplan et al., 1975; French and Caplan, 1972; Greene, 1972; Hamner and Tosi, 1974; House and Rizzo, 1972; Johnson and Stinson, 1975; Kahn et al., 1964; Lyons, 1971; Miles, 1976; Miles and Petty, 1975; Rizzo et al., 1970; Szilagyi and Sims, 1975).

Other attitudinal and affective outcomes of role conflict and ambiguity include tension and anxiety. Tension has been correlated with role conflict (Beehr et al., 1976; Brief and Aldag, 1976; French and Caplan, 1972; Gross et al., 1958; Kahn et al., 1964; Miles, 1976; Rizzo et al., 1970), and with role ambiguity (Beehr et al., 1976; Brief and Aldag, 1976; Caplan and Jones, 1975; Ivancevich and Donelly, 1974; Kahn et al., 1964; Lyons, 1971; Miles, 1976; Miles and Petty, 1975; Rizzo et al., 1970). Anxiety has been positively correlated with role conflict (Brief and Aldag, 1976; Caplan et al., 1975; Caplan and Jones, 1975; Gross et al., 1958; House and Rizzo, 1972; Rizzo et al., 1970; Tosi, 1971), and with role ambiguity (Brief and Aldag, 1976; Caplan et al., 1975; Caplan and Jones 1975; Rizzo et al., 1970; Wispe and Thayer, 1957).

Effective outcomes include an increased sense of futility, related to role conflict (French and Caplan, 1972) and role ambiguity (Kahn et al., 1964). Depression has been correlated with role ambiguity (Beehr, 1976; Caplan et al., 1975) and with role conflict (Caplan et al., 1975; Getzels

and Guba, 1954). Irritation has been positively correlated with role conflict (Caplan et al., 1975) and happiness negatively correlated with it (Hall and Gordon, 1973).

Several health-related variables have been correlated with role conflict and ambiguity. These include fatigue (Beehr, Walsh and Taber, 1976), heart rate (Caplan and Jones, 1975; French and Caplan, 1972), physical stress (Ivancevich and Donelly, 1974) and somatic complaints (Caplan et al., 1975).

Intent to quit has been positively correlated with role conflict (Sorenson and Sorenson, 1974); propensity to leave has been correlated positively with both role conflict and ambiguity in one study (Brief and Aldag, 1975), and with role ambiguity alone in several others (House and Rizzo, 1972; Ivancevich and Donnelly, 1974; Lyons, 1971; and Rizzo, House and Lirtzman, 1970). Actual turnover has been related to role conflict (Johnson and Graen, 1973) and to role ambiguity (Johnson and Graen, 1972; Lyons, 1971).

On an interpersonal level, a few variables have been examined in relation to conflict and ambiguity. These include friction, which correlates with role conflict (Haas, 1964), and group involvement, which correlates with role ambiguity (Raven and Rietsma, 1957). On an organizational level, group productivity has been correlated negatively with role ambiguity (Smith, 1969), and perceptions of organizational effectiveness have been negatively correlated with

both aspects of role strain (House and Rizzo, 1972).

A series of studies have also examined variables that moderate the relationship of role conflict and ambiguity and its various outcomes. The most clear moderators seem to be qualities of the task or job. Autonomy reduces the relationships between role ambiguity and both job dissatisfaction and depression (Beehr, 1976). Participation in decision making moderates the relationships of both role strains with job satisfaction and performance (Schuler, 1977). Organizational level has been found to have the same moderating effect (Schuler, 1977; Silagyi and Sims, 1975), and these two moderators were also found to have an interactive effect on the relationships of both role strains with satisfaction and performance (Schuler, 1977). These findings are significant for the burnout research; both of the moderating variables allow for more control over a greater selection of coping strategies. Burnout could well be an "intervening" variable here, acting as the connector between role strain and decreased performance.

Summary

The literature on role strain has been examined in depth in order to highlight its similarity to burnout. Nearly all of the antecedents and consequences of role strain are also related to burnout, as previously described. The similar patterns of these relationships indicate a close

link between the two variables. This supports the hypotheses that burnout results from role strain.

From the above literature review, the following hypotheses are derived:

Hypothesis 4: The more role strain an employee experiences, the less job satisfaction he/she will experience.

Hypothesis 5: The more role strain an employee experiences, the more burnout he/she will experience.

Job Satisfaction

Job dissatisfaction is one of the elements that is often included in the burnout construct; if not part of burnout, it is correlated highly with it. Unfortunately the conceptual confusion that surrounds burnout is similar to that which surrounds the construct of job satisfaction. Although it is one of the most widely examined concepts in Industrial/Organizational Psychology, there are a multitude of operational and theoretical definitions of it, none of which seem to measure the same thing (Wanous and Lawler, 1972).

The Handbook of Industrial and Organizational Psychology defines job satisfaction as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences" (Locke, 1976, p. 130). Wanous and Lawler (1972) examine the multiple operational definitions, and

conclude that the different measures each tap a different aspect of the construct, and the experimenter should choose carefully based on the variables she/he is going to be relating it to.

Burnout is conceptualized as a combination of affective and attitudinal changes that result from coping with job strain. As such, it taps a content area highly related to job satisfaction. Burnout results specifically from a process of coping ineffectively, which differentiates it from job satisfaction. It contains both affects and attitudes, but these affects are more varied than that of satisfaction with one's job and its component parts; as will be seen in section III, they include self-efficacy, fear, perceived support and feeling pressured, which are not only perceptions of job attributes, but self-perceptions.

Burnout is characterized by extreme negative affect; burned out workers experience the attitudes and feelings to a very strong degree. This is not true of job satisfaction, which is thought of as a difference in degrees of liking. Job satisfaction makes fine differentiations of a more limited range of feelings, with a negative anchor of "very dissatisfied". The negative anchors of burnout include "frustrated", "bad", "worried", "tense" and "worthless",

which indicate greater intensity of feeling than job satisfaction measures.

Relationship of Job Satisfaction with Other Salient Variables

Job satisfaction is often used as a dependent variable, to describe how various qualities of a job, task, organization, situation or individual affect a job incumbent's attitudes. Job commitment and calculative organizational commitment (based on economic gain rather than normative values) were correlated with job satisfaction (Weiner and Vard, 1980), as was holding work as a Central Life Interest (Dubin and Champoux, 1977).

Task characteristics that have been correlated with job satisfaction include job scope (Stone, 1976), Motivating Potential and its component parts of autonomy, task identity, skill variety, task significance and feedback (Hackman and Lawler, 1971; Wanous, 1974). Umstot, Bell and Mitchell (1976) describe an experimental study which supports the causal impact of enriched jobs on increased job satisfaction. Other work attributes that have been related to job satisfaction include control over work methods and work pace, opportunity to use skills and abilities, and amount of work (Locke, 1976).

As a causal factor, job satisfaction has been related to satisfaction with life (Kornhauser, 1965; Iris and Barrett, 1972; Weitz, 1952). It has been related to several

health-related variables, such as fatigue, headaches and ill health (Burke, 1969). In Palmore's (1969) longitudinal study of longevity, the best predictor of length of life was job satisfaction. Kornhauser (1965) also found consistent relationships between job satisfaction and mental health. Behavioral consequences of job satisfaction include negative relationships with absenteeism and turnover (Vroom, 1964; Atchison and Lefferts, 1972; Kraut, 1970; Taylor and Weiss, 1972; Waters and Roach, 1973; Hulin, 1968).

There is an obvious similarity in the constructs of burnout and job dissatisfaction, based on their relationships with the other variables described. Besides being highly correlated (Maslach and Jackson, 1981, Golembiewski and Munzenrider, 1981; Pines, 1981), they show similar patterns of relationships with health and behaviorally related variables. However, the two variables do not totally overlap; one can be dissatisfied with one's job without being burned out, and without going through the process of ineffective coping with strain that produces burnout.

In summary, the research literature indicates that job satisfaction is correlated with autonomy, control over work pace, and negatively correlated with burnout. This allows us to derive the following hypothesis:

Hypothesis 6: The more job satisfaction an employee experiences, the less burnout he/she will experience.

Summary and Hypotheses

The construct of burnout has been defined as an intra-psychic process in which the worker copes ineffectively with role strains, and experiences negative shifts in several affects and attitudes. The specific affects and attitudes will be described in the next section. Burnout results from role strain, so is positively correlated with both role conflict and role ambiguity. It depends on the use of effective coping mechanisms at work; the number of effective strategies available is increased by control over the timing of work. Hence, burnout is negatively correlated with timing control.

Role strain leads to job dissatisfaction, and is positively correlated with it. It leads to, and is positively correlated with, burnout. It is negatively correlated with control of timing of work because role conflict is reduced by the ability to ease inter-role conflicts in terms of work and non-work roles.

Control of the timing of work is negatively related to role strain, negatively related to job dissatisfaction, and negatively related to burnout.

Lastly, job dissatisfaction is positively correlated with burnout. It is caused by lack of control of timing of work, and hence is negatively correlated with that control. It is caused by role strain, and is positively correlated with both role conflict and role ambiguity.

These relationships are based on the literature reviews previously presented. They are described in the following hypotheses:

Hypothesis 1: The more control over the timing of work an employee has, the less burnout he/she will experience.

Hypothesis 2: The more control over the timing of work an employee has, the more job satisfaction he/she will experience.

Hypothesis 3: The more control over the timing of work on employee has, the less role strain he/she will experience.

Hypothesis 4: The more role strain an employee experiences, the less job satisfaction he/she will experience.

Hypothesis 5: The more role strain an employee experiences, the more burnout he/she will experience.

Hypothesis 6: The more job satisfaction an employee experiences, the less burnout he/she will experience.

Causal Model of Burnout

These hypotheses can be combined to describe the causal process of burnout. This forms a recursive model in which role strain and timing control are negatively and non-causally correlated. Role strain produces decreased job satisfaction; it also directly causes increased burnout. Timing control causes increased job satisfaction, and also directly decreases burnout. Job satisfaction directly decreases burnout. These relationships are depicted in Figure 3.

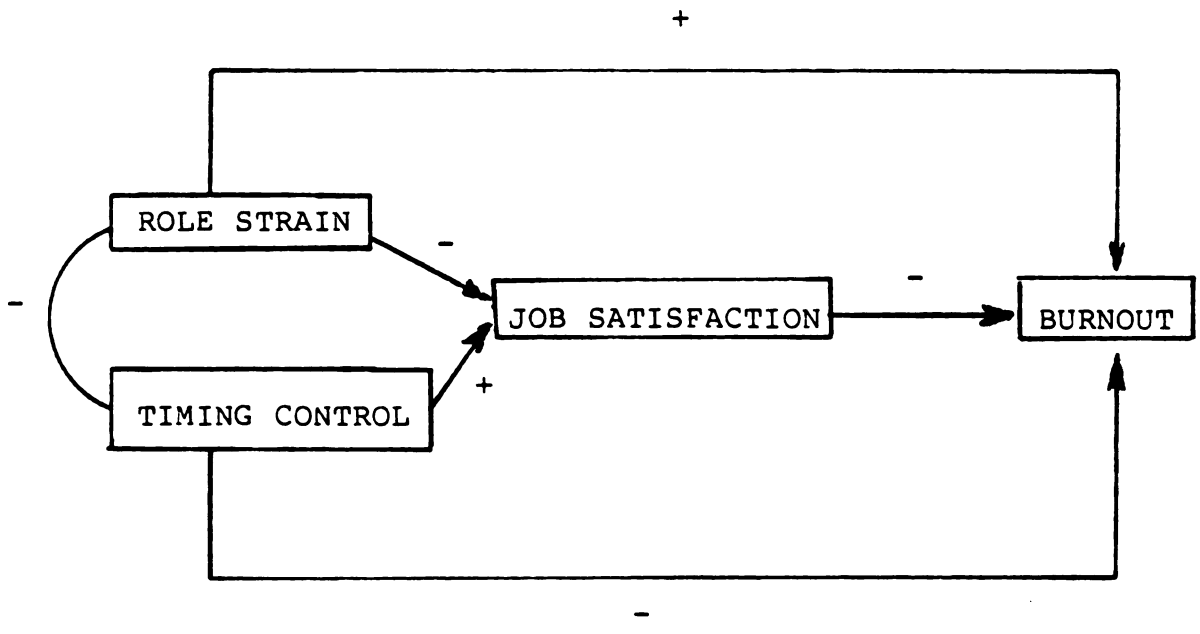


Figure 3. Combined hypotheses of burnout relationships.

Path analysis of this model will allow non-significant relationships to be dropped from the causal model. The existence of both direct and indirect influence of role strain and timing control on burnout will be checked. Likewise, the negative, noncausal relationship between role strain and timing control will be checked for its importance in explaining burnout.

Summary

This section has reviewed the literature on burnout and pinpointed several related variables: role strain, time control and job satisfaction. The literature concerning the

interrelationships of these four variables was examined, and specific hypotheses describing these relationships were derived. These hypotheses were combined into a causal model of burnout. Section III presents the methods by which this model will be tested.

III. METHODOLOGY

This section presents the methodology used to test the hypotheses previously stated. It describes the subject group that is examined, the procedures used to develop and administer the questionnaires, and the design of the analyses. The specific analyses used to test each hypothesis are described, and the instruments are presented.

Subjects

The subjects who participated in the present study consisted of 243 employees of a community mental health center in Michigan. Employees included secretaries and clerical workers, therapists, case managers, supervisors, residence home managers, and middle and upper level administrators. Sixty-three percent of the subjects were female. Their ages ranged from below 20 years old to over 45 years old, with a mean between 25 and 35 years. Fifty-one percent had children. Educational levels ranged from some high school to a doctoral degree, with an average of a bachelor's degree. Tenure with the organization ranged from less than one year to more than ten years, with a mean between one and three years.

Procedure

All data were gathered in questionnaire form. The data for this thesis were gathered as part of a larger project; the other measures on the questionnaire included an organizational diagnostic. A five member research team administered the questionnaires to all employees; this was done through on-site visits over a five week period.

Employees were gathered in groups of five to twenty in one room set aside for the purpose, where the researcher explained the directions and was available to answer questions. Questionnaires were completed during paid work hours, and in the presence of the researcher; virtually all employees filled out the questionnaire. Computer-scanned answer sheets were used; reponses were marked on a five-point Likert-type scale. The instruments used for this study comprised approximately one-third of the entire questionnaire; the other instruments included measures of perceived relative importance of various constituents and organizational effectiveness. The entire questionnaire took approximately one hour to complete.

Measures

The Measurement of Burnout

The instrument used to measure burnout was developed in lieu of using any of the previously developed measures of

burnout. The vest validated measure up to the present time did not fit the present theoretical definition of burnout, nor did it fit the empirical findings from interviews and preliminary questionnaire investigation.

Four pencil-and-paper measurements of burnout have been reported in the literature; each one measures a different concept of burnout, and thus are probably not strongly related to one another. The first is the Maslach Burnout Inventory (MBI) (Maslach and Jackson, 1981), and it has the most extensive evidence of reliability and validity of any of the measures. It contains three subscales which measure emotional exhaustion, personal achievement (negatively scored) and depersonalization. Each item is scored in terms of both frequency and intensity of occurrence. The subscales have been correlated significantly with spouse evaluation, amount of direct client contact, and lack of feedback from the job, among other factors. All of the subscales focus on cognitive reactions to the work situation, the worker's performance, and relationships with clients.

The emotional exhaustion and depersonalization subscales were not found to be separate factors in the development of the present measure. Conceptually, the exhaustion aspect which Maslach posits as a part of burnout itself, is viewed as a result of burnout. The items on the Maslach scale appear to measure a combination of perceived strain on the employee and emotional exhaustion; these may be pulled

together into one factor because both are related to the layperson's interpretation of the term "burnout", which is the main anchoring item in this subscale. The depersonalization, which Maslach conceptualizes as a part of burnout itself, is seen in the present conceptualization as a commonly used coping strategy; it produces burnout, because of its deleterious effects on work performance, but it is not part of burnout itself.

The second paper-and-pencil measure of burnout is Pines and Kafry's (1981) Tedium scale, which includes three different subscales: physical exhaustion, mental exhaustion, and emotional exhaustion. Burnout, according to Pines, is tedium that results from work with people; the measure includes items referring to feeling worthless, disillusioned and resentful about people. Again, this conceptualization is not congruent with that operational in the present research; the items measure an amalgam of parts of the present definition of burnout, results of burnout and causes of burnout (physical exhaustion and ineffective coping strategies, respectively).

The third measure is Jones' (1980) Staff Burnout Scale. It includes subscales measuring job dissatisfaction, psychological and interpersonal tension, physical illness and distress, and unprofessional patient relationships. In addition to the conceptual differences between the present and Jones' formulation, this scale is limited to professional

human service workers. The last scale, developed by Berkeley Planning Associates (1977), measures burnout as the combination of five types of alienation, with a subscale for each type: alienation from clients, co-workers, projects, the job, and opportunities in the job. This conceptualization has little overlap with the most common elements of the concept, and very little with the one examined in this study.

Development of the Affective Burnout Measure

None of the existing measures taps all of the negative affective and attitudinal changes which constitute the present definition of burnout. A measure of burnout was created which defined the specific affective responses to stress which characterize burnout. These were identified through factor analysis of a wide variety of affective items. The results pinpointed five factors which tap the feelings of: job dissatisfaction/stagnation, incompetence, worry, lack of recognition, and time pressure. These emerged as the five affects which characterize burnout.

The items for the burnout measure used in this study were generated to cover the dimensions of burnout suggested in the literature. These included emotional exhaustion, low personal accomplishment, withdrawal, fear, and job dissatisfaction. The dimensions, and all items constituting them, were chosen through a combination of literature review and interviews. The employees interviewed ranged from therapists and case workers in a community mental health center

to clerical workers from a large state university in Michigan. Interviews were very loosely structured, and aimed primarily at finding out how workers felt about their jobs and what problems they perceived in their organization. Specific questions of what they thought made them feel "burned out" were also used.

Questionnaire items were written in the semantic differential format, which consists of a set of paired adjectival antonyms. This format was used because, when combined with factor analysis, it defines the dimensions of meaning of its focal topic; it describes the focal topic's dimensional qualities and their intensity, which Osgood calls describing its "semantic space" (Osgood et al., 1957). This allowed the measurement of more than the "evaluative" description of employees' feelings about their job, which is the subject of most job attitude and satisfaction scales. Evaluation is only one of the factors that are usually identified by use of semantic differential scales.

Osgood et al. (1957), found three orthogonal dimensions that underlie people's semantic space in describing many topics: evaluation, potency and activity. However, he concludes that

> ... the functional semantic space is to some degree modifiable in terms of what kinds of concepts are being judged, i.e., the relative importance and relationship among factors may vary with the frame of judgments. Certainly, specific scales may change their meaning, in the factorial composition sense, as a function of

> the concept being judged. And ... it is clear that what we have called the three dominant factors do not exhaust the dimensions along which meaningful judgments are differentiated. (Osgood et al., 1957, p. 72.)

Thus the semantic differential format of the questionnaire directly measured the employees' perceptions of the dimensions of how they feel at work, and the intensity of those dimensions. Responses were marked on a five-point Likert-type scale. Subjects were instructed in filling out a semantic differential, and requested to describe "the way you generally feel at work".

Approximately 120 items were created, and these were culled down to create a preliminary form of the measure containing 80 items; items were deleted due to similarity of meaning and lack of clarity. The 80-item questionnaire was administered to 825 participants from two organizations; participation was on a voluntary basis.

Participants included approximately 350 clerical and technical workers, and 450 undergraduate and graduate students; also included were 25 employees of a chain of retail furniture stores. Seventy-one percent of the respondants were female. Their ages ranged from below 20 years old to over 57 years old, with a mean between 20 and 29 years. Educational levels ranged from a high school diploma to a doctoral degree, with an average of a high school diploma. Tenure with the organization ranged from less than one year to more than ten years, with a mean between one and five

years; this was true for each of the organizations sampled.

At the time of test administration the clerical and technical workers were in negotiation for a new contract and anticipating a strike; thus the stresses on them may have been unusually high.

The data were factor analyzed using principal factoring with iteration and orthogonal (varimax) rotations. Five factors emerged which accounted for 86.9 percent of the total variance. The measure was then pared down from 80 items to 53 using several criteria. Items were deleted if they did not have factor loadings of .40 or higher. Items that loaded at .40 or higher on more than one factor were rejected if they did not have at least a .10 difference in those factor loadings. Items with low item-total correlations were rejected, as were those whose deletion increased the factors' coefficient alpha.

Items were recoded to orient toward the negative descriptor, so as to make all scales and items uniform in interpretation. Factor loadings and measures of reliability are presented in Table 5. All factors which had an eigenvalue of greater than 1.0 were examined for contruct validity and internal consistency reliability. The first factor formed a Job Dissatisfaction/Stagnation subscale, which accounted for 54.6% of the variance in the measure. Of the twenty-four items in this subscale, fourteen were reverse scored. The internal consistency reliability (coefficient

TABLE 5

FACTOR LOADINGS AND RELIABILITIES OF BURNOUT MEASURE SCALES

Dissatisfaction/Stagnation	I	II	III	IV	V
Frustrated	.62				
Pleased (R)	.67				
Trapped	.56				
Excited (R)	.68				
On a Treadmill	.70				
Energetic (R)	.50				
Powerless	.50				
Disillusioned	.69				
Committed (R)	.46				
Idealistic (R)	.57				
Fulfilled (R)	.77				
Rewarded (R)	.56			.41	
Stagnant	.76				
Underutilized	.42				
Dissatisfied	.75				
Worthwhile (R)	.48				
Happy (R)	.66				
Optimistic (R)	.66				
Enthusiastic (R)	.61				
Negative	.56				
Successful (R)	.48				
Motivated (R)	.61				
Good (R)	.48				
Aimless	.41				
α = .95					
N = 24					
Incompetence					
Disorganized		.51			
Sophisticated (R)		.56			
Confused		.51			
Incompetent		.62			
Productive (R)		.42			
Destructive		.44			
Unsure		.61			
Authentic (R)		.44			
Responsible (R)		.45			
Realistic (R)		.41			
Prepared (R)		.52			
Passive		.40			
Dependent		.49			
Foolish		.47			
Disoriented		.55			
α = .87					
N = 15					

R = reverse-scored

continued

TABLE 5 - continued

	I	II	III	IV	V
Worry					
Secure (R)			.47		
Worried			.58		
Uneasy			.58		
α = .80					
N = 3					
Recognition					
Appreciated (R)	.43			.58	
Recognized (R)	.42			.60	
Supported (R)				.56	
Heard (R)				.54	
α = .84					
N = 4					
Time Pressure					
Underworked (R)					.69
Pressured					.71
Relaxed (R)					.51
Rushed					.72
α = .78					
N = 4					

R = reverse-scored

alpha) of this subscale was .95. The second factor formed an Incompetence subscale, which accounted for 10.2% of the variance. There were fifteen items in the subscale, six of them recoded; the alpha coefficient for the subscale was .87.

The third factor contained three items, and formed a subscale measuring Worry. It accounted for 9.1% of the variance, with an alpha coefficient of .80; one of the items was reverse-scored. The fourth subscale had four items in it, and measured Recognition. It accounted for 3.7% of the variance and had an alpha coefficient of .84. All of the items in this factor were reverse-scored. The fifth and last factor contained four items, and measured Time Pressure. The coefficient alpha was .78, and two of the items were reverse-scored. It accounted for 3.2% of the variance.

This factor analytic procedure clearly identified five factors in the eighty-item questionnaire. These factors were titled: Dissatisfaction/Stagnation, Incompetence, Worry, Recognition and Time Pressure. These factors suggest that employees perceptions of their feelings at work vary along these dimensions.

Despite the previous research (Pines, 1981), the inclusion of items referring to exhaustion and fatigue produced no evidence of a factor for that construct. A two-item factor of withdrawal was identified, but had an unacceptable reliability (α = .52), and thus was not included in the

measure. Due to space limitations, all the items of the measure were not used in this study. The factor structure of the items used is examined in the next section.

Other Measures

The measure of perceived control over time was in the form of nine questions concerning the amount of employee control over the timing of work, lunch hours, work breaks, and rearranging hours for special needs. Items were scored on a five-point Likert scale, with anchors of "no control", "little control", "some control", "a good deal of control", and "total control". The two time referents of "daily" and "weekly" were used, based on comments from the interviews. Some employees could impose control over timing on a future day, but had little control over the events of each ordinary day.

Job satisfaction was measured by the one item General Motors Faces Scale (Kunin, 1955). Both male and female faces were used, although no significant differences were found by using either of the two forms (Dunham and Herman, 1975).

Role strain was measured by the short form of the Rizzo, House and Lirtzman Role Conflict and Ambiguity measure (1977). Factor analysis and validity coefficients for multiple samples have been reported for this form of the measure. All of these measures can be found in the Appendix.

Analyses

The analyses were conducted in four steps. The first two consisted of examining the factor structure of the burnout measure and the reliability of all the measures; the third involved testing the hypotheses with a correlation matrix, and the fourth consisted of path analysis of the model.

The first step was to run a confirmatory factor analysis on the five-factor solution of the burnout measure. Confirmatory factor analysis involves the testing of the hypothesized variables, or factors, which underly a set of data items; it determines whether the hypothesized number of variables is accurate, and whether the specific items group together, as hypothesized, to form those factors (Nunnally, 1978). This assumes that the 53 items in the burnout measure actually tapped into five underlying constructs. These were: dissatisfaction, incompetence, worry, recognition and time pressure. Thus all the items in each scale should have been strongly interrelated, and as a set tapped the underlying variables. Confirmatory factor analysis tested the hypothetical underlying relationships. It partitioned the indicated items into clusters, and one factor was defined by each cluster.

All of the items in the burnout measure were entered into the confirmatory factor analysis program of the PACKAGE system of FORTRAN routines (Hunter, Cohen, Gerbing and Nicol,

1980). The factors found in the initial development of the burnout measure were treated as hypothetical constructs, and tested by the program. A full correlation matrix of the items and predetermined factors was generated. The correlation matrix was generated with communalities in the diagonal, as determined by four iterations of the data.

If the factors held up under this testing, the patterns of correlations should have been maintained; each item would load at .40 or higher with its factor, and less than that with all other factors, with at least a .10 difference between the highest and next highest factor loadings. Any items which did not fit these criteria were deleted from the measure.

The second step was to analyze the internal consistency reliability of each of the subscales of the burnout measure, as well as the role conflict, role ambiguity, and time control measures. This was done using Cronbach's alpha, as performed by the Reliability Subprogram of the Statistical Programs for the Social Sciences set of FORTRAN programs (Nie, Hull, Jenkins, Steinbrenner, and Bert, 1976). This resulted in a measure of how well each of the items in each scale was tapping the same construct as the others. If any items increased the internal consistency reliability when deleted, they were deleted from the measure.

The third step was to test the hypotheses by examining the inter-scale correlations. Finally, a series of path analyses were performed, using the summed scores of each

scale, along with the single-item job satisfaction measure.

Path analysis is "a procedure for systematically combining the use of partial multiple correlation to study the causal relations among a set of variables" (Hunter and Gerbing, 1980, p. 35). It is useful when a set of causal relationships between variables is known, and the model thus formed is recursive, and if all the relationships between the variables are linear. These conditions were met by the specific causal model of burnout, as presented at the end of Section II.

The analysis was performed using the PATH subprogram of the PACKAGE programs (Hunter et al., 1980). This program used ordinary least squares to identify the path coefficients, or the amount of change in the value of antecedent variables caused by changes in the value of causally prior variables. It also identified the value of the residuals for each variable; these represent the effect of all extraneous causes of the variable, not included in the models. Last, this program reproduced a correlation matrix of all variables based on the path coefficients produced. The closer the reproduced correlation matrix was to the original, the better the causal model matched the data. The sum of the squared deviations from the mean was the single-item statistic used to measure the goodness of fit of the reproduced correlation matrix based on the model.

In order to use this program, an influence matrix was input for the causal model. The influence matrix was an alternative representation of the causal model, consisting of columns of variables. Every arrow in the path diagram was replaced by a 1 in the influence matrix.

The influence matrix for the causal model is presented in Figure 4.

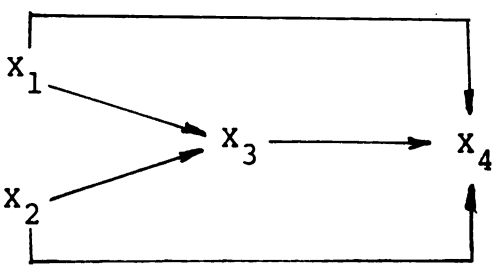
Role Strain = X_1

Timing Control = X_2

Job Satisfaction = X_3

Burnout = X_4

	X_1	X_2	X_3	X_4
X_1	0	0	1	1
X_2	0	0	1	1
X_3	0	0	0	1
X_4	0	0	0	0



Note - X_1 and X_2 are indicated as having a known noncausal relationship.

Figure 4. Influence matrix for the burnout model.

IV. RESULTS

This section presents the results of the data analyses described in Section III. First, the results of the confirmatory factor analysis on the burnout measure are described. Second, reliability coefficients, means and variances of all scales are reported. Third, the hypotheses presented in Section II of this thesis are addressed. Finally, the path analysis is reported, as well as several post hoc revisions. One model is selected from the second revision process which most closely fits the data.

Confirmatory Factor Analysis

A confirmatory factor analysis of the burnout measure subscales was performed to determine the factor loadings of each item on the estimated true scale scores, and the intercorrelations of these scores; this procedure used communalities in the diagonal of the correlation matrix.

Table 6 presents the factor loadings of the scale items from the confirmatory factor analysis. Table 7 presents the intercorrelations of their estimated scale scores. The factor loadings of the items indicates that all items do load more highly on the factor to which they belong than

TABLE 6

FACTOR LOADINGS FROM CONFIRMATORY FACTOR ANALYSIS

ITEM	I	II	III	IV	V
Dissatisfaction	.79	.44	.52	.61	.36
Stagnant	.62	.22	.25	.50	.10
Negative	.80	.55	.59	.52	.30
*Happy	.79	.26	.42	.65	.27
*Optimistic	.78	.35	.43	.70	.25
Disillusioned	.72	.45	.55	.61	.22
*Enthusiastic	.74	.30	.46	.57	.27
*Fulfilled	.77	.26	.22	.65	.24
*Pleased	.84	.29	.42	.73	.29
Frustrated	.75	.42	.60	.53	.39
Trapped	.63	.41	.50	.49	.28
Disoriented	.36	.68	.54	.23	-.01
Unsure	.35	.75	.68	.19	.13
*Responsible	.22	.38	.19	.30	-.17
*Prepared	.41	.55	.39	.32	.20
Incompetent	.13	.63	.44	-.02	-.04
Destructive	.36	.76	.46	.20	.07
Disorganized	.30	.70	.48	.16	.19
Insecure	.34	.54	.70	.29	.08
Worried	.41	.43	.75	.28	.40
Uneasy	.58	.60	.75	.41	.30
*Appreciated	.60	.23	.33	.81	.22
*Recognized	.63	.22	.32	.84	.15
*Heard	.68	.30	.42	.75	.17
Pressured	.31	.06	.38	.22	.71
Rushed	.21	.05	.12	.10	.71
α	.93	.83	.78	.84	.66

* = Recoded

TABLE 7

INTERCORRELATIONS OF BURNOUT FACTORS

	Dissatisfaction/ Stagnation	Incompetence	Worry	*Recognition	Time Pressure
Dissatisfaction/ Stagnation	1.00				
Incompetence	.48	1.00			
Worry	.60	.71	1.00		
*Recognition	.80	.31	.45	1.00	
Time Pressure	.36	.08	.35	.22	1.00

* = Recoded to negative

they do on any other factor, confirming the factor structuring. The items in factor one, however, also load highly on factor four, and vice versa. Consonant with the selection criteria for the factor elements, the differences between the loadings are at least .10. However, this indicates a strong correlation between factors one and four; the factor intercorrelation matrix (Table 7) identifies this correlation as .80.

Several of the items in factor two load highly on factor three, and vice versa. Most of these items also differ at a .10 level in their factor loadings with the exception of "Unsure/Sure", which has a .07 differential in its loading. The factor intercorrelation matrix identifies the relationship between factors two and three as a .71 correlation.

Because of the high intercorrelations of the burnout subscales, they were summed and treated as one variable for the following path analyses.

Reliability of the Measures

Estimates of internal consistency reliability were obtained for each of the measures, with the exception of the single-item global job satisfaction measure. The SPSS reliability subprogram was used to determine Cronbach's alpha coefficient for these measures. The scale means, standard deviations, number of items, and reliability estimates are reported in Table 8.

TABLE 8

RELIABILITY, MEANS AND STANDARD DEVIATIONS OF ALL MEASURES

	α	Mean	SD	N items
Time Control	.87	2.89	.76	10
Role Strain	.85	2.79	.60	14
Role Ambiguity	.83	2.47	.68	6
Role Conflict	.80	3.02	.71	8
Job Involvement	.74	2.50	.72	4
Global Job Satisfaction		2.48	.98	1
Burnout Scales:				
Dissatisfaction/ Stagnation	.93	3.24	.81	11
Incompetence	.83	3.98	.62	8
Worry	.78	3.47	.86	3
*Recognition	.84	3.21	1.00	3
Time Pressure	.66	2.39	.90	2
Summed Burnout Scale	.93	3.42	.60	27

* = all items recoded to reverse of factor title

All scales had a high value of 5.0 and a low of 1.0. Items were recorded in the direction of the scale name; i.e., 5.0 indicated total control over time, high role ambiguity, high role conflict, high job involvement and high job satisfaction.

The reliability measures were of a satisfactory nature for all scales, and ranged from .66 to .93.

Tests of the Hypotheses

The hypotheses described on page 57 were tested by correlational analysis. Zero-order correlations were computed among each of the scales and subscales. These are presented in Table 9, page 84. Almost all of the variables are significantly intercorrelated at the .05 level.

Hypothesis 1: The more control over the timing of work an employee has, the less burnout he/she will experience.

This hypothesis was supported by the data. The Time Control scale correlated with the entire burnout measure at the .001 level ($r = -.36$). Time Control correlated with each of the subscales of the burnout measure at the .001 level, with the exception of the Time Pressure subscale ($r = .05$, NS).

Hypothesis 2: The more control over the timing of work an employee has, the more job satisfaction he/she will experience.

This hypothesis was supported by the data. The Time Control scale correlated with Job Satisfaction at the .001

level (r = .27).

Hypothesis 3: The more control over the timing of work an employee has, the less role strain he/she will experience.

This hypothesis was supported by the data. Time Control correlated with Role Strain at the .001 level (r = -.32). Time Control correlated with each of the subscales of Role Strain, Role Ambiguity and Role Conflict, at the .001 level (r = -.31 and -.25, respectively).

Hypothesis 4: The more role strain an employee experiences, the less job satisfaction he/she will experience.

This hypothesis was supported by the data. The Role Strain measure correlated with Job Satisfaction at the .001 level (r = -.54). The two subscales of Role Strain, Role Ambiguity and Role Conflict, correlated with Job Satisfaction at the .001 level (r = -.53 and -.43, respectively).

Hypothesis 5: The more role strain an employee experiences, the more burnout he/she will experience.

This hypothesis was supported by the data. The Role Strain measure correlated with burnout at the .001 level (r = .66). Role Strain correlated with all the burnout subscales at the .001 level: the Role Strain subscales, Role Conflict and Role Ambiguity, correlated with burnout and all of its subscales at the .001 level, with the exception of Role Ambiguity and Time Pressure; they correlated at the .01 level (r = .14).

TABLE 9

INTERCORRELATIONS OF ALL SCALES

	1	2	3	4	5	6	7	8	9	10	11
1. Job Satisfaction	1.00										
2. Time Control	*** .27	1.00									
3. Role Ambiguity	*** -.53	*** -.31	1.00								
4. Role Conflict	*** -.43	*** -.25	*** .45	1.00							
5. Role Strain	*** -.54	*** -.32	*** .80	*** .90	1.00						
6. Dissatisfaction/ Stagnation	*** -.79	*** -.35	*** .58	*** .49	*** .62	1.00					
7. Incompetence	*** -.34	*** -.24	*** .43	*** .28	*** .40	*** .43	1.00				
8. Worry	*** -.37	*** -.20	*** .38	*** .31	*** .41	*** .51	*** .60	1.00			
9. Recognition (R)	*** -.62	*** -.36	*** .52	*** .48	*** .58	*** .69	*** .26	*** .36	1.00		
10. Time Pressure	*** -.21	-.04	** .14	*** .37	*** .31	*** .29	.03	*** .27	* .17	1.00	
11. Burnout	*** -.73	*** -.36	*** .62	*** .52	*** .66	*** .92	*** .69	*** .71	*** .72	*** .34	1.00

*** = significant at p<.001

** = significant at p<.05

* = significant at p<.01

R = Reverse scored

Hypothesis 6: The more job satisfaction an employee experiences, the less burnout he/she will experience.

This hypothesis was supported by the data. Job satisfaction correlates with burnout at the .001 level ($r = -.73$). Job Satisfaction also correlates with all the Burnout subscales at the .001 level.

All of the hypotheses established in Section II of this thesis were supported by the data.

Initial Path Analyses

Path analyses were performed to test the model described in Section III. The matrix of beta weights, or path coefficients, is presented in Table 10. The path diagram formed from this matrix is presented in Figure 5. The reproduced correlation matrix based on the beta weights is listed in Table 11. There is no difference between the reproduced correlation matrix and the observed one because the model being tested is exactly identified; in other words, the model includes exactly enough information to make unique estimates of each parameter. The path coefficients from Role Strain were -.50 to Job Satisfaction and .35 to Burnout. The coefficients of time control were .11 to Job Satisfaction and -.11 to Burnout. The coefficient of the Job Satisfaction-Burnout path was -.51.

TABLE 10

MATRIX OF PATH COEFFICIENTS FOR INITIAL MODEL

	X_1	X_2	X_3	X_4
X_1	0	0	0	0
X_2	0	0	0	0
X_3	-.50	.11	0	0
X_4	.35	-.11	-.51	0

TABLE 11

INPUT AND REPRODUCED CORRELATION MATRIX OF INITIAL MODEL

	X_1	X_2	X_3	X_4
X_1	1.00	.32	-.54	.66
X_2	.32	1.00	.27	.36
X_3	-.54	.27	1.00	.73
X_4	.66	-.36	-.73	1.00

X_1 = Role Strain
X_2 = Time Control
X_3 = Job Satisfaction
X_4 = Burnout

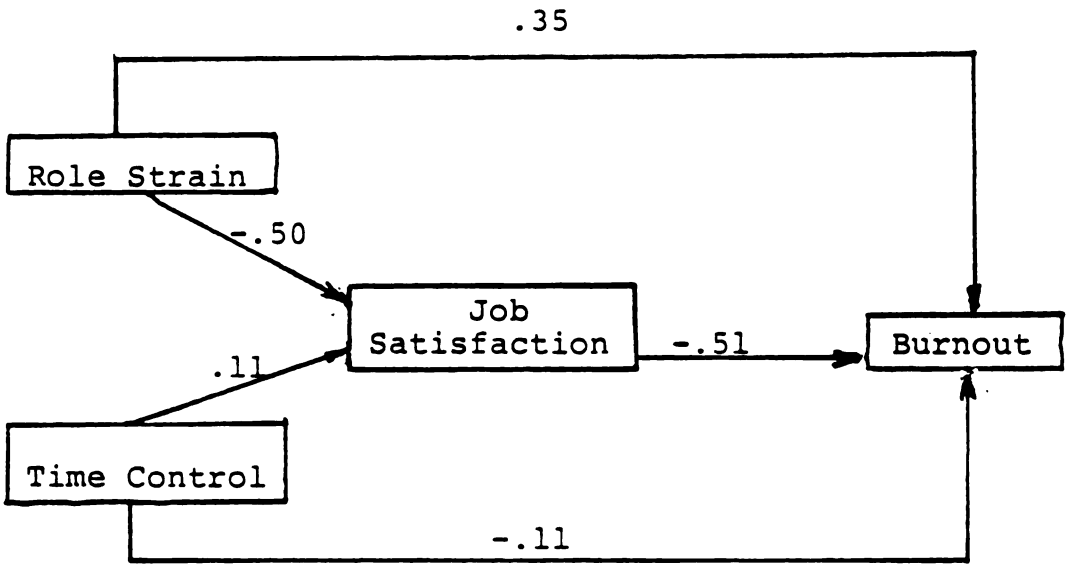


Figure 5. Path diagram of initial model.

Because of the small size of several of the beta weights, tests of significance were performed for them. The standard errors of the beta weights were derived by the formula:

$$\sigma^2_{\beta} = \frac{1-R^2}{1-r^2_{xy}} \times \frac{1}{N-2}$$

where N = number of subjects

$R^2 = \beta_1 r_1 + \beta_2 r_2$

1 = time control - job satisfaction

2 = role strain - job satisfaction

The 95% confidence interval was established around the beta-weight for the time control-job satisfaction relationship, and was found to range from $.01 < r < .21$. Because the confidence interval does not include 0.0, this beta weight is significantly different from 0.0 at the $p = .05$ level.

The 95% confidence interval around the role strain-job satisfaction beta weight ranged from $-.61 < r < -.49$; the 95% confidence interval ranged from $.23 < r < .47$ for the role strain-burnout relationship, and from $-.61 < r < -.41$ for the job satisfaction-burnout relationship. These were all significantly different from 0.0 at the $p = .05$ level.

The 95% confidence interval around the beta-weight of the time control-burnout relationship was found to range from $-.23 < r < .01$. This includes the point 0.0, and thus this beta weight was not found to be significantly different from 0.0 at the $p = .05$ level. Because of this non-significant relationship, the model was revised, and these revisions were tested with Path analysis.

Revised Path Models

The zero-order correlation matrix indicates that time control and role strain are related; the correlation between the two scales is .32 ($p < .001$). This is greater than the correlation of time control and job satisfaction, which was .27. In addition, the beta-weight of the time control-burnout path was not found to be significantly different from 0.0 at the $p = .05$ level. Because of these two facts, it is hypothesized that the existence of the relationships between time control and the dependent variables was due primarily to the effect of time control on role strain.

The path model was revised to reflect this hypothesis by placing time control as causally prior to role strain; the direct relationships between time control and both job satisfaction and burnout were eliminated. The revised model is presented in Figure 6.

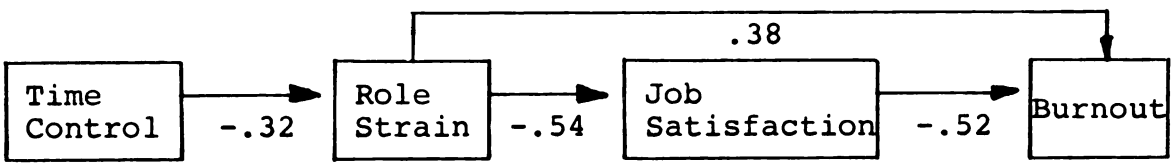


Figure 6. Initial revised path model.

Because of the change in causal ordering, the designations "X_1" and "X_2" were reversed, such that X_1 became time control and X_2 became role strain. The matrix of path coefficients for the revised model is found in Table 12. The correlation matrix reproduced from the beta weights is presented in Table 13. The difference between this reproduced matrix and the original input matrix is listed in Table 14.

The matrix of the difference between the original and reproduced correlations indicated that there was a stronger relationship between time control and the dependent variables than this revised model can account for. The correlation with job satisfaction is underestimated by .10, and the correlation with burnout is underestimated by .15.

This finding led to a second stage revision of the model. A direct causal link was added from time control to the dependent variables, although time control remained a causal factor in role strain.

Three parallel models were tested. In the first, time control was considered a direct cause of job satisfaction; this is shown in Figure 7. In the second, time control had a direct causal influence on burnout, which appears in Figure 8. This third model contained direct causal links between time control and both dependent variables, and is presented in Figure 9.

The matrices of path coefficients, reproduced correlations, and differences between input and reproduced

TABLE 12

MATRIX OF PATH COEFFICIENTS OF
INITIAL REVISED MODEL

	X_1	X_2	X_3	X_4
X_1	0	0	0	0
X_2	-.32	0	0	0
X_3	0	-.54	0	0
X_4	0	.38	-.52	0

TABLE 13

REPRODUCED CORRELATION MATRIX OF
INITIAL REVISED MODEL

	X_1	X_2	X_3	X_4
X_1	1.00	-.32	.18	-.21
X_2	-.32	1.00	-.54	.66
X_3	.18	-.54	1.00	-.73
X_4	-.21	.66	-.73	1.00

Sum of Squared Deviations = .03

X_1 = Time Control
X_2 = Role Strain
X_3 = Job Satisfaction
X_4 = Burnout

TABLE 14

DIFFERENCE BETWEEN OBSERVED AND PREDICTED CORRELATIONS OF INITIAL REVISED MODEL

	X_1	X_2	X_3	X_4
X_1	0.0	0.0	.10	0.0
X_2	0.0	0.0	0.0	-.15
X_3	.10	0.0	0.0	0.0
X_4	-.15	0.0	0.0	0.0

Sum of Squared Deviations = .03

X_1 = Time Control
X_2 = Role Strain
X_3 = Job Satisfaction
X_4 = Burnout

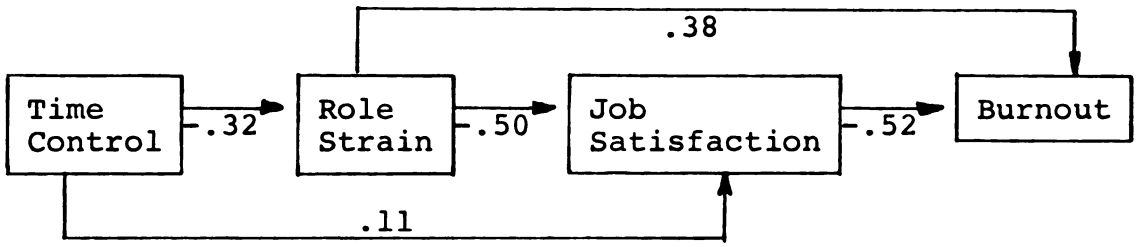


Figure 7. Secondary revised path model (#1).

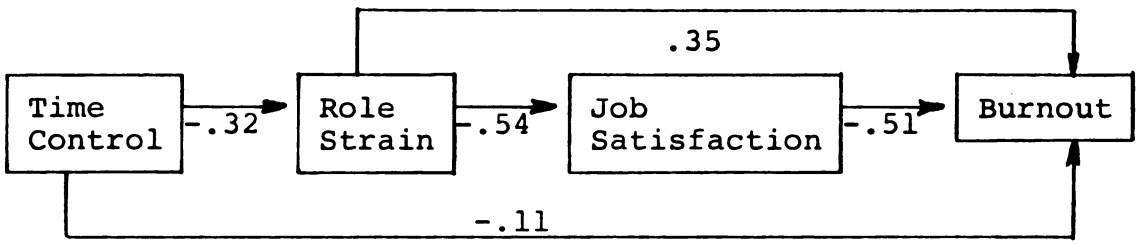


Figure 8. Secondary revised path model (#2).

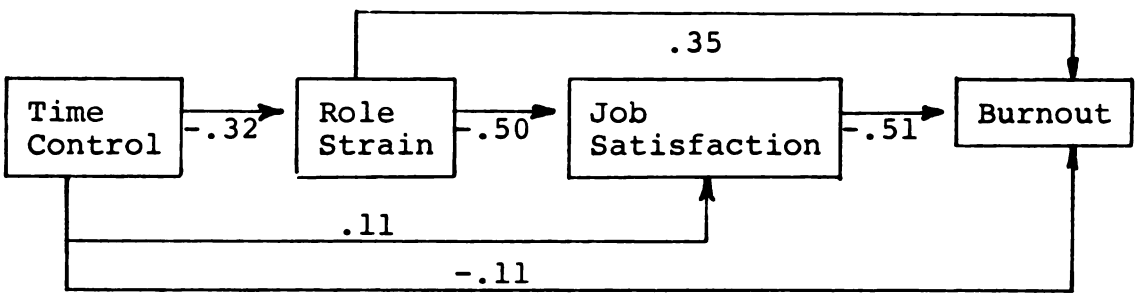


Figure 9. Secondary revised path model (#3).

correlations follow. Tables 15 through 17 describe the first of these models, Tables 18 through 20 describe the second, and Tables 21 through 22 describe the third.

Examination of the difference tables (Table 17 and Table 20) indicates that the first model, where time control directly causes job satisfaction, appears to fit the data better than the second model, where time control directly causes burnout. In the first model, only the time control-burnout relationship is not correctly predicted; it is underpredicted by r = .09. In the second model, the time control and job satisfaction was underestimated by .10, the correlation between time control and burnout by .05, and the correlation between job satisfaction and burnout by .01.

The sum of the squared deviations from the mean are identical (.01) for both models, however. The sum of the squared deviations from the mean is a statistical criteria of the goodness of fit of the linear curve predicted by the model. It is calculated by squaring the horizontal deviations of each data point to the predicted line (Freund and Williams, p. 304-305). Thus, this statistic indicates that the first and second revised models fit the data equally well.

The last model, like the first, unrevised model, is exactly identified; thus the observed and reproduced correlation matrixes are the same. This model fits the data such that all the zero-order correlations are predicted, and the strength of the time control-role strain correlation is

TABLE 15

MATRIX OF PATH COEFFICIENTS OF SECONDARY REVISED MODEL (#1)

	X_1	X_2	X_3	X_4
X_1	0	0	0	0
X_2	-.32	0	0	0
X_3	.11	-.50	0	0
X_4	0	.38	-.52	0

TABLE 16

REPRODUCED CORRELATION MATRIX OF SECONDARY REVISED MODEL (#1)

	X_1	X_2	X_3	X_4
X_1	1.00	-.32	.27	-.27
X_2	-.32	1.00	-.54	.66
X_3	.27	-.54	1.00	-.73
X_4	-.27	.66	-.73	1.00

TABLE 17

DIFFERENCE BETWEEN OBSERVED AND PREDICTED CORRELATIONS OF SECONDARY REVISED MODEL (#1)

	X_1	X_2	X_3	X_4
X_1	0	0	0	-.09
X_2	0	0	0	0
X_3	0	0	0	0
X_4	-.09	0	0	0

Sum of squared deviations = .01

X_1 = Time Control

X_2 = Role Strain

X_3 = Job Satisfaction

X_4 = Burnout

TABLE 18

MATRIX OF PATH COEFFICIENTS OF SECONDARY REVISED MODEL (#2)

	X_1	X_2	X_3	X_4
X_1	0	0	0	0
X_2	-.32	0	0	0
X_3	0	-.54	0	0
X_4	-.11	.35	-.51	0

TABLE 19

REPRODUCED CORRELATION MATRIX OF SECONDARY REVISED MODEL (#2)

	X_1	X_2	X_3	X_4
X_1	1.00	-.32	.18	-.31
X_2	-.32	1.00	-.54	.66
X_3	.18	1.54	1.00	-.72
X_4	-.31	.66	-.72	1.00

X_1 = Time Control
X_2 = Role Strain
X_3 = Job Satisfaction
X_4 = Burnout

TABLE 20

DIFFERENCE BETWEEN OBSERVED AND PREDICTED CORRELATIONS OF SECONDARY REVISED MODEL (#2)

	X_1	X_2	X_3	X_4
X_1	0	0	.10	-.05
X_2	0	0	0	0
X_3	.10	0	0	-.1
X_4	-.05	0	-.1	0

Sum of squared deviations = .01

X_1 = Time Control
X_2 = Role Strain
X_3 = Job Satisfaction
X_4 = Burnout

TABLE 21

MATRIX OF PATH COEFFICIENTS OF SECONDARY REVISED MODEL (#3)

	X_1	X_2	X_3	X_4
X_1	0	0	0	0
X_2	-.32	0	0	0
X_3	.11	-.50	0	0
X_4	-.11	.35	-.51	0

TABLE 22

REPRODUCED CORRELATION MATRIX OF SECONDARY REVISED MODEL (#3)

	X_1	X_2	X_3	X_4
X_1	1.00	-.32	.27	-.36
X_2	-.32	1.00	-.54	.66
X_3	.27	-.54	1.00	-.73
X_4	-.36	.66	-.73	1.00

Sum of squared deviations = .00

X_1 = Time Control
X_2 = Role Strain
X_3 = Job Satisfaction
X_4 = Burnout

incorporated into the model. At the same time, the smaller but still significant relationships of time control and the two dependent variables are accounted for by the model.

Summary

This section presented the results of the analyses performed in this thesis. The confirmatory factor analysis of the affective burnout measure supported the validity of the measure's factor structure. Internal consistency reliability of all measures were reported at acceptable levels. The six hypotheses were supported by data from a zero-order correlation matrix of all scales and subscales. The results of the initial path analysis were presented. A series of modifications of the original path model were described, each including another relationship which improved the fit of the model to the data. A final version was established which contained all the elements of the original model, with the addition of a causal relationship between time control and role strain.

V. DISCUSSION

This section presents the conclusions drawn from the results of the described study of burnout. First the method of measuring burnout is examined, and the robustness of the factor structure of the affective measure is supported. Next the findings on each variable are presented, along with the theoretical implications of those findings. Future directions for research are suggested, and limitations of the present study are described.

The Measurement of Burnout

Burnout is defined as the negative changes in affects and attitudes that result from ineffective coping with job stress. Previous research has described measures which focus on cognitive aspects of burnout (Maslach, 1981) and exhaustion (Pines, 1981). An affectively oriented measure of burnout was developed, which consisted of 53 semantic differential items describing emotions and attitudes. These items loaded highly on five factors in an exploratory factor analysis; each factor described a feeling or attitude in response to work. This measure was administered to the 243 subjects of this study, and confirmatory factor analysis was used to examine the robustness of the factor structure.

Due to space limitations, all of the 53 items in the measure could not be included in this study. Twenty-six semantic differential items were used to tap the five factors. Eleven items came from the dissatisfaction/-stagnation factor, seven items came from the incompetence factor, three items from the worried factor, three from the recognition factor, and two from the time pressure factor. All items were found to load more highly on the factors from which they were drawn than on any other factor, reproducing the original factors in the new sample.

Each of the factors formed a subscale which described a different affective reaction to work. The internal consistency reliabilities of the factors were all acceptable; the two-item "Time Pressure" scale had the lowest of these at $\alpha = .66$, while the other scales ranged from .78 to .93. All of the burnout scales were highly intercorrelated. The intercorrelations of the estimated scale scores, corrected for attenuation, ranged from .08 to .80, with a mean of .40. The most closely related scales were Dissatisfaction/Stagnation and Recognition ($r=-.69$), Incompetence and Worry ($r=.60$), and Dissatisfaction/Stagnation and Worry ($r=.51$). The scale that is the most independent of the others is Time Pressure. It correlated significantly with Dissatisfaction/Stagnation ($r=.29$, $p < .001$), with Worry ($r=.27$, $p < .001$) and with Recognition ($r=-.17$, $p < .01$); it did not signicantly correlate with Incompetence.

There are several potential reasons for these high scale intercorrelations. First, there is probably a substantive amount of method bias occurring. All items were presented in the same Likert format. The items were intermingled in their order of presentation, such that items from different scales were adjacent to one another.

Second, the items all measure feelings in response to work. Although they describe different feelings, they measure the same type of variable. The average scale intercorrelation found in this study is not especially high for this type of rating set. For example, when satisfaction with five aspects of work is measured with the common format of the faces scale, the interrelations range from .16 to .59, and the mean intercorrelation is .42 (Locke, Smith, Kendall, Hulin and Miller, 1964).

Third, the scales with the highest correlations also are logically related. If an employee feels recognized and appreciated, he/she is more likely to feel satisfied, positive, happy and forward-moving, while an employee who feels ignored and unappreciated is more likely to be dissatisfied, unhappy, negative, and trapped. Likewise, an employee who feels incompetent has more reason to be worried and insecure about his/her job.

Last, the conceptualization of burnout assumes that these feelings will all change together. Burnout is a

negative change in several affects and attitudes in response to job stress; if the stress is not effectively coped with, many feelings and attitudes take on a negative cast. There are no theoretical grounds to assume that some feelings change while others do not; therefore, these feelings should covary. As stress increases and the employee fails to cope with it, the entire syndrome of negative changes occurs (Cherniss, 1980; Maslach, 1978, 1981).

For these reasons, the measure of burnout is taken as the average of responses on all the items from all the subscales. The internal consistency reliability of this summed measure was α =.93. The five factors which emerged from the initial analysis were confirmed in this sample; there appear to be five distinct areas of affective reaction to work tapped by this measure. These areas are strongly related, however. Much as one can describe "satisfaction with work" as the summation of satisfaction with several distinct aspects of work, as the Job Descriptive Index does (Locke et al., 1964), one can describe "burnout" as the summation of several distinct affective reactions to work.

Theoretical Implications

Job Satisfaction

This study found job satisfaction to be significantly correlated, at the .001 level, with all other variables

examined in the model. It correlated positively with time control (.27), and negatively with role ambiguity (r = -.53), role conflict (r = -.43), role strain (r = -.54), and burnout (r = -.73).

It was hypothesized that high role strain and low timing control resulted in low degrees of job satisfaction. These hypotheses are supported by the data.

The Path model which most closely fit the data included the direct causal impact of role strain in decreasing job satisfaction. The beta weight for this causal link was -.50, indicating a very strong direct relationship. This Path model also included the direct causal impact of time control on job satisfaction, along with its indirect impact by its contribution to role strain.

These results add further support to the previous literature which found a strong link between role strain and job satisfaction. The regression analysis also implies that role strain has a causal effect on job satisfaction. These analyses are not longitudinal, and hence cannot directly support the causal hypothesis and the direction of causality; this is not proof that role strain creates job dissatisfaction, rather than vice versa. However, the close fit of the final Path model with the data supports the hypothesis that job satisfaction is decreased by role strain and directly increased by control over the timing of work.

Burnout

It was hypothesized that burnout is related to low job satisfaction, high role strain and low timing control; all of these relationships are supported by the correlational data. The strong correlations found between the affective measure of burnout and the theoretically related variables of role strain, job dissatisfaction and timing control support the validity of the present measure. The similarity in the correlational patterns of the present measure to those of previous burnout measures, such as the Maslach Burnout Inventory, suggests that the present measure does indeed tap affective aspects of burnout. Further validation and cross-validation is needed to specify the exact nature of the relationships between affective and cognitive measures of burnout.

The regression analysis reveals that most of the variance in burnout is accounted for by job dissatisfaction. The second greatest direct impact on burnout is role strain; the last element which impacts burnout is timing control.

Again, the temporal aspects of the model and the direction of causality cannot be proven by this study; an experimental or longitudinal study is required to give specific evidence for this. However, the model of the causal processes which result in burnout was repeatedly modified to create the closest fit with the data; this implies that the

assumptions of direct causal impact of role strain, and job satisfaction on burnout are accurate.

The Relationship of Job Satisfaction and Burnout

Job satisfaction and burnout were hypothesized to be strongly negatively correlated, distinct reactions to work.

They were theoretically differentiated by the specific process of ineffective coping with job stress that results in burnout, as opposed to the variety of causes of job dissatisfaction; by the extreme intensity of burnout, as opposed to the more moderate attitudinal and affective reactions that have been measured as job satisfaction; and by the variety of attitudes and affects that constitute burnout, of which job dissatisfaction is one part.

The overall correlation of the affective measures of burnout and job satisfaction was -.73. The correlations of job satisfaction with the subscales of burnout varied from .21 to .79. The pattern of correlations indicated that the dissatisfaction/stagnation subscale of the burnout measure tapped the same construct as global job satisfaction; the two were correlated at .79. This subscale contained almost half of the items in the entire burnout measure, which accounted for the high correlation of the summed scale with job satisfaction.

Job satisfaction correlated .62 with recognition, .37 with worry, .34 with efficacy, and .21 with time pressure.

The stronger relationships with the burnout satisfaction subscale than with the global job satisfaction measure are probably due at least in part to measurement bias. The identical format and interspersed position of the burnout items may account for some similarity of responses, as opposed to the job satisfaction measure, which had a completely different format and appeared in another section of the questionnaire.

Despite the somewhat stronger correlations of the burnout dissatisfaction scale with the other burnout subscales, the pattern of correlations is similar to that between the global satisfaction measure and the four last burnout subscales. Both are strongly related to feelings of recognition, moderately related to feelings of efficacy and worry, and slightly related to feeling pressured and rushed.

This suggests that job satisfaction is one of the attitudes and affects that changes in response to job stress. Despite its history as the central direct measure of affect in the organizational literature, it is not the only reaction that people have to their work. It is strongly correlated with overall burnout, and somewhat less strongly with perceptions of being recognized. It correlates moderately with feelings of efficacy and worry, and slightly with time pressure. Thus, burnout and job satisfaction appear to be distinct but related constructs.

Role Strain

Role strain was defined as the sum of role conflict and role ambiguity; it was hypothesized as a type of job stress which leads to job dissatisfaction and burnout. Lack of timing control was hypothesized as a type of job stress and a limitation on coping methods, which lead to dissatisfaction and burnout. The results of this study supported these hypotheses, with some modifications.

The zero-order correlations of role strain with the dependent variables indicate that it correlated with burnout at .66 and with job satisfaction at -.54. Each of its subscales also correlated highly with the dependent measures: role ambiguity correlated at r = -.53 with job satisfaction, and at .62 with burnout, while role conflict correlated at r = .43 and .52, respectively.

The role strain subscales had similar but not identical patterns of relationships with the burnout subscales. Role ambiguity was more strongly related to dissatisfaction/stagnation than role conflict (r = .58 and .59), to efficacy (r = .43 and .28), to worry (r = .38 and .31) and to recognition (r = .52 and .48). The last burnout subscale, time pressure, showed the opposite pattern; it correlated at r = .14 with role ambiguity, and r = .37 with role conflict.

These patterns may be understood by a close analysis of the burnout subscales. Time pressure had the lowest correlation with other measures of any of the burnout subscales.

It also had the lowest correlation of any of the subscales with the overall burnout measure. It may be that time pressure was perceived as the direct result of or as an indicator of role conflict. Role conflict is the incompatability of expectations from various sources, one type of which is role overload: "expecting the role incumbent to engage in several role behaviors,... within too short a time period" (Kahn et al., 1964). The logical result of role overload is the perception of being rushed and pressured. Role overload is not specifically included in the form of the role strain measure used in this thesis, but several of the items have been used elsewhere to measure it, such as, "I receive an assignment without the manpower to complete it" and "I receive an assignment without adequate resources and materials to execute it".

This rationale implies that the time pressure subscale of the burnout measure may be used as an indicator of perceived role overload. This hypothesis is supported by the fact that time pressure correlated higher with role conflict ($r = .37$) than with any other measure, including the overall burnout scale ($r = .34$).

The regression analyses used to test the Path model indicate that role strain directly accounts for 50% of the variance in job satisfaction, and 35% of the variance in burnout. This supports the direct causal impact of role strain on job dissatisfaction and burnout, as well as the

indirect effect of role strain on burnout through decreased job satisfaction. Support for the model, however, cannot be taken to disprove competing models with alternative causal Paths. Experimental or longitudinal analysis is required to rigorously test such hypotheses.

Timing Control

Timing control was defined as the amount of control employees have over which aspects of work they do, and the placement of the hours they work. It was measured by a ten item scale which was originated for this study. Results showed that timing control was independent of perceived time pressure (Table 9). This indicates that the measure did indeed tap the job context factor of when work is done, rather than the job content factor of the amount of work done or overload.

The literature suggests that there is a relationship between control and negative affect, although the effect of control over the timing of work has not been singled out for study before. General situational control has been directly related to negative affect and attitudes (Suls and Mullen, 1981; Rehm, 1977; Abramson, Seligman and Teasdale, 1978; Glass, Singer, and Friedman, 1969; Lefcourt, 1973; Langer and Rodin, 1976). Likewise, autonomy has been correlated with increased job satisfaction (Hackman and Lawler, 1971); Hackman and Oldham, 1976). This implies a direct relation-

ship between timing control and the affective dependent variables.

The zero-order correlations of time control with the dependent variables indicate that it correlated with burnout at -.36 and with job satisfaction at .27. The path analyses indicated that time control had a small but significant direct effect on job satisfaction. The initial revised model and the first two models of the second revision were rejected because they did not include direct causal impact of time control on both dependent variables.

The last model of the second revision did include small direct links to both dependent variables, and appeared to maximally fit the data.

The Relationship of Role Strain and Timing Control

Timing control had its greatest impact as a causal factor in role strain. The zero order correlation between the two was .32, and the beta weight of the link in the path model was .32. Previous research indicated a relationship between timing control and role strain (Kanter, 1977; Korman and Korman, 1980; Ronen, 1981), as well as a direct relationship between timing control and job stress (Marshall and Cooper, 1978; Maslach and Pines, 1977; Karasek, 1979). This had not been represented in the initial path model, although it was present in all revisions.

Summary of Theoretical Implications

The results of this study imply that burnout, measured as affective and attitudinal perceptions of one's job, is a construct related to, but differentiated from, global job satisfaction. The affects and attitudes consist of five underlying factors. Of these, dissatisfaction/stagnation and recognition factors are strongly related to global job satisfaction. The incompetence and worry factors are significantly, but less strongly, correlated. Time pressure is a separate factor which is not significantly correlated with incompetence, and has a low correlation with recognition.

Burnout, job satisfaction, role strain and time control are all significantly intercorrelated. Role strain is formed of two related but differentiated constructs, role conflict and role ambiguity. They have similar degrees of relationship with burnout and job satisfaction, and smaller but significant relationships with timing control. The time pressure subscale of the burnout measure may be the result of role overload.

Timing control is significantly correlated with all variables except for time pressure. This indicates that the control over the timing of work is separate from feeling pressured and rushed at work.

Path analyses imply that burnout is caused by role strain, job dissatisfaction and lack of timing control. Time control decreases the role strain and increases the

job satisfaction experienced, while role strain decreases the job satisfaction experienced.

Implications for Practice

The results of this study are especially significant in terms of their practicality. Many structural elements of organizations and individual difference variables have been found to be correlated with burnout; these are particularly difficult to change in a functioning organization, either due to expense or to the limitations of selection procedures. Two key elements of this model, time control and role strain, are situation and job-related, however; this makes them relatively easy to change in functioning organizations.

This study implies that in human service organizations such as mental health institutions, both the mild affect of job dissatisfaction and the extreme affect of burnout may be decreased by decreasing role strain. Arranging work situations so that employees know what is expected of them and how to fulfill those expectations, and so that they operate under compatible expectations may decrease the negative affects. Hence, an intervention which would decrease role conflict or ambiguity will be likely to decrease burnout and increase job satisfaction.

Timing control is shown to be significantly related to role strain, job dissatisfaction and burnout. This implies

that, in organizations with direct client care, a simple, inexpensive means for affecting role strain and negative affect towards work may be to increase employees' control of the timing of their work hours and the ordering of their work activities within those hours. Timing control emerged in this study as an identifiable factor which seemed to act as a type of control over the work situation and impacted on employee perceptions of role strain, affects, and attitudes toward their jobs. This control of the process of work is especially salient because it does not appear to greatly reduce the amount of work being done, or involve restructuring of jobs themselves.

Directions for Future Research

This study has supported the proposed model of burnout, which includes the elements of role strain, timing control, job satisfacton and burnout itself. There are a multitude of unexplored areas that this study briefly touches on, which invite further analysis. These include other effects of timing control, other variables that cause or moderate burnout, and variables which result from burnout.

The variable of timing control has been virtually unexplored in previous literature. It is empirically separate from perceived time pressure, and seems to directly impact on role strain. As an element of work that is not

particularly costly for organizations to manipulate, it could be of practical importance in decreasing role strain and increasing job satisfaction. Its interaction with general autonomy and control over the job content seem particularly salient areas for study. It may be that different types of people value control over the content vs. the context of a job, or it may be that job context control only becomes important when there is a certain amount of job content control.

As for the causes of burnout itself, this study examined only a few salient variables. There are many others which may have even greater causal impact on burnout, such as any of those listed on Table 4; this will be known only by further examination.

This study utilized path analysis to allow causal inferences, but it could not directly test causality, nor could it include any non-recursive variables. This is a dire limitation in burnout research, as there is reason to believe that some of the most focal elements in the occurrence of burnout have complex interactions and involve feedback loops. The most obvious of these is job involvement.

Most of the case studies and in-depth descriptions of burned out workers, as well as the individuals interviewed for this study, described highly dedicated, job-involved individuals. Maslach (1981), Pines (1981), and Cherniss (1980), limit their definition of burnout to occurring only

in human service workers, who seem to be generally highly job involved.

Cherniss (1980) describes the high identification with the job that typifies human service professionals; others (Maslach and Pines, 1977; Maslach, 1978; Freudenberger, 1975, 1977; Matingly, 1977; Kahn, 1978), briefly mention the assumption that human service workers are deeply involved with their clients and their jobs.

The withdrawal from the job that Cherniss (1980), Freudenberger (1975), and Pines (1981) discuss as part of burnout seems to be even more noticeable due to the extreme initial involvement (Edelwich and Brodsky, 1981). Edelwich and Brodsky place involvement with enthusiasm in the first stage of a process model of burnout. Thus it seems that the variable of job involvement is included in many models of burnout, without being specifically identified as such. Job involvement may be a necessary causal factor in burnout. Its formal identification would allow for the direct measurement of the variable, and the integration of previous research on job involvement into the burnout construct.

Patchen (1970) found a significant relationship between control over work methods and job involvement. This relationship was increased by a great deal of feedback or job difficulty. Waters, Roach and Batlis (1974) found a significant correlation between job involvement and work autonomy. Rabinowitz (1975) found a significant correlation between

job involvement and Hackman and Lawler's (1971) Job Diagnostic Survey, measuring "job scope".

It has been hypothesized that job involvement is both a cause and result of several factors in the work situation. "Involvement increases as a result of satisfying job experiences, and in turn, the more involved a person is, the more effort he or she will exert on the job" (Rabinowitz and Hall, 1981, p. 285). Some empirical support of this view of job involvement has been found (Hall and Foster, cited in Rabinowitz et al.).

In the case of burnout, job involvement may be a complex and important variable. Without a high degree of job involvement burnout may not occur; the employee may not care enough about the conditions and occurrences on the job to be severely strained by job stresses (Cherniss, 1980). On the other hand, the negative changes in attitudes that constitute burnout frequently result in decreased job involvement. This can occur through depersonalization of clients (Maslach, 1980, 1981), through emotional exhaustion (Pines, 1981), or simply through withdrawing from the work and reordering the priorities of the aspects of one's life (Korman and Korman, 1980; Cherniss, 1980).

The literature provides ample evidence for the importance of job involvement in burnout. However, to analyze this variable properly, longitudinal data are needed.

Without that, no conclusions can be drawn about the process which creates any relationships that may be found.

In order to have a true test of any causal model, including the one presented in this study, experimental or longitudinal data are required. Future research that attempts to determine what causes burnout will have to include such data.

Another limitation of this study which should be treated by future research is the need for multiple measures of job satisfaction and burnout. The relationship between these two variables would be clarified by the use of multi-item, multi-faceted measures of job satisfaction, as well as by the use of more behaviorally and cognitively oriented measures of burnout, such as the Maslach Burnout Inventory. The interrelationships of these measures would be very helpful in understanding where and how job satisfaction and burnout overlap.

All the variables in this study were measured by subjective employee perceptions. The very high correlations found may be due in part to the percept-percept limitations of the methodology. Future research must avoid these limitations by including objective measures. These may include objectively measured job stresses such as workload, severity of clients, number of hours worked, and time and space limitations. Behavioral measures of antecedent and coincidental variables are also needed. Cognitive and physical aspects of

burnout have been correlated with turnover and absenteeism; they have been hypothesized as relating to accident rates and performance levels as well. Data on all of these behaviors should be used to define the extent of these relationships, and further delineate the differences between job satisfaction and both the cognitive and affective aspects of burnout.

Lastly, the results of burnout have been mentioned in this and other studies, but have never been extensively examined. Hypotheses have been raised, costs have been estimated and some correlational data has been gathered, but no complete categorizations and analysis have been attempted. Again, to ascertain true consequences of burnout, longitudinal data are required. That is the only way to separate out the confusion of which related elements precede burnout, which follow from it, and their potentially intricate interactions.

Summary

This study reviewed the literature on burnout and its relationships with time control, role strain and job satisfaction. An affectively oriented measure of burnout was developed and its structural integrity and reliability was examined and supported. Six hypotheses of the relationships of the four variables were developed, tested and supported.

A process model of burnout was suggested from those relationships, and was modified to maximally fit the data.

The analyses suggest that burnout results from role strain, job dissatisfaction and lack of control over the timing of work. Timing control decreases role strain, increases job satisfaction and decreases burnout. Role strain decreases job satisfaction and increases burnout.

Further analysis is required to support the causal assumptions of the model; longitudinal or experimental studies are required to test the specific causal orderings. Multiple measurement, both behavioral and questionnaire, are needed to delineate the constructs of job satisfaction and burnout. The role of job involvement in the process of burnout should be examined longitudinally, in order to examine the suspected non-recursive relationships and feedback loops involved.

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APPENDIX

QUESTIONNAIRE

APPENDIX

This part of the survey asks you to describe the way you generally feel at work. Below are some pairs of words which are opposites. Circle the number between the pair which most closely reflects how you feel at work.

EXAMPLE: Calm 1 : 2 : 3 : 4 : 5 Nervous

If you generally feel very calm at work, you would circle a "1". If you feel neither calm nor nervous, you would circle a "3".

Dissatisfied	1 : 2 : 3 : 4 : 5	Satisfied
Appreciated	1 : 2 : 3 : 4 : 5	Unappreciated
Disoriented	1 : 2 : 3 : 4 : 5	Oriented
Pressured	1 : 2 : 3 : 4 : 5	Not pressured
Stagnant	1 : 2 : 3 : 4 : 5	Developing
Unsure	1 : 2 : 3 : 4 : 5	Confident
Recognized	1 : 2 : 3 : 4 : 5	Ignored
Rushed	1 : 2 : 3 : 4 : 5	Leisurely
Negative	1 : 2 : 3 : 4 : 5	Positive
Insecure	1 : 2 : 3 : 4 : 5	Secure
Responsible	1 : 2 : 3 : 4 : 5	Not responsible
Worried	1 : 2 : 3 : 4 : 5	Unworried
Happy	1 : 2 : 3 : 4 : 5	Unhappy
Prepared	1 : 2 : 3 : 4 : 5	Unprepared
Underworked	1 : 2 : 3 : 4 : 5	Overloaded
Naive	1 : 2 : 3 : 4 : 5	Sophisticated
Wise	1 : 2 : 3 : 4 : 5	Foolish
Excited	1 : 2 : 3 : 4 : 5	Bored
On a treadmill	1 : 2 : 3 : 4 : 5	Making Progress
Energetic	1 : 2 : 3 : 4 : 5	Exhausted
Powerful	1 : 2 : 3 : 4 : 5	Powerless

Remember, circle the number which reflects the way you generally feel at work.

Uncommitted	1 : 2 : 3 : 4 : 5	Committed
Idealistic	1 : 2 : 3 : 4 : 5	Cynical
Exploited	1 : 2 : 3 : 4 : 5	Rewarded
Utilized	1 : 2 : 3 : 4 : 5	Underutilized
Unsuccessful	1 : 2 : 3 : 4 : 5	Successful
Active	1 : 2 : 3 : 4 : 5	Passive
Uneasy	1 : 2 : 3 : 4 : 5	Comfortable
Supported	1 : 2 : 3 : 4 : 5	Unsupported
Optimistic	1 : 2 : 3 : 4 : 5	Pessimistic
Unprepared	1 : 2 : 3 : 4 : 5	Prepared
Heard	1 : 2 : 3 : 4 : 5	Not heard
Worthwhile	1 : 2 : 3 : 4 : 5	Worthless
Incompetent	1 : 2 : 3 : 4 : 5	Competent
Disillusioned	1 : 2 : 3 : 4 : 5	Hopeful
Destructive	1 : 2 : 3 : 4 : 5	Constructive
Disorganized	1 : 2 : 3 : 4 : 5	Organized
Enthusiastic	1 : 2 : 3 : 4 : 5	Dejected
Dependent	1 : 2 : 3 : 4 : 5	Independent
Fulfilled	1 : 2 : 3 : 4 : 5	Unfulfilled
Pleased	1 : 2 : 3 : 4 : 5	Angry
Frustrated	1 : 2 : 3 : 4 : 5	Content
Trapped	1 : 2 : 3 : 4 : 5	Free
Authentic	1 : 2 : 3 : 4 : 5	Phony
Confused	1 : 2 : 3 : 4 : 5	Unconfused
Good	1 : 2 : 3 : 4 : 5	Bad

Remember, circle the number which reflects the way you generally feel at work.

Aimless	1 : 2 : 3 : 4 : 5	Focused
Motivated	1 : 2 : 3 : 4 : 5	Unmotivated
Incompetent	1 : 2 : 3 : 4 : 5	Competent
Productive	1 : 2 : 3 : 4 : 5	Unproductive
Unsure	1 : 2 : 3 : 4 : 5	Sure
Relaxed	1 : 2 : 3 : 4 : 5	Tense
Realistic	1 : 2 : 3 : 4 : 5	Unrealistic

Please indicate the amount of control that you personally have over the different aspects of your work time, using the following scale:

A = Total Control

B = A Good Deal of Control

C = Some Control

D = Very Little Control

E = No Control

How much control do you have over:

1.	The specific number of hours you work every day?	A B C D E
2.	The specific number of hours you work every week?	A B C D E
3.	Which specific hours do you work every day?	A B C D E
4.	Which specific aspects of your job you work on, at different times during the day?	A B C D E
5.	Which specific aspect of your job you work on, at different days of the week?	A B C D E
6.	The specific amount of time you take for lunch every day?	A B C D E
7.	Which specific time you take lunch every day?	A B C D E
8.	The specific amount of time you take for work breaks every day?	A B C D E
9.	Which specific time(s) you take work breaks every day?	A B C D E
10.	Rearranging your work hours to deal with something special that comes up in your personal or family life?	A B C D E

JOB SATISFACTION

Each pair of faces below has been given a number from 1 through 5. Pick the pair that best describes how you feel about your job and mark the number of that pair of faces on your answer sheet.

(Kunin, 1955)

JOB INVOLVEMENT

Describe your feelings about your job, using the following scale:

A = Strongly Disagree

B = Disagree

C = Neither Agree Nor Disagree

D = Agree

E = Strongly Agree

1. The major satisfactions of my life come from my job. A B C D E
2. I live, eat and breathe my job. A B C D E
3. I am very much involved personally in my work. A B C D E
4. The most important things that happen to me involve my job. A B C D E

(Rabinowitz, 1979, from Lodahl and Kejner, 1966)

ROLE CONFLICT AND AMBIGUITY

Describe the conditions under which you work, using the following scale:

A = Very False

B = False

C = Neither True Nor False

D = True

E = Very True

1.	I feel certain about how much authority I have.	A B C D E
2.	There are clear, planned goals and objectives for my job.	A B C D E
3.	I have to do things that should be done differently.	A B C D E
4.	I know that I have divided my time properly.	A B C D E
5.	I receive an assignment without the manpower to complete it.	A B C D E
6.	I know what my responsibilities are.	A B C D E
7.	I have to buck a rule or policy in order to carry out an assignment.	A B C D E
8.	I work with two or more groups who operate quite differently.	A B C D E
9.	I know what is expected of me.	A B C D E
10.	I receive incompatible requests from two or more people.	A B C D E
11.	I do things that are apt to be accepted by one person and not accepted by others.	A B C D E
12.	I receive an assignment without adequate resources and materials to execute it.	A B C D E
13.	Explanation is clear of what has to be done.	A B C D E
14.	I work on unnecessary things.	A B C D E

(Rizzo, House and Lirtzman, 1977)