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**STAFF BURNOUT AND JOB-INDUCED TENSION:
THE BUFFERING EFFECTS OF SOCIAL SUPPORT AND LOCUS OF
CONTROL**

by

Scott D. J. Graham

B.A. (Hon.), The University of Western Ontario 1991

**THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF BUSINESS ADMINISTRATION**

in the Faculty

of

Business Administration

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Simon Fraser University

July 1993

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SAMPLE ITEMS FOR THE MASLACH BURNOUT INVENTORY

"Human Services Survey"

by Christina Maslach and Susan E. Jackson

Directions: The purpose of this survey is to discover how various persons in the human services or helping professions view their jobs and the people with whom they work closely. Because persons in a wide variety of occupations will answer this survey, it uses the term "recipients" to refer to the people for whom you provide your service, care, treatment, or instruction. When you answer this survey please think of these people as recipients of the service you provide, even though you may use another term in your work.

Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, write a "0" (zero) before the statement. If you have had this feeling, indicate how often you feel it by writing the number (from 1 to 6) that best describes how frequently you feel that way.

How Often:	0	1	2	3	4	5	6
	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day

I. Depersonalization

5. I feel I treat some students as if they were impersonal objects.

II. Personal Accomplishment

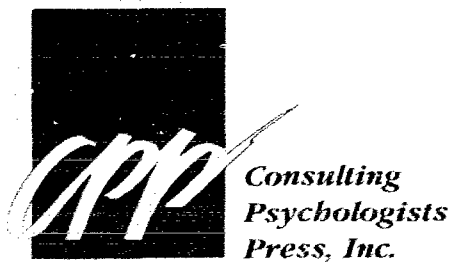
9. I feel I'm positively influencing other people's lives through my work.

III. Emotional Exhaustion

20. I feel like I'm at the end of my rope.

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Degree: Master of Business Administration
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Abstract

After a review of models, definitions and empirical studies of burnout, it was found that there were conflicting findings surrounding a social support buffering effect between job-induced tension and burnout. The present study proposed that a three-way interaction between social support, locus of control and job-induced tension may be an alternative way in which to explain the effects of social support on burnout. The Maslach Burnout Inventory was used to measure burnout. Other scales included in the questionnaire measured social support, locus of control, self-esteem, job-induced tension and demographic variables. One-thousand questionnaires were mailed to randomly selected subjects from a population of approximately 28,000 active members of a large public service employees union. Two hundred and four usable questionnaires were returned, yielding a response rate of 20.8 percent. Regression analysis was performed, and no two-way, or buffering interactions, were significant. The three-way interaction between social support, work locus of control and job-induced tension was also not significant. When the full regression model with demographics was used, main effects for job-induced tension, social self-esteem, work locus of control and organizational tenure contributed significantly to the overall R^2 of 0.574 ($F = 122.01$ ($df = 17, 154$), $p < .0001$). Social support did not contribute significantly to the overall R^2 , although it did account for 2.49 percent of the variance. Job-induced tension accounted for the largest amount of the variance, 41.57 percent ($p < .0001$). The present study's findings are consistent with previous research that did not verify a social support buffering hypothesis. Durbin-Watson statistics suggested that autocorrelations amongst regression residuals were not significant. Limitations of the study were discussed. It was suggested that future research should focus on replicating a recent revision to Leiter's model of burnout and designing interventions that either prevent or reduce the amount of burnout in public service settings.

Acknowledgments

iv

I would like to thank Stephen Havlovic for his patience and help through the many thick revisions that regularly appeared in his mailbox.

Larry Pinfield provided many useful suggestions and financial support. Many thanks.

Thanks also to Eleanor MacDonald for her help in envelope stuffing.

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Chapter 1: Introduction

The term 'burnout' has been given many definitions and has been the subject of many models over the years. The definitions range from psychoanalytic to comprehensive. However, there is a general consensus that burnout has attitudinal, emotional, and physical components (Farber, 1983). Burnout is also commonly viewed as either a process or as a continuum. At least some of the ambiguity in the definition is due to these different conceptualizations of burnout. Chapter 2 will discuss the various models and definitions that attempt to address this problem.

Burnout is a common term for describing a consequence of working in career areas with a large amount of contact with people. The increasing concern with the burnout phenomenon is likely a function of:

...(a) characteristics of helping professions, (b) [the] growing importance of human service delivery, (c) characteristics of public sector organizations which may further place a burden on service deliverers and administrators, and (d) physical and psychological effects of stress for all workers (Perlman & Hartman, 1982, p. 283).

A better understanding of burnout and its causes would hopefully aid workers, administrators, the organizations they work for, and the people they serve.

Various empirical studies on burnout will be discussed in Chapter 3. First, studies related to the validation of the definitions and models of burnout will be examined. Next, work-related, personality and extraorganizational correlates of burnout will be examined. The results from the validation and correlational studies will also be summarized in table form.

Coping strategies, as addressed in Chapter 4, may be one way of clarifying why burnout occurs. For example, an individual's coping resources, such as supervisory and coworker social support, may moderate the relationship between stress and burnout. Also, does the amount of social support that an individual receives from

superiors and coworkers have an effect on the degree of experienced burnout? If so, does social support only lower burnout on highly stressful jobs? Do factors associated with social support, such as self-esteem and locus of control affect the degree of experienced burnout?

The purpose of the present study (Chapter 5 and 6) is to investigate the combined effects of such organizational and individual variables as social support, self-esteem, and locus of control on burnout in different types of organizations. This approach will be useful in determining if the current models are adequate, or if a new conceptualization of burnout is required.

Chapter 7 will report the results of the study. Last, Chapter 8 will discuss the implications of the results, examine limitations of the study, and suggest directions for future research.

Prior to discussing the models and definitions of burnout, it is important to distinguish the burnout phenomenon from other workplace concerns such as job stress and turnover. For example, burnout is related to stress. However, it is still possible to distinguish between the two phenomena. For example, burnout seems especially associated with the workplace, and seems to occur in situations where the stressors of the task or work role become internalized (Ianni & Ianni-Reuss, 1983). Burnout may be "...caused by prolonged exposure to stress and frustration, [and] all of the various personal and environmental factors that generate stress" (Carroll & White, 1982, p. 45).

Organizational stress can occur when a job exceeds an individual's capabilities, or the job does not provide adequate tools for task completion (Shinn, 1982). Generally, the work environment of the individual is the source of many stressors. Using an interactional or transactional view of stress, people interact with their environments and react to the stressors. This interaction produces varying amounts of

perceived or experienced stress. Depending on the effectiveness of an individual's response to stress (i.e., coping) the individual either avoids burnout (e.g., effective coping) or progresses into the burnout (e.g., ineffective coping) (Burke, 1987).

Stress can develop from three different sources. First, stressors may originate from within the individual (e.g., anxiety levels and aggressiveness). It is unclear how these individual differences are affected by the individual's environment. Second, stressors may arise from the sociocultural environment, for example, change produces stress as individuals attempt to adapt. Third, stressors may arise from the interaction between an individual and an organization; for example, an inappropriate fit (Ianni & Reuss-Ianni, 1983). Burnout may be the result of ineffective coping strategies for stress. Stress may also affect such variables as job satisfaction and job performance (Sullivan & Bhagat, 1992).

Burnout should also be distinguished from turnover. Although burnout may lead to turnover (i.e., burned out employees exit the organization), burned out employees may also remain on the job. Turnover may also be attributed to other factors related to the organization, its employees, or its external environment (Cherniss, 1980a).

Chapter 2: Models and Definitions of Burnout

The various models and definitions of burnout will be examined in a chronological overview. Strengths and weaknesses of the models will also be discussed. Validation studies will be discussed in Chapter 3.

2.1 Freudenberger's Definition

Freudenberger (1974) is often given credit for first describing burnout from an organizational perspective. Freudenberger (1974) started by using a dictionary definition of burnout: "...to fail, wear out, or become exhausted by making excessive demands on energy, strength, or resources" (p. 159). Next, Freudenberger (1974) described various physical symptoms (e.g., exhaustion, fatigue, headaches, gastrointestinal disturbances, sleeplessness, and shortness of breath) and behavioural signs (e.g., volatile temper, emotional extremes, paranoia, overconfidence, cynicism, depression) that may be observed during burnout.

2.2 Cherniss

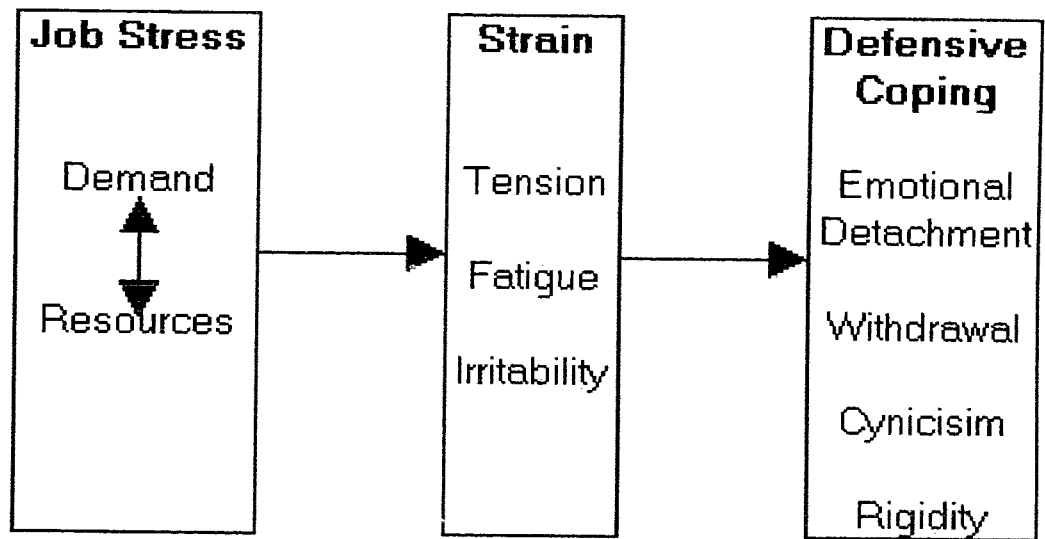
2.2.1 Cherniss' Definition

Cherniss (1980b) defines burnout from a motivational perspective:

...burnout is defined as psychological withdrawal from work in response to excessive stress or dissatisfaction ...One no longer lives to work but works only to live. In other words, the term refers to the loss of enthusiasm, excitement, and a sense of mission in one's work (p. 16).

Cherniss (1980b) suggested that this definition and the definitions of other researchers (e.g., Freudenberger, 1974) implied that burnout may be a transactional process consisting of three stages (See Figure 1).

Figure 1: Transactional Definition of Burnout



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(Cherniss, 1980b, p. 18)

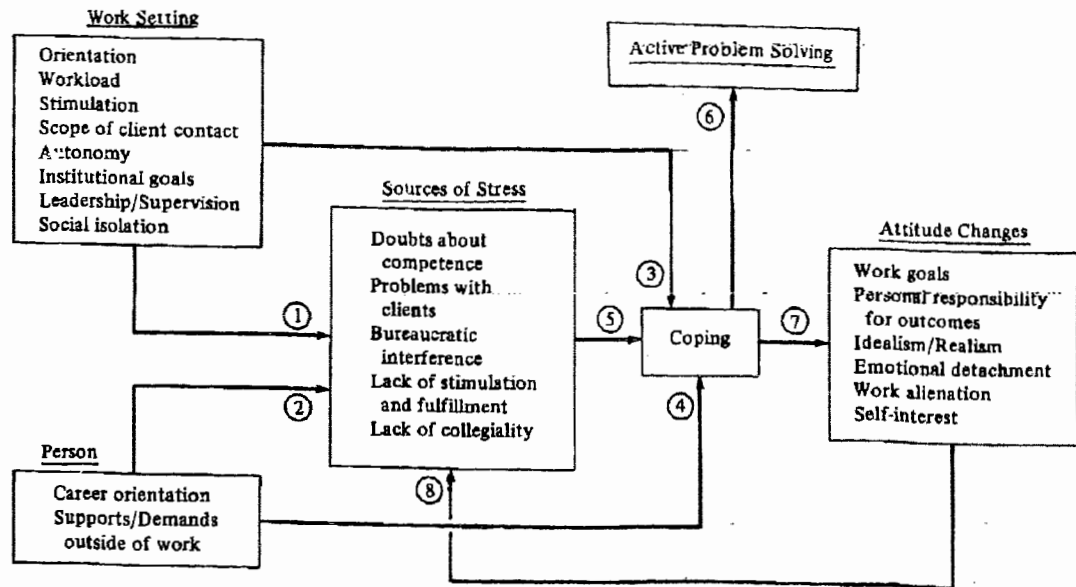
The first stage is characterized by stress, or an imbalance between resources and demands. An immediate short-term emotional response (strain) defines the second stage, and may include the symptoms of anxiety, tension, and exhaustion. The third stage, coping, is characterized by changes in attitude and behaviour (e.g., detachment). Cherniss (1980b) asserted that this new way of defining burnout encompasses the ideas presented in previous definitions of burnout, and provided a structure for researching causes of and interventions for burnout.

2.2.2 Cherniss' Process Model of Burnout

Cherniss' (1980a) Process Model of Burnout attempted to depict how the structures, experiences and forces in burnout are related to each other (See Figure 2). The model centres around sources of stress, and the relationships of the work setting, the individual, coping strategies and attitude changes to stress. Cherniss (1980a) suggests that stress may originate with the individual (e.g., doubts about self-efficacy, and lack of stimulation and fulfillment), the organization (e.g., bureaucratic interference), and the environment (e.g., problems with clients, and lack of collegiality). The work setting and the person contribute to individual differences in the sources of stress. Depending on the coping strategy, there may be either negative internal attitude changes or active problem solving. Negative internal attitude changes produce the attitudes suggested by Cherniss' (1980b) definition of burnout. Active problem solving is an alternate coping strategy and is less likely to produce burnout.

Cherniss (1980a) warned that the process model does not account for: 1) social influence processes, 2) the individual's skills, experience and knowledge, 3) individual differences in coping strategies, and 4) cultural differences. However, Cherniss (1980a) believed that the model was a starting point for understanding the process of burnout.

Figure 2: Cherniss Process Model of Burnout



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(Cherniss, 1980a, p. 208).

2.3 Maslach and Jackson's Definition

Maslach and Jackson (1981b) took the perspective that burnout is a syndrome of both emotional exhaustion and cynicism that occurs most frequently in work with high human contact. Maslach and Jackson (1981b) suggested that there were three aspects to the burnout syndrome. First, those experiencing burnout would have increased perceptions of emotional exhaustion. Second, people experiencing burnout would develop a negative, cynical attitude about their clients. Third, burnout often increases the tendency to evaluate one's work and clients negatively (Maslach, 1981b; Pines, Aronson, & Kafry, 1981; Maslach, 1982). These aspects result in an overall definition that burnout is the "...syndrome of physical and emotional exhaustion involving the development of negative self concept, negative job attitudes and loss of concern and feeling for clients" (Maslach & Jackson, 1981b, p. 99).

2.4 The Ecological Model

Carroll and White (1982) assert that in addition to the work environment, other environmental factors influence the degree of burnout experienced by an individual. For example, personal variables (e.g., emotional conflicts) may influence the individual's interaction with environmental variables (e.g., work or home environments). This dynamic interaction between individual variables and the various levels of the environment generates burnout. That is "...burnout occurs whenever a person with inadequate stress management and need-gratifying skills must work in a stressful and need frustrating work environment" (Carroll & White, 1982, p. 42).

The ecological model states that the degree of burnout experienced by an individual is the extent to which the environment and the individual are **not** in harmony. That is, the greater the harmony or congruence between individuals and their environment, the less likely that they will experience burnout. Factors that

contribute to burnout are boundary issues (e.g., the boundaries are unclear or unstated) between the person and their environment, task or role and person mismatch, inadequate resources within the environment, and inadequate interfaces between the boundaries within the model. The person or individual contributors to burnout, according to the ecological model, include any factors that may influence an individual's work performance. These individual factors may include physical and mental health, education, coping skills, frustration tolerance and needs.

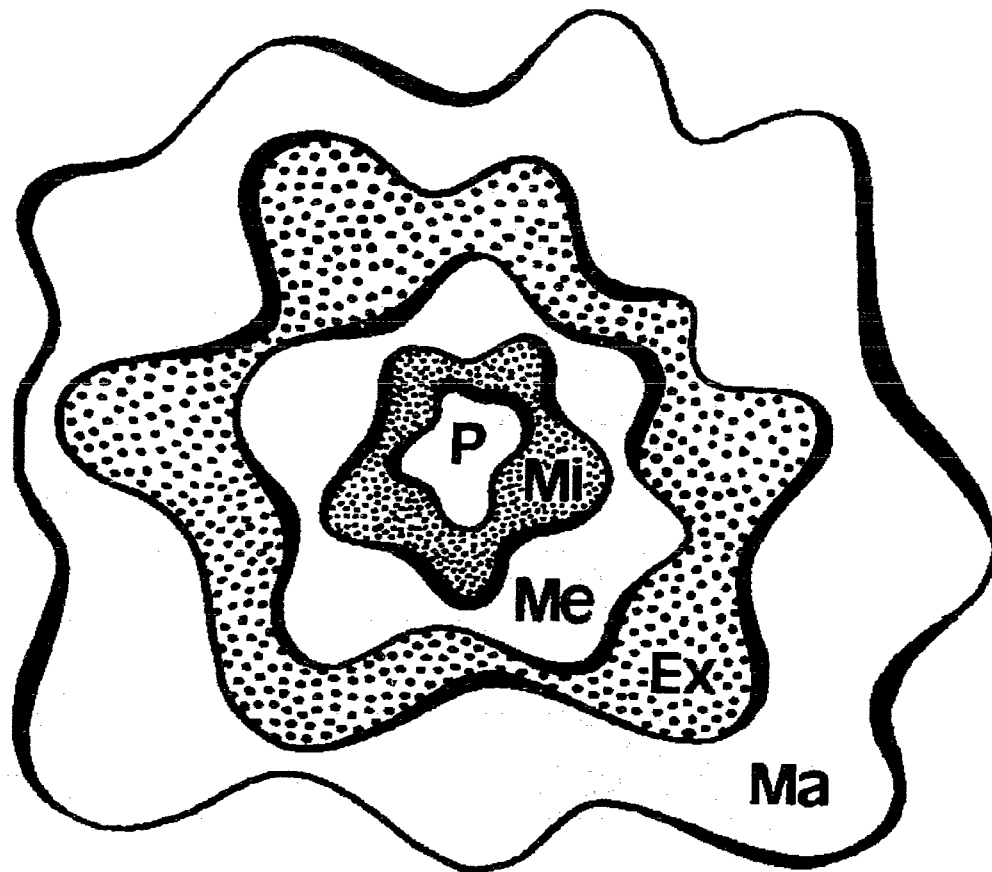
The environment, as described by the ecological model has four elements (See Figure 3). First, the microsystem is the smallest system in which individuals do most of their work (e.g., the home or office). Second, the mesosystem encompasses all of the microsystems into a whole (e.g., all of the offices and departments). Third, the exosystem includes factors that directly influence the mesosystem, such as the board of directors, legislative bodies, or regulatory agencies. Last, the macrosystem includes less direct, more broad-ranging influences such as inflation, and unemployment (Carroll & White, 1982).

This model accounts for the interactive aspect of the environment and the individual, and perhaps explains why burnout is experienced by different people in different ways. This model also suggests that interventions to reduce or eliminate burnout may be initiated at either the individual or the environmental level. However, this model fails to account for such aspects as coping, and offers little insight into how burnout occurs. The question, is burnout a process or a continuum?, is not addressed.

2.5 Perceptual-Feedback Paradigm

Perlman and Hartman (1982) performed a content analysis of previous definitions of burnout and synthesized them into one definition. It was concluded from this process that burnout is "...a response to chronic emotional stress with three

Figure 3: The Ecological Model of Burnout



P = Person

Mi = Microsystem -The smallest social unit of organized work

Me = Mesosystem -The larger complex of smaller work units that comprise the organization

Ex = Exosystem -Non-work ecosystems that directly impact on the worker and their organization (e.g., community, government)

Ma = Macrosystem -The larger cultural and world-wide complex

All elements interact in varying degrees. The consequences of all these interactions are experienced throughout the system and are reciprocal in nature.

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(Carroll & White, 1982, p. 47).

components: (a) emotional and/or physical exhaustion, (b) lowered job productivity, and (c) overdepersonalization" (Perlman & Hartman, 1982, p. 293). Factors such as negative self-concept, cynicism, and negative attitudes towards clientele were suggested to be correlates of burnout, but were not part of the definition. Despite this finding contradicting Maslach and Jackson's (1981b) definition, most researchers continue to use Maslach and Jackson's (1981b) definition of burnout (e.g., Ogus, 1992; Rountree, 1984).

Perlman and Hartman (1982) also develop a model (see Figure 4) that includes both individual and organizational variables that may affect burnout. The dimensions of burnout in the model reflect the symptoms of stress:

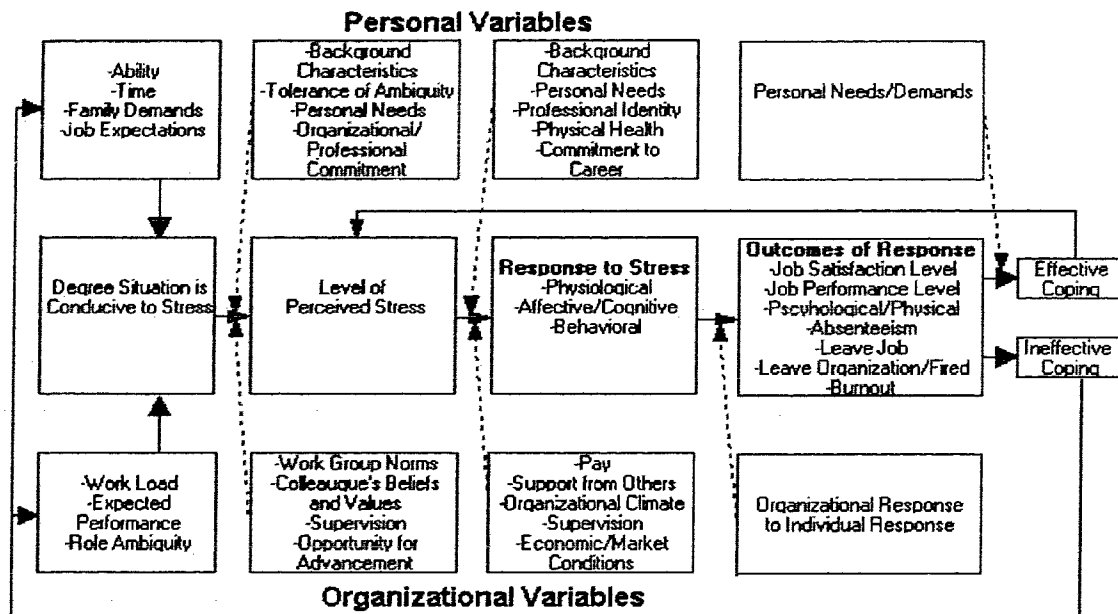
...(a) physiological, focusing on physical symptoms (physical exhaustion), (b) affective-cognitive, focusing on attitudes and feelings (emotional exhaustion, overdepersonalization), (c) behavioral, focusing on symptomatic behaviors (overdepersonalization, lowered job productivity) (Perlman & Hartman, 1982, p. 296).

The model also has a cognitive/perceptual focus. In addition, the model suggests that an individual's environment and personal variables are at its core (Perlman & Hartman, 1982).

There are four overall stages within this paradigm. The first stage outlines the degree to which the situation is conducive to stress, and usually occurs from an inappropriate fit between the individual and the organization. Examples of situations conducive to stress are inadequate knowledge, skills and abilities to meet organizational demands.

The organizational demands may be real or perceived. Perceived stress is involved in stage two, and possible responses to stress are outlined in stage three. Burnout is the culmination of inadequate coping with chronic emotional stress which is included in stage four. Perlman and Hartman (1982) suggest that the organizational and individual variables would have an impact on:

Figure 4: A Perceptual-Feedback Stress Paradigm



(Perlman & Hartman, 1982, p. 297).

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...(a) perceptions of the organization and role by an individual, (b) response of the individual to these perceptions, and (c) response of the organization to symptoms displayed by an individual (in stage three) which would then lead to (d) outcome variables listed in stage 4. (p. 298)

It is possible that individuals move through the model on a continuous flow basis. For example, low perceived stress will lead to low response, low outcomes, and low use of coping.

2.6 An Expanded Model of Burnout

Meier (1983) recognized that previous models of burnout lacked both solid theoretical background and empirical support. It was suggested that a new model of burnout could be based on Bandura's work (e.g., Bandura, 1977; Bandura & Adams, 1977).

Another element of Meier's (1983) model is contextual processing, or information processing within contexts. The manner in which expectations are learned and changed is determined by contextual processing. Meier's (1983) model takes an interactionist position (i.e., burnout is caused by the interaction of the internal and external contexts), whereas Maslach and Jackson's (1981b) definition placed more blame on the organization. Thus, Maslach and Jackson's (1981b) definition suggests that for some occupations the individual is powerless to avoid burnout.

It would seem that Maslach and Jackson's (1981b) definition of burnout (a function of emotional exhaustion, depersonalization and personal accomplishment) covers the same conceptual bases as Meier. However, Meier has supported his definition with research by Bandura. This counters the criticism that "...little effort has been expended to draw on more established literature to explain burnout" (Meier, 1983, p. 899).

Meier (1983) thus defines burnout as:

...a state resulting from repeated work experiences in which individuals possess: (a) low expectations regarding the presence of positive reinforcement and high expectations regarding the presence of punishment in the work environment, (b) low expectations regarding ways of controlling reinforcers that are present, or (c) low expectations for personal competence in performing behaviors necessary to control the reinforcement. Individuals who possess expectations at these low levels will often experience unpleasant feelings, such as anxiety and fear (c.f. Bandura & Adams, 1977), and behave in unproductive ways, such as avoiding work and lacking persistence (Meier, 1983, pp. 900-901).

Thus, according to Meier's (1983) model, an individual must deal with reinforcement expectations, outcome expectations, efficacy expectations and contextual processing. Reinforcement expectations are one's expectations about whether organizational outcomes will satisfy the individual's goals. Outcome expectations outline what behaviours are required to yield those outcomes. The individual's perceptions of competence in executing the productive behaviour comprise efficacy expectations. Contextual processing implies that people actively process the information from environmental events in different ways, thus placing more emphasis on individual differences (e.g., coping styles) in this model than in others.

This model suggests that reinforcement, outcome and efficacy expectations directly affect an individual's subjective experience of burnout. Meier (1982) suggests that this model could be tested by using a self-report measure that would permit correlation between affective and behavioural measures of burnout. However, Meier (1982) does not suggest explanations or tests for studying the relationships among the four components.

2.7 Social Competence Model of Burnout

Harrison (1983) suggests that burnout results from ineffective efforts to help others (e.g., clients). That is, burnout is a function of a person's perceived competence. This concept is very similar to Meier's (1982) concept of self-efficacy (Bandura, 1977), although Harrison (1983) asserts that perceived competence (or self-

efficacy) is only important in terms of helping behaviour. The applicability of Harrison's model is therefore likely restricted to the helping professions (e.g., nursing, social work, and police work). An individual experiences burnout if one has low effectiveness in help behaviours, creating a negative feedback loop. Harrison (1983) accounts for individual differences by suggesting that unsuccessful helping behaviours will cause burnout, while successful helping behaviours will create a sense of competence. Environmental variables will cause an individual to be more vulnerable to burnout if they have unsuccessful helping behaviours, and will enhance or detract from an individual's sense of competence if they have successful helping behaviours.

2.8 Phase Model of Burnout

The following phase model of burnout has received much attention in the literature. Golembiewski (1982) suggested that burnout should be thought of as a series of stages or phases (See Figure 5). The concept of a phase model of burnout contrasts with previous all-or-none concepts of burnout (Golembiewski et al., 1986). Golembiewski (1982) stated that by: "...dichotomizing the distribution of scores around the mean for each MBI dimension, eight phases of burnout can be distinguished, given the assumption that Depersonalization represents early signs of burnout while Emotional Exhaustion characterizes advanced cases (p. 251).

Fluctuations in one's sense of personal accomplishment usually follow depersonalization (Golembiewski et al., 1983). The phase concept permits this model to have specificity beyond the total MBI score, for example, differentiating between people in neighbouring phases (Golembiewski et al., 1983).

The general progression from depersonalization to a decreased sense of personal accomplishment to emotional exhaustion may be related to job-induced stress and coping. Job stress is the imbalance between an individual's resources and the job's demands (Golembiewski et al., 1983). Job stress may originate from two sources: too much stimulation and challenge produces overload, or too little

Figure 5: Phase Model of Burnout

Phase----->	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>V</i>	<i>VI</i>	<i>VII</i>	<i>VIII</i>
Depersonalization	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi
Personal Accomplishment (a reversed scale)	Lo	Lo	Hi	Hi	Lo	Lo	Hi	Hi
Emotional Exhaustion	Lo	Lo	Lo	Lo	Hi	Hi	Hi	Hi

----->

-where the Lo-Hi aspects of Depersonalization, Personal Accomplishment, and Emotional Exhaustion are the result of dichotomizing the distribution of scores around the mean for each of these MBI dimensions (Golembiewski, 1982, p. 250).

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stimulation and challenge produces lethargy (Golembiewski et al., 1983). Irritability and fatigue may be produced by job-derived strain. Job stress and job-derived strain may cause the individual to engage in counterproductive coping. This may have such consequences as depersonalization, the first step in the phase model of burnout (Golembiewski et al., 1983).

There are several conceptual and methodological problems with the phase model. First, there may be different forms of burnout: one for an individual's personal life, and one for an individual's work life. Second, it is unknown if the 'high' end of the burnout phases is high enough, for example, would some high stress professions such as air traffic controllers experience a more extreme endpoint of the burnout process than other professions? Third, longitudinal research is required to examine the causes of switching between phases, and entry as well as exit determinants within each phase. In addition, determining common pathways through the phases requires examination (Golembiewski et al., 1986). Fourth, Burke (1989) suggested that the intercorrelations between the subscales of the MBI (emotional exhaustion, personal accomplishment, and depersonalization) may be problematic; that is, the scales are conceptually distinct, but are they conceptually distinct enough to discriminate between the individual phases of burnout? For example, Burke (1989) questioned the difference between a total score on the MBI and the corresponding phase within the phase model.

Wolpin, Burke and Greenglass (1990) outlined some concerns relevant to the phase model of burnout. For example, the phase model uses the mean of each subscale of the MBI to create high and low subgroupings, rather than the more common median split. Wolpin et al. (1990) suggest that the use of a median split as an alternative to the mean would make little difference in findings since the differences between the mean and median on each subscale were not statistically significant. It was also suggested

that if longitudinal designs or comparisons between two different samples are used, the mean would be preferable in order to create norms or benchmarks for the longitudinal and comparisons respectively. Golembiewski et al. (1986) suggested that burnout progressed in the order: depersonalization --- > lack of personal accomplishment --- > emotional exhaustion. This order forms the basis of the phase model. On the other hand, Maslach (1982a), Leiter (1989) and Leiter and Maslach (1988) suggest that burnout progresses from emotional exhaustion --- > depersonalization --- > lack of personal accomplishment. However, Wolpin et al. (1990) concede that it is unclear which order of the MBI subscales more accurately depicts the actual progression of burnout.

A phase model of burnout has several implications. First, a phase model of burnout suggests that the different phases may reflect different causes of burnout. Second, a phase model may allow interventions that target an individual's particular phase of burnout, and the characteristics associated with a specific phase. Such a model would also allow the implementation of preventative or maintenance interventions for individuals in the early stages of burnout.

Third, the progressive phases of burnout imply that individuals in advanced stages of burnout may be helped by fixing the initial cause of the earlier stages of burnout. However, it is more likely that individuals in the advanced phases of burnout would require multifaceted interventions focussing on several areas that may contribute to burnout such as individual differences and the work environment (Golembiewski, 1982).

Fourth, not all cases must follow a single pathway or proceed through all phases of burnout (Golembiewski et al., 1986; Golembiewski et al., 1989). Skipping phases may reflect intense or acute changes within an individual's life (e.g., death of a significant other). A more methodical progression between phases may be the result of

chronic organizational or environmental conditions. It should be noted that progression within the phase model may be in either direction, that is, towards phase VIII or towards phase I (Golembiewski & Munzenrider, 1986).

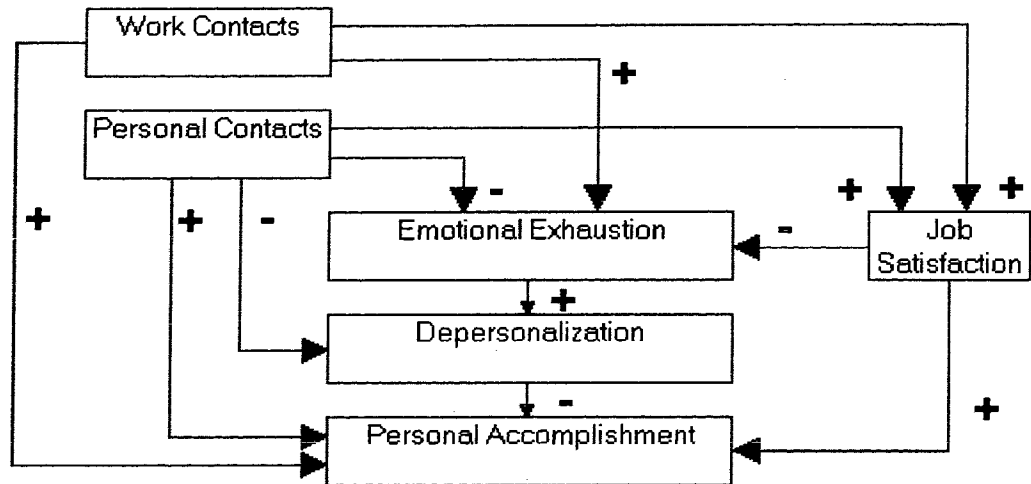
Fifth, individuals may be categorized in terms of the severity of their burnout (Golembiewski, 1982). However, there may be a tendency to suggest that individuals in phase VIII (the advanced stage of burnout) are in great distress. There is no indication that individuals share the same experience of burnout in this advanced phase, and no method of translating membership in this phase to the experience of great distress (Burke, 1989).

Sixth, the phases permit the identification of individual differences that may be lost in mid-range scores on the MBI. Last, the phase model attempts to explain the balance of eustress (stress that motivates or energizes people) and distress (stress that strains individuals) regardless of the stressors and coping skills of the individual (Golembiewski et al., 1986).

2.9 Leiter's Model of Burnout

Leiter (1988) proposes a model of burnout with four components (See Figure 6a). First, it is hypothesized that emotional exhaustion only leads to a feeling of reduced personal accomplishment if depersonalization acts as a mediating variable. Second, burnout will be inversely related to job satisfaction, that is, the more "burned out" individuals are, the lower their ratings of job satisfaction. This indicates a direct relationship between job satisfaction and emotional exhaustion: the less satisfied individuals are with their jobs, the more apt that they will be emotionally exhausted. As indicated by the first assumption of the model, dissatisfied individuals will experience depersonalization only if they experience emotional exhaustion. Decreased

Figure 6a: Leiter's Model of Burnout (Leiter, 1988, p. 116)



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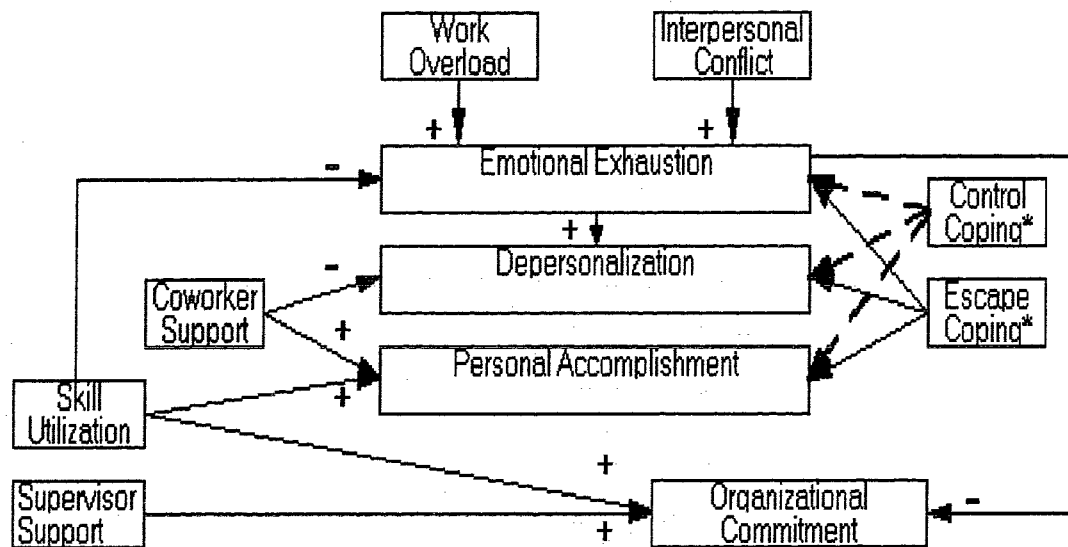
perceptions of personal accomplishment will likely be indicated by all dissatisfied workers. Third, it is suggested that individuals with many work contacts and few informal, social contacts will experience more emotional exhaustion than individuals with few work contacts and many informal, social contacts. Fourth, those with high job satisfaction should be positively associated with work and social contacts.

Leiter (1991) then expanded the model by hypothesizing that control coping would have an inverse relationship with burnout and that escapist coping would be positively correlated with burnout (See Figure 6b).

It is suggested that Leiter's model is unable to determine if burnout is a process or a continuum (Golembiewski, 1989). In addition, the association with the three MBI subscales is different for both Leiter (1991) and Golembiewski (1989). "Leiter's basic linkage -- that high emotional exhaustion will lead to performance problems only when mediated by high depersonalization -- stands in marked contrast to the progressive virulence assumed by the phases. Both cannot be correct" (Golembiewski, 1989, p. 9). As will be shown in Chapter 3, it seems that Golembiewski's associations seem to be supported by the literature (Golembiewski, 1989; Burke, 1989). However, recent research on Leiter's proposed linkage suggests that Leiter may indeed be correct (Leiter & Maslach, 1988; Lee & Ashforth, 1993a, 1993b).

These are the major models and definitions of burnout. They present a varied view of burnout, ranging from the precise to the global, and from the psychoanalytic to the social psychological (Maslach, 1982b). Only one model, Golembiewski's phase model, has generated extensive research in the literature. This model suggests that burnout would occur on a continuum, and would not be an "on-off" phenomenon. Other models, such as Leiter's, could become very complex as more variables and

Figure 6b: Leiter's Model of Burnout with Coping Strategies (Leiter, 1991, p. 137)



*NOTE: Control Coping has a '+' relationship with Personal Accomplishment, a '-' relationship with Depersonalization, and a '-' relationship with Emotional Exhaustion. Escape Coping has a '-' relationship with Personal Accomplishment, a '+' relationship with Depersonalization, and a '+' relationship with Emotional Exhaustion.

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correlates are added to the model. The phase model, on the other hand, assumes the three areas measured by the MBI subscales (emotional exhaustion, depersonalization, and personal accomplishment) to be the key to deciphering the burnout continuum.

The phase model of burnout implies that all individuals within an organization are experiencing a minimum level of burnout, as there is no point in the phase model where an individual is not experiencing at least some burnout. However, the instrument used to assess burnout in the phase model, the MBI, has a zero-point, although it is not clear at what point an individual begins experiencing burnout.

All the models reviewed suffer from the limitation that they cannot specifically differentiate between a burned-out individual from a nonburned-out individual. That is, the models seem to be unable to determine the point for burnout demarcation.

Chapter 3: Empirical Studies

Empirical studies have been performed to evaluate the models and definitions of burnout, and to evaluate the relationships between various variables and burnout.

3.1 Tests of Models and Definitions

An overview of the studies evaluating the models and definitions of burnout is presented at the end of the chapter (see Table 1).

3.1.1 Freudenberger

Freudenberger (1974) fails to provide empirical evidence for the definition of burnout or its relationship with the symptoms derived from his case studies.

Freudenberger's model is based on a clinical or psychoanalytic approach that perhaps places too much emphasis on case studies (Farber, 1982).

3.1.2 Cherniss Process Model of Burnout

Burke, Shearer and Deszca (1984) attempted to validate the Cherniss (1980a) Process Model among individuals in police work. The research was longitudinal in an attempt to capture the process concept of the Process Model. The Maslach Burnout Inventory (MBI) (1981b) was used as a measure of burnout (the inventory measures emotional exhaustion, depersonalization, and lack of personal accomplishments). Additional measures had to be created or adapted to test the model, since no previous measures for this specific model existed, and some examples follow. An individual's career orientation (self-investors, social activists, careerists, and artisans) was measured. The degree of type-A behaviour exhibited by the subjects was measured using a 14-item scale (Bortner, 1969; Bortner & Rosenman, 1967). Burke et al. (1984)

also measured the: 1) Extra-work demands using a 56-item scale; 2) sources of support (e.g., sources of support outside the work environment); 3) sources of stress such as doubts about competence, problems with clients, bureaucratic interference, lack of stimulation and fulfillment, and lack of collegiality; 4) individual's negative attitude change such as reduced work goals, reduced personal responsibility for outcomes, decreased idealism, emotional detachment, work alienation, and greater self interest; 5) job attitudes (e.g., job satisfaction, and intention to turnover) of the individual; 6) individual well-being and health (e.g., psychosomatic symptoms, negative feeling states, and physical health and lifestyle); and 7) impact of job on home and family life.

Burke et al. (1984) do not report the methodology used in completing their study. However, the authors report that work setting and stress antecedents were significantly correlated with measures of negative attitude change and the MBI. Burnout was also found to be associated with negative personal and organizational outcomes. Burke et al. (1984) interpret these results as supportive of the Cherniss Process Model.

Wolpin, Burke, & Greenglass (1991) modified the Cherniss Process Model by including job satisfaction. The modified model was then used in a longitudinal study to determine the relationship between job satisfaction and burnout. It was found that burnout appears to *cause* decreased job satisfaction. It was not stated whether or not the results were consistent with the Cherniss Process model. Rather, Wolpin et al. (1991) suggested that a more complete model (e.g., that included more predictors and outcomes of burnout) than the one proposed by Cherniss should be developed.

3.1.3 Maslach and Jackson's Definition

Maslach and Jackson's definition of burnout has become the basis for the Maslach Burnout Inventory (MBI) (For sample items, please see Appendix A). The

MBI was constructed to test some hypothesized aspects of burnout (Maslach & Jackson, 1981b). The three burnout factors (i.e., depersonalization, personal accomplishment, and emotional exhaustions) were obtained by factor analyzing the 47-item questionnaire. Ten factors emerged and these three accounted for approximately three-fifths of the variance in the sample.

Many validation studies of the MBI have been performed. For example, Iwanicki and Schwab (1981), Gold (1984), Powers and Gose (1986), and Green and Walkey (1988) have found general support of the validity of the MBI and its subscales. Gold (1984) also found that either the frequency or intensity scales are sufficient in identifying burnout. Thus, one scale would likely be sufficient for use in field research rather than both. Item 11 ("I worry that this job is hardening me emotionally") although representing the depersonalization subscale (Maslach & Jackson, 1981a, p. 2), loads on emotional exhaustion and perhaps should be scored on that scale instead (Iwanicki & Schwab, 1981; Gold, 1984; Powers & Gose, 1986).

The MBI has become the standard measure for burnout (Appendix A). However, there has recently been some question of the accuracy of the MBI's factor structure (e.g., Koeske & Koeske, 1989; Byrne, 1991; Walkey & Green, 1992; Evans & Fischer, 1993). The MBI is also the basis for the phase model of burnout, as the dichotomization of the MBI's subscales permit the division of burnout into eight phases. Each dimension on the inventory is rated on frequency (7 point scale) and intensity (7 point scale). The original 47 items were administered to a sample of 605 people from various health and service jobs. Through factor analysis, the number of items was reduced to 25, with three subscales; emotional exhaustion (9 items), depersonalization (5 items), and personal accomplishment (8 items) (Maslach & Jackson, 1981).

Various studies have further examined the three-factor structure of the MBI (e.g., Koeske & Koeske, 1989; Byrne, 1991; Walkey & Green, 1992; Evans & Fischer, 1993). Koeske and Koeske (1989) proposed that emotional exhaustion was essentially burnout, and that depersonalization and personal accomplishment were related to, but not part of burnout. Although Koeske and Koeske (1989) confirmed Maslach and Jackson's (1981) three factor structure, they suggest that the "MBI subscales should be seen as three related constructs that function in different ways with a complex theoretical framework" (p. 141).

Byrne (1991) also confirmed a three-factor model. However, there was an improvement in the 'fit' of the model if some items measuring emotional exhaustion (numbers 2, 16, and 20) and personal accomplishment (number 12) were deleted. In contrast, Walkey and Green (1992) found two replicable factors. One factor, termed the 'core of burnout', combined the emotional exhaustion and depersonalization subscales. The other factor was the personal accomplishment subscale. Last, Evans and Fischer (1993) found that depersonalization was a valid subscale when used with public-service type samples, but was not a valid part of the MBI when the scale was used with private-sector samples. It should be noted that these studies have **not** used similar factor analysis methods (e.g., confirmatory versus exploratory). Despite the debate over the factor structure of the MBI, the MBI remains the most extensively documented burnout instrument (Walkey & Green, 1992).

In addition to the MBI's individual sub-scale scores, an additive approach may be considered (Golembiewski & Munzenrider, 1981). For example, a total MBI score covaries significantly with 22 scales such as the Job Descriptive Index, the Job Diagnostic Survey, and the Job Tension scale. On average, the MBI accounts for 13% of the variance in these scales, and accounts for between 13% and 25% in at least half of the covariants (Golembiewski & Munzenrider, 1981).

3.1.4 Untested Models

No specific tests for the Ecological Model, the Perceptual-Feedback Paradigm, the Expanded Model of Burnout, or the Social Competence Model of Burnout were found.

3.1.5 Phase Model of Burnout

The eight-phase model of burnout was tested against 22 variables in the MBI, Job Descriptive Index, Job Diagnostic Survey, individual characteristics (Golembiewski et al., 1983; Golembiewski, & Munzenrider, 1983), and Job Involvement (Golembiewski, & Munzenrider, 1984). It was hypothesized that scores on these variables should generally decrease as an individual moves from phase 1 to phase 8 of the model (although the individual characteristics variable of job tension should increase). All but two of the variables showed overall significance, providing general support for the phase model. However, it is difficult to distinguish between neighbouring phases.

The distribution of burnout by phases in both business and government organizations was studied by Golembiewski et al. (1986). It was found that between 20 and 60 percent of individuals within the studied organizations were in the advanced stages of burnout (phases VI through VIII). The intermediate phases (phases IV and V) contained between 11 and 18 percent of individuals. Finally, the distribution in the least advanced stages of burnout (phases I through III) ranged between 29 and 63 percent. It was also found that individuals in the extremes (i.e., advanced and least advanced phases) of burnout tended to remain there over time.

The distribution of burnout was slightly skewed towards the later stages of burnout in Golembiewski et al.'s (1986) study. This may be a function of splitting scores on the MBI subscales into high-low dichotomies. This distribution may also be

the result of the phase model's lack of a zero point, or a point at which an individual is not experiencing burnout.

Golembiewski et al. (1989) attempted to study phase progression, but found that individuals in the early or advanced phases of burnout were fairly stable in their phase assignment. Even though individuals in early phases may experience upward phase changes, they tend to be able to rebound to their normal phase assignment after a phase change. This may be attributable to the individual's coping strategy. Individuals in the advanced stages of burnout tended to remain there, and this presents challenges for designing effective interventions. The individuals in the middle phases of burnout, phase IV and V, showed the greatest instability in their subsequent phase assignments, even over short intervals. It has been suggested that while burnout may be conceived as a continuum, the ability to classify people into phases and track inter-phase transitions may be an artifact of the way in which the phase model was designed.

A problem involving the validation of the phase model is that some of the validation research has collapsed the number of phases to three (e.g., Rountree, 1984). For example, Phases I to III are the low end, Phase IV and V are the mid-range, and Phases VI to VIII are the high end of burnout. There was no statistical or theoretical reasoning given for the collapsing of the number of burnout phases. Rather, the collapsing was done in order to reduce phase entry and transition problems inherent in the phase model (Rountree, 1984; Burke, 1989). That is, differentiating a specific phase of burnout from its neighbouring phases may be difficult due to the narrow range of burnout explained by each phase. Reducing the number of neighbouring phases may increase the amount of differentiation possible between a reduced number of phases. A possible research question would be to determine if the full eight phases of the model are required.

Gryskiewicz and Buttner (1992) attempted to test the robustness of the phase model of burnout. Respondents' scores on the subscales were dichotomized according to the high-low pattern suggested by the phase model. The resulting high-low scores on each subscale were then arranged according to the phase model of burnout.

Gryskiewicz and Buttner (1992) concluded that the "scores for the entrepreneurial sample follow[ed] the proposed low-high configurations through the eight phases as suggested by the model" (p. 750). However, this analysis seems circular. The phase model is, in fact, created by dichotomizing each subscale of the MBI into high and low scores. Thus, if a sample's scores on the MBI's subscales are dichotomized into high and low scores, they will indeed 'fit' the model. In addition, the study did not determine if each phase was significantly different from its neighbouring phases.

3.1.6 Leiter's Model of Burnout

Leiter's testing of a model that included work and social contacts as indicators of burnout was generally supported (Leiter, 1988). The inverse relationship between burnout and job satisfaction was also supported.

In order to test Leiter's (1991) expanded model of burnout, a coping survey was administered to subjects. The results of this survey suggest the coping hypothesis improved the fit of the model over Leiter's previous (1988) model. A negative relationship was found between emotional exhaustion and control coping. Also, a negative relationship was found between control coping and sense of personal accomplishment. Escapist coping was positively related to depersonalization and negatively related to personal accomplishment.

Leiter and Maslach (1988) studied the effects of different types of on-the-job contacts (e.g., coworkers and supervisors). The communication between these various

contacts was classified as either pleasant or unpleasant. To be consistent with Maslach and Jackson (1982), it was assumed that burnout would progress from emotional exhaustion to depersonalization to reduced personal accomplishment. Specifically, emotional exhaustion would arise in response to emotional stressors. Depersonalization may then occur as an individual detaches themselves from others in an effort to cope with the emotional exhaustion (Leiter & Maslach, 1988). Thus:

...Once the depersonalization occurs, the individual should begin to feel less successful on the job and should evaluate him or herself less positively in terms of actual accomplishments...In other words, the presence of emotional exhaustion will only lead to a sense of reduced personal accomplishment if depersonalization occurs as a mediating variable. (Leiter & Maslach, 1988, p. 299).

Thus, contacts with other employees within an organization should predict the three components of burnout. The findings were consistent with these assumptions (Leiter & Maslach, 1988). For example:

(1) Stressful interactions with supervisors increase the workers' feelings of emotional exhaustion; (2) high levels of exhaustion lead to depersonalization, unless the workers have frequent supportive contact with their coworkers; (3) as depersonalization persists, the workers' feelings of accomplishment in their work diminish, although supportive interpersonal contact with coworkers may help to decelerate this process. (Leiter & Maslach, 1988, p. 306).

3.1.7 Toward an Integrated Model of Burnout

Lee and Ashforth (1993b) completed a longitudinal study of supervisory and managerial burnout in an attempt to compare and contrast the models of Leiter (1988; 1991; Leiter & Maslach, 1988) and Golembiewski et al. (1986). It should be noted that the models **do** share common aspects. For example:

Both view burnout as a developmental process, where each dimension represents a key stage in the process. In both, lack of accomplishment is affected by depersonalization. The controversy concerns whether emotional exhaustion represents the initial or final stage of the process (Lee & Ashforth, 1993b, p. 372).

If emotional exhaustion is the first stage of burnout (e.g., Leiter & Maslach, 1988), then emotional exhaustion is related to reduced personal accomplishment via depersonalization (Lee & Ashforth, 1993b). If emotional exhaustion is the last stage of burnout (e.g., Golembiewski et al., 1986), then depersonalization is related to emotional exhaustion via feelings of reduced personal accomplishment (Lee & Ashforth, 1993b). Determining which conceptualization is a more accurate representation of the burnout process would aid in the prevention and treatment of burnout, and help to better determine the relationships of antecedents and consequences burnout (Lee & Ashforth, 1993b).

The burnout antecedents of role stress, work autonomy, and social support, as well as the burnout outcome of intent to turnover (i.e., the individual intends to leave the current organization) were used in order to determine which conceptualization of burnout was more accurate (Lee and Ashforth, 1993b). Work experience was used as a moderator of burnout: the lower the job tenure, the more likely the individual cannot adequately deal with job strain. It was found that the Leiter model (emotional exhaustion ---> depersonalization ---> lack of personal accomplishment) (Leiter, 1988; Leiter, 1991; Leiter & Maslach, 1988) was better fitting than the Golembiewski et al. (1986) model (depersonalization ---> lack of personal accomplishment ---> emotional exhaustion).

However, several additional paths improved the fit of Leiter's model. For example, a path between emotional exhaustion and personal accomplishment was added. In addition, paths between role stress and turnover intentions, as well as paths between emotional exhaustion and turnover intentions were added. These findings are then interpreted in terms of the stress-strain-coping paradigm (Leiter, 1989). Lee and Ashforth (1993b) indicate that their revised Leiter model suggests that:

(1) role stress affects strain (emotional exhaustion), and (2) strain induces coping (depersonalization as well as turnover intentions). Additionally, strain also undermines a sense of personal accomplishment (Lee and Ashforth, 1993b, p. 391).

A similar conceptualization of burnout as related to the stress-strain-coping paradigm has also been suggested by Koeske and Koeske (1989). A hypothesis that social support would buffer the effect of role stress on burnout was not supported (Lee & Ashforth, 1993b).

Lee and Ashforth (1993a) performed a further study of their revised Leiter model. It was found that emotional exhaustion (strain) plays a mediating role in burnout. In this study, however, social support was associated with emotional exhaustion through role stress. Again, the revised Leiter model had a better fit with the stress-strain-coping paradigm than did Golembiewski et al.'s (1986) model.

3.2 Work-Related, Personality and Extraorganizational

Correlates

A large portion of the previous empirical studies on burnout have examined the relationship of burnout to other variables. However, these relationships of burnout usually indicate the *presence* of stressors and fail to account for the *absence* of positive motivators such as autonomy (Golembiewski et al., 1986). The variables, their relationships, and the burnout measures or models to which they are related are summarized in Table 2 at the end of the chapter. It should be noted that the variables are associated with different measures of burnout, for example the MBI, the phase model, or other measures of burnout make comparisons between different studies difficult.

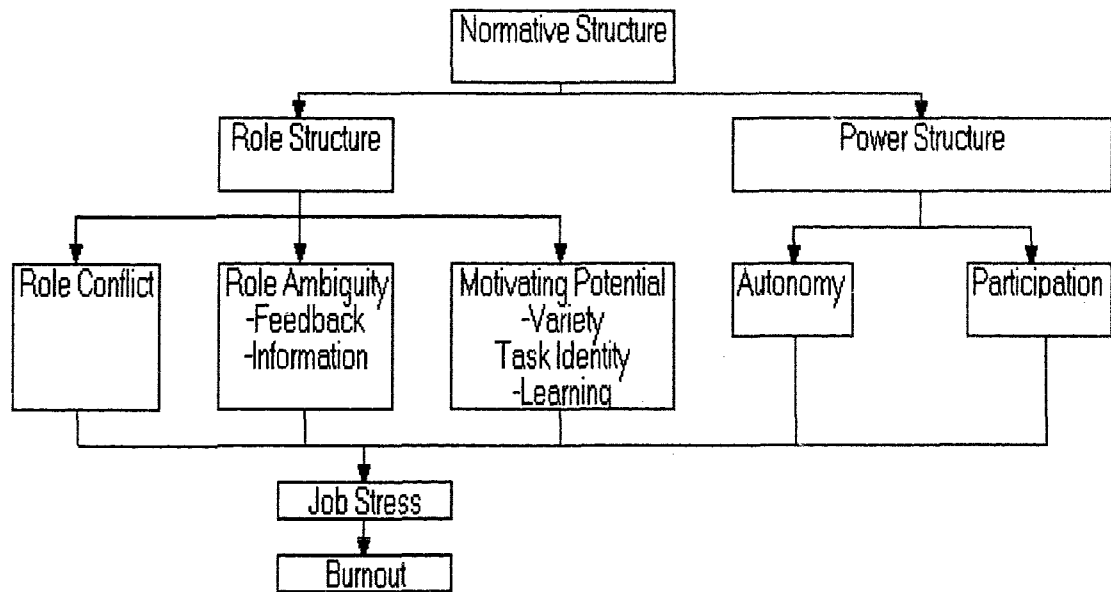
The various correlates can be generally divided into work-related, personality factors, and extra-organizational factors. Work-related correlates include such factors

as intention to turnover, absenteeism, communication patterns, corporate culture, and corporate organization (Cherniss, 1980a). A summary of how some of the corporate organization factors may be related to burnout is located in Figure 7. Personality factors include such correlates as self-esteem, locus of control, and self-orientation. These corporate organization factors are one component of Cherniss' Process Model of Burnout (1980a). Extraorganizational factors include such items as family-role conflict, support, and marital satisfaction. Some extra-organizational factors such as historical and cultural factors have received little attention. For example, "...the decline of the community during the last 150 years has increased organizational demands on human service agencies and reduced public confidence and support in those settings" (Cherniss, 1980b, p. 156), perhaps leading to burnout. Demographic variables, such as gender and age, have also been examined to determine their relationship with burnout.

Lazaro, Shinn, and Robinson (1983) found that there was a positive correlation between anticipated turnover (i.e., people had intentions of leaving in the future), actual turnover and burnout. Also, as job performance decreased, the more likely an individual was to report being burned out.

An individual's work environment, which may include such factors as support from coworkers, work pressures, and role clarity issues, was positively correlated with the MBI (Rosenthal et al., 1983). Cahoon and Rowney (1984) studied managerial burnout using the phase model of burnout, and its relation to a manager's level of responsibility. Mid-level managers were more likely to be in the advanced stages of burnout than senior or entry-level managers. Differences between public and private sector managers were also studied, and Cahoon and Rowney (1989) found that private

Figure 7: Impact of Organizational Design on Burnout



(Cherniss, 1980b, p. 110)

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sector managers tended to be more burned out. It was suggested that this may be due to greater uncertainty in the private sector, such as downsizing.

Golembiewski (1985) studied the relationship between response social desirability (SD) and the phase model of burnout. It was found that:

...the higher the burn-out phase, the lower the SD score. This implies that those low on Social Desirability more clearly perceive or more willingly admit to the socially-unattractive attributes associated with advanced phases of burnout (Golembiewski, 1985, p. 299).

It should be noted that this may result in a conservative estimate of the distribution of individuals amongst the phases of burnout. This pattern may also differentially affect self-reports about variables associated with burnout (Golembiewski, 1985).

The assertiveness of people on the job may buffer the effects of stress, but does not appear to do so when an individual is already burned out (Nagy, 1985). On the other hand, the more work-oriented an individual is, the less likely that individual will experience any burnout (Nagy, 1985). Personality factors such as high work-orientation, workaholism, and Type-A personality are positively correlated with burnout (Nagy & Davis, 1985). In turn, it is thought that these factors may influence social support systems, but Nagy and Davis (1985) did not offer empirical support for this assertion.

Four career orientations have been identified by Cherniss (1980a): 1) self-investors, who are more involved in their non-work lives, 2) social activists, who want to induce social and organizational change, 3) careerists, who seek conventional success, and 4) artisans, who seek growth, professional development, and challenge. Burke (1986) and Burke and Greenglass (1988) found that from these four career orientations, social activists are associated with greater burnout, as measured by the MBI, than the other career orientations. This finding may be related to the social activists' reports of a more negative work setting, a factor identified as an antecedent of

burnout (Cherniss, 1980). Of the four career orientations, artisans were associated with lower burnout and lower stress (Burke & Greenglass, 1988).

Glogow (1986) studied the association between burnout and locus of control. Glogow (1986) found that people who rated themselves as burned out were more likely to have an external locus of control. In effect, these individuals were more likely to place responsibility on the organization for preventing and dealing with burnout. Individuals who thought that they were not burned out, were more likely to have an internal locus of control. That is, these individuals would likely place responsibility on themselves for dealing with and preventing burnout.

Culture at the departmental level, especially a culture that is strongly based on shared values, has a strong negative correlation with the number of individuals in the advanced phases of burnout (Janz, Dugan, & Ross, 1986). Organizational culture, as measured by shared values and a culture index, show strong relationships with the subscales of the MBI (Janz, Dugan, & Ross, 1986).

Murphy and Pardek (1986) proposed that management style would affect the degree of experienced burnout. Specifically, it was hypothesized that the management style extremes of authoritarian and laissez-faire management styles create frustration, stress, irrelevant performance goals, decreased productivity, and role ambiguity. These factors are thought to be associated with an increased incidence of burnout. It was proposed that a participative management style would perhaps decrease frustration, stress, and role ambiguity, while increasing relevant performance goals, and productivity. These changes would likely result in a decreased incidence of burnout. However, an empirical study was not conducted to test these proposals.

Drory and Shamir (1988) found that extraorganizational factors such as community support and family-role conflict accounted for the largest portion of explained variance in burnout (26%). Organizational factors such as role conflict

(positive correlation), role ambiguity (positive correlation), and management support (negative correlation) explained the second largest portion of burnout variance (22%), while task characteristics such as skill variety, task significance, and autonomy only accounted for 11 percent. However, only the organizational and extraorganizational factors contributed uniquely to the prediction of burnout. Similarly, Burke and Greenglass (1989a) found that workplace variables such as workload, scope of client contact, autonomy, and leadership, were positively correlated with burnout. In contrast, Tennis (1989) found that workplace variables such as trust, leadership approach, and motivation have a negative relationship with burnout. Tennis (1989) offered no explanations for the discrepancy.

Seltzer, Numerof, and Bass (1989) explored the relationship between leadership style and burnout. Transformational leadership is described as "...when leaders broaden and elevate the interests of their followers, generate awareness and commitment of individuals to the purposes and mission of the group, and when they enable subordinates to transcend their own interests" (Seltzer et al., 1989, p. 174). It was found that a transformational leadership style is correlated with decreases in burnout.

The formalization of work-unit structures and processes such as rules, procedures, performance expectations, and communications were associated with reduced job-related stressors, and therefore reduced burnout (Lee & Ashforth, 1991).

Cherniss (1992) studied the long-term consequences of burnout, and concluded that:

...subjects who were more burned-out early in their careers were less likely to change careers and more flexible in their approach to work...The results suggest that early career burnout does not seem to lead to any significant, negative, long-term consequences (Cherniss, 1992, p. 1).

One possible explanation is that early career burnout may lead to a greater sense of investment and thus commitment to one's career. It was not possible to draw conclusions about burnout occurring in the mid-range of one's career (Cherniss, 1992).

Dolan and Renaud (1992) extracted three organizational factors correlated with burnout (using factor analysis) from twenty initial items. These three factors were top-down communications problems, interpersonal and cohesion problems, and lack of organizational commitment. Four personality factors were correlated with burnout. These four factors included self-esteem, locus of control, group versus self-orientation, and risk versus security orientation. The organizational and personality factors have positive significant correlations with the emotional exhaustion and personal accomplishment subscales of the MBI.

3.3 Demographic Correlates

Demographic correlates have been underrepresented in the correlational research. It is especially difficult to determine if there are gender differences in the experience or phase assignment of burnout since the occupations that have been studied are still predominantly gender-imbalanced (e.g., police, teachers, and nurses). It is suggested, however, that women may have different gender-role expectations and thus experience more burnout than men (Greenglass, 1991). However, Cahoon and Rowney (1984) found that more men than women were in the advanced phases of burnout, while Seltzer et al. (1989) and Bass (1989) were unable to determine the association between gender and burnout.

Burke and Greenglass (1989b) found that male teachers reported higher levels of burnout and lower levels of job satisfaction than female teachers. It was suggested that this finding was consistent with the lower levels of peer support reported by males than females (Burke & Greenglass, 1989b). For example, Felsten and Wilcox (1992)

suggest that social support may protect the individual from strain. As Burke and Greenglass (1989b) suggested, social support may indeed have such a role for female teachers.

Golembiewski et al. (1986) suggest that these correlates of burnout could generate either eustress (energizing and motivating responses) or distress (harmful responses). If eustress is produced, an individual's normal coping capabilities may be expanded, contributing to such factors as increased performance and productivity (i.e., less chance of burnout). If distress is produced, the individual's normal coping capabilities are strained, decreasing such factors as performance and productivity (i.e., more chance of burnout).

3.4 Problems with Correlational Studies

There are several general problems with correlational studies. First, correlation does not imply causation. Rather, correlations may only be interpreted as a correspondence between two variables (McClave & Dietrich, 1988). This makes it difficult to design interventions to alleviate burnout. Second, the variables in the studies are related to different measures and models of burnout, such as the MBI, MBI subscales, and the phase model of burnout, making comparison of results difficult. Comparisons are further impeded by the use of seldom used burnout scales, such as the Gillespie-Numerof Burnout Scale (Seltzer, Numerof, & Bass, 1989), and the use of non-specified measures of burnout (e.g., Lazaro, Shinn, & Robinson, 1983; Glogow, 1986; Cherniss, 1989). Last, comparisons between the results of various studies are further hampered by their use of disparate methodologies.

Table 1: Tests of Models and Definitions

Model or Definition	Tested by:	Findings
Freudenberger	Freudenberger (1974)	Evidence supporting this definition was found via case studies only
Cherniss Process Model of Burnout	Burke, Shearer, and Descza (1984)	Work setting and stress antecedents were correlated significantly with the MBI. Burnout was also associated with both negative personal and organizational outcomes. These results were interpreted as supportive of the Cherniss Process Model.
	Iwanicki and Schwab (1981)	Found general support of the MBI and its subscales.
	Wolpin, Burke, and Greenglass (1991)	Burnout appears to cause decrease job satisfaction. Study did not state if findings were consistent with the Cherniss Process Model.
Maslach and Jackson's Definition	Iwanicki and Schwab (1981)	Found general support of the MBI and its subscales.
	Golembiewski and Munzenrider (1981)	An additive approach to the MBI may be considered in addition to the individual sub-scale scores.
	Gold (1984)	Found general support of the MBI and its subscales.
		Found that either the frequency or intensity scale on the MBI was sufficient.
	Powers and Gose (1986)	Found general support of the MBI and its subscales.
	Green and Walkey (1988)	Found general support of the MBI and its subscales.
	Koeske and Koeske (1989)	Suggested that Emotional Exhaustion was burnout. Thus, Depersonalization and Personal Accomplishment were related to, but not part of burnout.
	Byrne (1991)	Confirmed the three-factor structure of the MBI, but found that the fit was improved if some items were deleted.
	Walkey and Green (1992)	Found two replicable factors in the MBI. The first was the "core of burnout", consisting of Emotional Exhaustion and Depersonalization. The other factor was the Personal Accomplishment scale.

Table 1: Tests of Models and Definitions (continued)

Model or Definition	Tested by:	Findings
Maslach and Jackson's Definition Continued	Evans and Fischer (1993)	Confirmed a three-factor structure, but determined that Depersonalization was only a valid MBI subscale for public-service type samples.
The Ecological Model	Not Tested	Not Tested
Perceptual-Feedback Paradigm	Not Tested	Not Tested
An Expanded Model of Burnout	Not Tested	Not Tested
Social Competence Model of Burnout	Not Tested	Not Tested
Phase Model of Burnout	Golembiewski et al. (1983) Golembiewski and Munzenrider (1983) Golembiewski and Munzenrider (1984)	Tested the phase model against the MBI, JDI, JDS, individual characteristics, and Job Involvement. There was general support for the phase model, but it was difficult to distinguish between neighbouring phases.
	Golembiewski et al. (1986)	Found that between 20 and 60 percent of individuals were in the advanced stages of burnout. People in the extremes of burnout tend to remain there over time.
	Rountree (1984)	Performed validation research, but collapsed the number of phases to three.
Leiter's Model of Burnout	Leiter (1988)	A model that included work and social contacts as indicators of burnout was generally supported.
	Leiter and Maslach (1988)	Concluded that contacts were predictive of the three components of burnout (i.e., the MBI subscales). Confirmed order of occurrence from Emotional Exhaustion to Depersonalization to Personal Accomplishment. These results are also consistent with the stress-strain-coping paradigm.
	Leiter (1991)	An expanded model that included coping as a variable improved the fit of the model.

Table 1: Tests of Models and Definitions (continued)

Model or Definition	Tested by:	Findings
<p>Toward an Integrated Model (comparisons between Golembiewski and Leiter's models)</p>	<p>Lee and Ashforth (1993b)</p>	<p>Found that Leiter's model had a better fit amongst the burnout antecedents of role stress, work autonomy, and social support, as well as the burnout outcome of turnover intentions. Some additional paths were added to the Leiter model to improve the 'fit'.</p>
	<p>Lee and Ashforth (1993a)</p>	<p>Again found that the Leiter model is the better fit with the stress-strain-coping paradigm. Also found that emotional exhaustion plays a mediating role in the burnout process.</p>

Table 2: General Correlates of Burnout

Authors	Subjects	Variables	Measure and Correlation						Notes
			P h a e e	M B I	E E	D	P A	O t h e r	
Brookings, Chacoe, Hightower, Howard, & Wajae (1985)	Social Service Agencies	Work Environment							
		Scale							
		-Work support			-0.43	0.25	-0.45		
Burke (1986)	Police	Career Orientation							(Number of + 's indicates strength of correlation)
		-Self-investor		++					
		-Social activist		++					
		-Careerist		+					
		-Artisan		+					
Burke & Dascza (1986)	Police	-Work setting	+						
		-Job satisfaction	-						
		-Intent to turnover	+						
		-Work/non-work conflict	+						
		-Lack of social support	+						
		-psychosomatic symptom	+						
		-Alcohol and drug use	+						
		-Work setting *	+						
		-Lack of participation	+						
		-Conflict and ambiguity	+						
		-Experienced stress	+						
		-Job satisfaction	-						
		-Absenteeism	?						
-Marital satisfaction	-								
-Social support	-								
-Role conflict	+								
Burke & Greenglass (1989a)	Teachers								* Work setting is composed of adequacy of orientation, workload, lack of stimulation, scope of client contact, agreement with org. goals, autonomy, leadership, and social isolation.

Table 2: General Correlates of Burnout (continued)

Authors	Subjects	Variables	Measure and Correlation							Notes	
			P h a s e	M B I	E E	D	P A	O i h e r			
Dolan & Renaud (1992)	Senior Executives	Organizational Stressors									
		-Top-down communication			0.23	0.14	-0.03				
		-Interpersonal problems			0.30	0.13	-0.12				
		-lack of commitment			0.31	0.26	-0.03				
		Job Stressors									
		-Work overload			0.51	0.22	-0.02				
		-Administrative constraints			0.37	0.20	-0.04				
		-Role ambiguity			0.36	0.22	-0.22				
		-Obstacles to task performance			0.25	0.23	-0.05				
		-Competency doubts			0.43	0.23	-0.10				
		Personality									
		-Self-esteem			0.48	0.30	-0.19				
		-Locus of control			0.25	0.13	-0.15				
-Group vs. self orientation			0.45	0.35	-0.17						
-Risk vs. security orientation			0.44	0.26	-0.21						

Table 2: General Correlates of Burnout (continued)

Authors	Subjects	Variables	Measure and Correlation								
			P h a s e	M B I	E E	D	P A	O t h e r	Notes		
Friesen & Sarros (1989)	Educators										
	Teachers	-Overall Work Stress		0.64	0.17	0.11					
		Job Satisfaction Factors									
		-Status and recognition		-0.42	-0.29	-0.37					
		-Autonomy		-0.32	-0.19	-0.25					
		-Interpersonal Relationships		-0.25	-0.22	-0.26					
		-Advancement		-0.28	-0.15	-0.13					
		-Security and Involvement		-0.26	-0.22	-0.30					
		-Workload		-0.47	-0.11	-0.17					
		-Salary and Benefits		-0.19	-0.12	-0.07					
		Job Characteristics Factors									
	-Role clarity		-0.21	-0.19	-0.19						
	-Job Challenge		-0.29	-0.32	-0.34						
	Administrators	-Overall Work Stress		0.48	0.23	0.00					
		Job Satisfaction Factors									
		-Status and recognition		-0.29	-0.27	-0.35					
		-Autonomy		-0.23	-0.26	-0.36					
-Interpersonal Relationships			-0.24	-0.23	-0.40						
-Advancement			-0.19	-0.07	-0.04						
-Security and Involvement			-0.25	-0.19	-0.38						
-Workload		-0.39	-0.08	-0.13							
-Salary and Benefits		-0.05	-0.04	-0.07							
Job Characteristics Factors											
-Role clarity		-0.25	-0.13	-0.13							
-Job Challenge		-0.10	-0.19	-0.34							

Table 2: General Correlates of Burnout (continued)

Authors	Subjects	Variables	Measure and Correlation							Notes	
			P h a s e	M B I	E E	D	P A	O t h e r			
Jackson, Schwab, & Schuler (1986)	Teachers	-Unmet expectations		0.30	-0.08	0.07					
		-Participation (mgmt.)		-0.18	0.17	-0.09					
		-Role conflict		0.36	-0.06	0.17					
		-Autonomy		-0.20	0.16	-0.13					
		-Social support		-0.24	0.19	-0.14					
		-Contingent rewards		-0.21	0.13	-0.09					
		-Role clarity		-0.30	0.10	-0.19					
Janz, Dugan, & Ross (1986)	Clerical	Organizational Culture									
		-Values		-0.43	-0.15	0.42					
		-Power		0.57	0.29	-0.26					
		-Rules		0.13	-0.23	0.12					
		-Total Culture Index		-0.61	-0.23	0.38					
		Departmental Culture									
		-Values		-0.91							
		-Power		?							
		-Rules		?							
				-Total Culture Index		-0.82					
Kahill (1986)	Psychologists	Social Support									
		-Total								Burnout assessed by the Tedium measure	
		-Friends								-0.30	developed by Pines and Aronson (1981).
		-Family								-0.36	
Lazaro, Shinn, & Robinson (1983)	Child Care Workers	-Job performance								-0.13	Unnamed burnout measure
		-Anticipated turnover								-0.48	developed by the Berkeley Planning Associates.
		-Absenteeism								0.26	
										?	
		-Actual turnover								0.06	

Table 2: General Correlates of Burnout (continued)

Authors	Subjects	Variables	Measure and Correlation							Notes	
			P h a s e	M B I	E E	D	P A	O t h e r			
Lee & Ashforth (1991)	Public Welfare Managers and Supervisors	-Age			-0.31	-0.36	0.14				
		Job-Related Stressors									
		-Role overload			0.55	0.27	0.15				
		-Role conflict			0.58	0.40	-0.11				
		-Role ambiguity			0.43	0.15	-0.21				
		-Helplessness			0.40	0.13	-0.28				
		Structure and Process									
		-Unit standardization			-0.14	-0.22	0.18				
		-Unit centralization			-0.15	-0.13	0.13				
		-External authority			0.07	0.03	0.05				
		-Interunit resource dependence			0.16	0.03	0.12				
		-Interunit formalization			-0.05	-0.18	-0.21				
		-Interunit consensus			-0.21	-0.24	0.11				
-Interunit coordination			-0.31	-0.25	-0.05						
McCulloch & O'Brien (1986)	Social Workers	-Career fulfillment							-0.57	Untested burnout scale	
		-Question authority							0.30		
		-Job support								-0.38	
		-Environment support								-0.04	
Murphy & Pardeck (1986)	n/a	Leadership Style								Burnout	
		-Authoritarian							+	(Author hypothesized	
		-Laissez-faire							+	correlation with burnout	
								-	only)		

Table 2: General Correlates of Burnout (continued)

Authors	Subjects	Variables	Measure and Correlation							Notes	
			P h a s e	M B I	E E	D	P A	O t h e r			
Nagy (1985)	Secretaries	Assertiveness									
		-Boss		0.05	-0.04	-0.06					
		-Coworkers		-0.06	-0.05	0.11					
		-Subordinates		-0.02	0.02	-0.10					
		-Work-orientation		-0.17	-0.18	-0.16					
Nagy & Davis (1985)	Teachers	-Job involvement		0.07	0.12	0.09					
		-Type A personality		-0.01	0.12	0.25					
		-Experience		0.02	-0.13	-0.02					
		-Attitude to Coworkers		0.26	-0.05	0.04					
		-Work-orientation		0.12	-0.29	-0.29					
Novelli, Elloy, & Flynn (1989)	Raw Materials Industry	Autonomous Work Teams	-								
		-Stress		0.55	0.59	0.47	0.13				
Ogus (1992)	Nurses	Coping		0.53	0.49	0.34	0.33				
		-Palliative Coping		-0.22	-0.15	-0.16	-0.22				
		-Internal Coping		-0.35	-0.33	-0.17	-0.25				
		-Preventative Coping		-0.23	-0.14	-0.08	-0.32				
		-Existential Coping		0.97							
Rosenthal, Teague, Retish, West, & Vessell (1983)	Recreation Workers	Work Environment Scale									
		-Staff support									
		-Work pressure									
		-Clarity									

Chapter 4: Coping, Social Support, Job-Induced Tension and Burnout

4.1 Coping

It has been suggested by some of the models of burnout that coping may have an effect on the degree of experienced burnout. Coping may be defined as "...efforts to master conditions of harm, threat or challenge when a routine or automatic response is not readily available" (Pines & Kafry, 1982, p. 140). Two dimensions of coping are suggested. First, there is the direct-indirect dimension. Direct coping strategies are applied directly to an environmental source of stress, whereas indirect coping strategies are applied toward one's behaviours, attitudes and emotions. Second, there is the active-inactive dimension. Active or control coping strategies involve attempting to change the sources of stress, while inactive or escapist coping strategies involve the withdrawal from sources of stress (Pines & Kafry, 1982; Dewe & Guest, 1990; Leiter, 1991). Four possible combinations of these two dimensions may be produced:

1. Direct-active: (1) changing the source of stress, (2) confronting the source of stress, (3) finding positive aspects in the situation.
2. Direct-inactive: (1) ignoring the source of stress, (2) avoiding the source of stress, (3) leaving the stressful situation.
3. Indirect-active: (1) talking about the source of stress, (2) changing oneself to adapt to the source of stress, (3) getting involved in other activities.
4. Indirect-inactive: (1) drinking or using drugs, (2) getting ill, (3) collapsing (Pines & Kafry, 1982, p. 141).

It seems that direct coping strategies would be more effective than indirect strategies, and active more effective than inactive. It is likely that the ideal of coping is "...a person who can master conditions of harm, threat and challenge in a variety of ways, and who uses in each situation the best, most effective strategy for that particular situation" (Pines & Kafry, 1982, p. 148).

Alternatively, coping efforts may be either problem-solving or emotional regulation (Taylor, Buunk, & Aspinwall, 1990). Problem-solving efforts try to make

stressful conditions constructive, whereas emotional regulation efforts attempt to regulate the emotional outcomes of the stressful event (Taylor et al., 1990). Social comparison processes influence these coping processes. For example, "...people undergoing naturally occurring stressors or victimizing events show a preponderance of downward comparison activity" (Taylor et al., 1990, p. 76). This emphasizes the importance of self-enhancement under threatening conditions.

Coping strategies to reduce or prevent burnout may be introduced at either the organizational or individual level. Organizational responses that may aid the coping process include the introduction of support groups (Scully, 1983; Burke, 1987). In addition, redefining career paths, redesign of jobs, changing the organizational structure, changing reward systems, improving training, and bettering communications may also aid the coping process (Cherniss, 1980b). Individual coping responses focus on shifting coping from an inactive (e.g., drinking or emotional responses) to an active (e.g., confronting the problem, changing competence) process (Shinn & Morch, 1983).

It has been found that organizational forms of coping contribute towards a favourable work attitude amongst employees. For example, organizational support groups may provide the listening, technical and emotional support and challenges that aid individuals within the organization to better cope with their jobs (Pines, 1983). Individual, active coping strategies have less of an effect on reducing job-related burnout than the organizational coping strategies. This suggests that individuals should not be fully responsible for combatting burnout themselves (Shinn & Morch, 1983; Burke, 1987).

Ogus (1992) found that in a sample of nurses, burnout was more common in individuals with inactive or escapist (rather than active or control) coping strategies. Age also had an influence on coping strategies. Younger, more inexperienced (in terms of years as a nurse) nurses were more likely to be burned out than older, more

experienced nurses. It was suggested that experience and time may aid in the development of effective individual coping strategies (Ogus, 1992).

Leiter (1990) proposed that an individual's non-work (e.g., family) coping resources may be of some help in alleviating burnout. Leiter (1990) found that family coping resources, although independent of work-related coping resources, do expand a person's ability to cope with work stress. Leiter (1990) suggested that there are two ways that family coping resources may help to alleviate the burnout phenomenon. First, effective non-work coping resources are less likely to create additional emotional demands in addition to occupational demands. Second, the family coping resources may view burnout as a phenomenon 'worthy' of its coping resources. In any case, effective family coping resources may ease the individual's experience of emotional exhaustion and help them to overcome such exhaustion (Leiter, 1990).

4.2 Social Support

"Social support from significant others is of major importance in coping with important life-events, and... social support can reduce or eliminate the adverse consequences of these events upon health or well-being" (Buunk & Hoorens, 1992, p. 445). Social support implies that under conditions of stress, people such as supervisors or coworkers may be relied upon for advice, information and understanding, guidance and support (Pines, 1983). From a social psychological perspective, social support may be a social comparison process in which individuals "...seek out others for reasons of self-evaluation, to assess the appropriateness of their own reactions" (Buunk & Hoorens, 1992, p. 447). A social support system may also be seen as having six functions for an individual: listening; technical support or competence affirmation; technical challenge to combat boredom; emotional support; emotional challenge or

questioning rationalizations; and social reality testing (Pines, 1983; Pines & Aronson, 1988).

Himle et al. (1989b) found that although support was negatively correlated with burnout and job stress, buffering effects were not observed. Still, supervisor and coworker emotional support was associated with lower levels of burnout. Social support may also have more direct effects. For example, social support has a positive buffering effect on people regardless of whether or not they are experiencing stressors.

Job stress is a predictor of burnout, and it has been suggested that social support may buffer the effects of such stress (Himle, Jayaratne, & Thyness, 1989b). When social support acts as a buffer, it protects the person from the negative aspects of stressors after the stressors have been encountered (Pines, 1983; Buunk & Hoorens, 1992).

In contrast, Davis-Sacks, Jayaratne, and Chess (1985) and Ross, Altmaier, and Russell (1989) found only a main effect of social support on burnout. That is, the greater the degree of reported social support, the lower the amount of reported burnout. Ross et al. (1989) suggested that although their findings contradicted the buffering model, a main effect may be found if the individuals studied were "experiencing sufficiently high levels of stress for social support to be effective in preventing burnout" (p. 469).

Haines, Hurlbert, and Zimmer (1991) suggest that:

...the effects of stress and social support are considered jointly in the buffer hypothesis, which predicts that high levels of stress will produce strain in individuals experiencing low levels of social support but not in individuals with good social support networks (Haines et al., 1991, p. 213).

Weak support for the buffer hypothesis was found. In fact, the results:

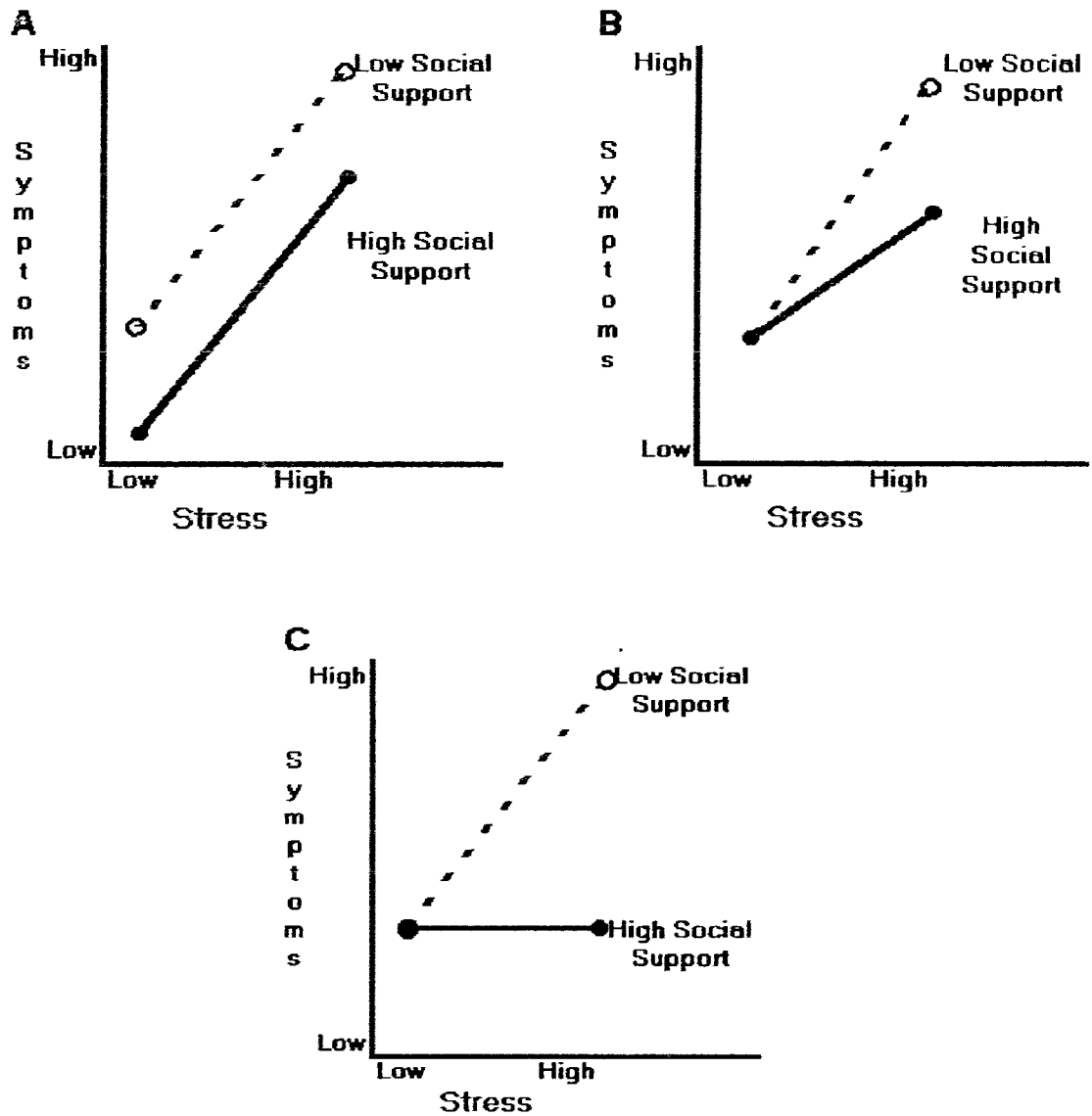
...suggest that stress caused by job constraints significantly increases strain independent of the level of social support. The effects of stress caused by workload and conflict, in contrast, are dependent on [the] level of work support -- exactly what the buffer hypothesis predicts. To understand the relationship between this kind of occupational stress, social support, and strain, the buffer hypothesis is essential (Haines et al., 1991, p. 226).

The effects of social support seem to be varied, and research suggests both main effects and buffering or interaction effects of social support on stress exist. In fact, Cohen and Wills (1985) suggest that social support and stress may have one of three relationships (See Figure 8). First, social support and stress may have a main effect relationship and no buffering or interaction effects. Second, social support and stress may have a partial buffering effect. For example, social support may partially reduce the effect of stress. Last, social support may have a buffering effect on stress, and a significant social support and stress interaction would occur.

Cohen and Wills (1985) found support for the three models in their literature review. It was suggested that the buffering effect was more likely to be found when the social support measure assessed "...interpersonal resources that are responsive to the needs elicited by stressful events" (Cohen & Wills, 1985, p. 347). A main effect was more likely to be found when the social support measure assessed "...a person's degree of integration in a large community social network" (Cohen & Wills, 1985, p. 348). Both social support effects are correct, but represent different processes through which social support affects an individual's response to stress. Russell, Altmaier, and Van Velzen (1987) and Cummins (1988) found support of the buffering effect of social support on stress. Etzion (1984) also found support for the buffering hypothesis. However, Etzion (1984) found that the stress-burnout relationship was moderated by non-work support for females and by work support for males.

Himle, Jayaratne, and Thyness (1989a) studied the effects of four types of supervisory support. The four types of supervisory support were: 1) emotional support; 2) appraisal support, or acknowledgment of good performance; 3) instrumental

Figure 8: Three possible effects of social support and stress



Where A is a main effect for support and no stress x support interaction;

B is where social support partially decreases the effect of stress; and

C is where social support buffers the effects of stress.

(Cohen & Wills, 1985, p. 316).

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support, or help in the completion of challenging tasks; and 4) informational support, or providing information when it is needed. It was found that instrumental and informational support from supervisors may decrease stress and thus decrease the probability of employees becoming burned out. Buffering effects were not observed for either the emotional or appraisal forms of supervisory support. Himle et al. (1989a) suggest that these forms of support are typically given to individuals that are not experiencing decreased performance, and may not be perceived as helpful by individuals with problems. In addition, "...emotional support may be offered but not accepted by workers because it requires too much self-disclosure for workers for it to be used effectively, or is seen [to be] merely palliative and not... related to the work task" (Himle et al., 1989a, p. 30).

Buunk and Verhoeven (1991) suggested that social support from coworkers may be important when there is a lack of social support from supervisory personnel. That is, social support "...between colleagues may help individuals to better deal with the problems surrounding the relationship with the superior" (Buunk & Verhoeven, 1991, p. 256). Constable and Russel (1986) and Ross et al. (1989) found that a lack of supervisory social support was more likely to lead to increased levels of burnout. Russell et al. (1987) found a buffering effect of supervisory support on the depersonalization subscale of the MBI: as supervisory support increased, the strength of the job stress-depersonalization relationship decreased.

Dignam and West (1988) suggest that social support may have an indirect effect (or insulating effect) on burnout. For example, social support may reduce the effect of perceived or actual stress, thereby leading to decreased burnout. It was also suggested that the indirect effects of social support may explain the weak support for both the direct and buffering hypotheses. Both cross-sectional and longitudinal studies were used to test the direct (or main effects), buffering, and indirect effects of burnout.

However, for cross-sectional studies, Dignam and West (1988) only found support for the main effects theory of social support. None of the theories of social support were supported by Dignam and West's (1988) longitudinal studies. However, Dignam, Barrera, and West (1986) had previously found that the indirect model of social support best described their results on a sample of correctional officers.

Felsten and Wilcox (1992) suggest that social support, by reducing the effects of stress, may provide a sense of mastery over the environment. Such mastery, or more specifically the construct of locus of control, is similar to social support. For example, an internal locus of control, or a high sense of mastery over the environment, is associated with reduced appraisals of stress (e.g., job-induced tension) and promotes the use of effective coping behaviours (Felsten & Wilcox, 1992). Sandler and Lakey (1982) and Cummins (1988) also found that 'internals' were more likely to use social support as a method of coping with stress. Specifically, those individuals with an internal locus of control who receive supportive behaviours, will be more likely to experience a stress-buffering effect.

4.3 Job-Induced Tension

The construct of job-induced tension typically taps the "...extent to which respondents are 'bothered' by role characteristics, including ambiguity and conflict" (Bateman & Strasser, 1983, p. 439). Job-induced tension is minimized by the presence of such positive job characteristics as the pleasantness of the working environment. Characteristics such as boredom and frustration increase the feelings of job-induced tension (Bateman & Strasser, 1983).

Dissatisfaction with supervision is a possible response to job-induced tension. For example:

The employee's dissatisfaction with supervision in response to job tension may be an externalized attribution of blame... it is posited that this attribution operates in two ways. First, it may have its basis in the employee's view of the superior as a direct source or cause of the job tension. Second, the actual source of tension may be external to the supervisor, but the employee may perceive the supervisor as a person in authority who could act, but is not acting, to minimize or reduce the tension (Bateman & Strasser, p. 443, 1983).

Therefore, job-induced tension is an important variable due to its possible association with perceived social support.

In addition, individuals with low self-esteem are more likely to exhibit more job-induced tension than individuals with high self-esteem (Shahani, Dipboye, & Phillips, 1990; Rosse, Boss, Johnson, & Crown, 1991). Although self-esteem is negatively related to burnout (Cherniss, 1980b; Maslach, 1982a), there is no support for the notion that self-esteem buffers "the relationship between burnout antecedents and burnout" (Rosse et al., 1991, p. 440).

Chapter 5: Research Hypotheses

Graphical representations of the hypotheses may be found in Figure 9 following the hypotheses. After each group of hypotheses, the relevant literature will be briefly discussed.

5.1 Hypotheses

Hypothesis 1a

Social support will have a negative relationship with burnout (i.e., as the level of perceived social support increases, the lower the burnout score).

Hypothesis 1b

Job-induced tension will have a positive relationship with burnout (i.e., the higher the amount of job-induced tension, the higher the burnout score).

Hypothesis 1c

There will be an interaction effect between social support and job-induced tension on burnout.

Social support has been found to have a negative relationship with burnout (e.g., Davis-Sacks et al., 1985; Burke & Descza, 1986; Deckard et al., 1986; Kahill, 1986; Jackson et al., 1986; McCulloch & O'Brien, 1986; Drory & Shamir, 1988; Burke & Greenglass, 1989a; Himle et al., 1989b; Ross et al., 1989). Job-induced tension has been found to have a positive relationship with burnout (Golembiewski et al., 1986). Thus, testing hypotheses 1a and 1b will serve as a replication of past research.

Based on Cohen and Wills' (1985) research on the buffering effects of social support on symptoms of stress, it is predicted that there will be an analogous effect between social support and job-induced tension on burnout.

Hypothesis 2a

Locus of control will have a positive relationship with burnout (i.e., as the locus of control becomes more external, the higher the burnout score).

Hypothesis 2b

There will be an interaction effect between locus of control and job-induced tension on burnout.

Locus of control has been found to have a positive relationship with burnout (e.g., Glogow, 1986; St-Yves, Freeston, Godbout, Poulin, St-Amand, & Verret, 1989; Wilson & Chiwakata, 1989; Dolan & Renaud, 1992). Testing Hypothesis 2a will serve as a partial replication of previous research. In addition, Hypothesis 2a is unique because the locus of control measure is designed specifically for use in the workplace (Spector, 1988).

An interaction between locus of control and job-induced tension on burnout is hypothesized because, for example, an internal locus of control is associated with reduced appraisals of stress (e.g., job-induced tension) (Felsten & Wilcox, 1992). This relationship may affect the reported burnout scores.

Hypothesis 3a

Self-esteem will have a negative relationship with burnout (i.e., individuals with a lower self-esteem will have higher burnout scores).

Hypothesis 3b

There will not be an interaction between self-esteem and job-induced tension on burnout.

Self-esteem has been found to be negatively related to burnout (Cherniss, 1980b; Maslach, 1982a). Since there is no support for the notion that self-esteem buffers "the relationship between burnout antecedents and burnout" (Rosse et al., 1991, p. 440), it is hypothesized that there will not be an interaction between self-esteem and job-induced tension on burnout. Thus, tests of Hypothesis 3a and 3b will be replications. However, Hypothesis 3a and 3b are necessary in order to justify the lack of four-way interactions in Hypothesis 4.

Hypothesis 4

There will be a three-way interaction between social support, job-induced tension and locus of control. That is, the degree of social support is irrelevant (for individuals with either an internal or external locus of control) under conditions of low job-induced tension. High perceived social support will result in lower burnout scores under conditions of high job-induced tension and is effective for individuals with either an internal or external locus of control.

Based on the above hypotheses and Cummins (1988) and Felsten and Wilcox' (1992) suggestion that social support, locus of control and stress are related, a three-way interaction is predicted. Since Felsten and Wilcox (1992) link social support and locus of control, a social support x work locus of control interaction was included as a control. No specific predictions were associated with this interaction. This hypothesis combines variables that have been previously studied individually into a regression model.

Figure 9: Graphical Depictions of Hypotheses

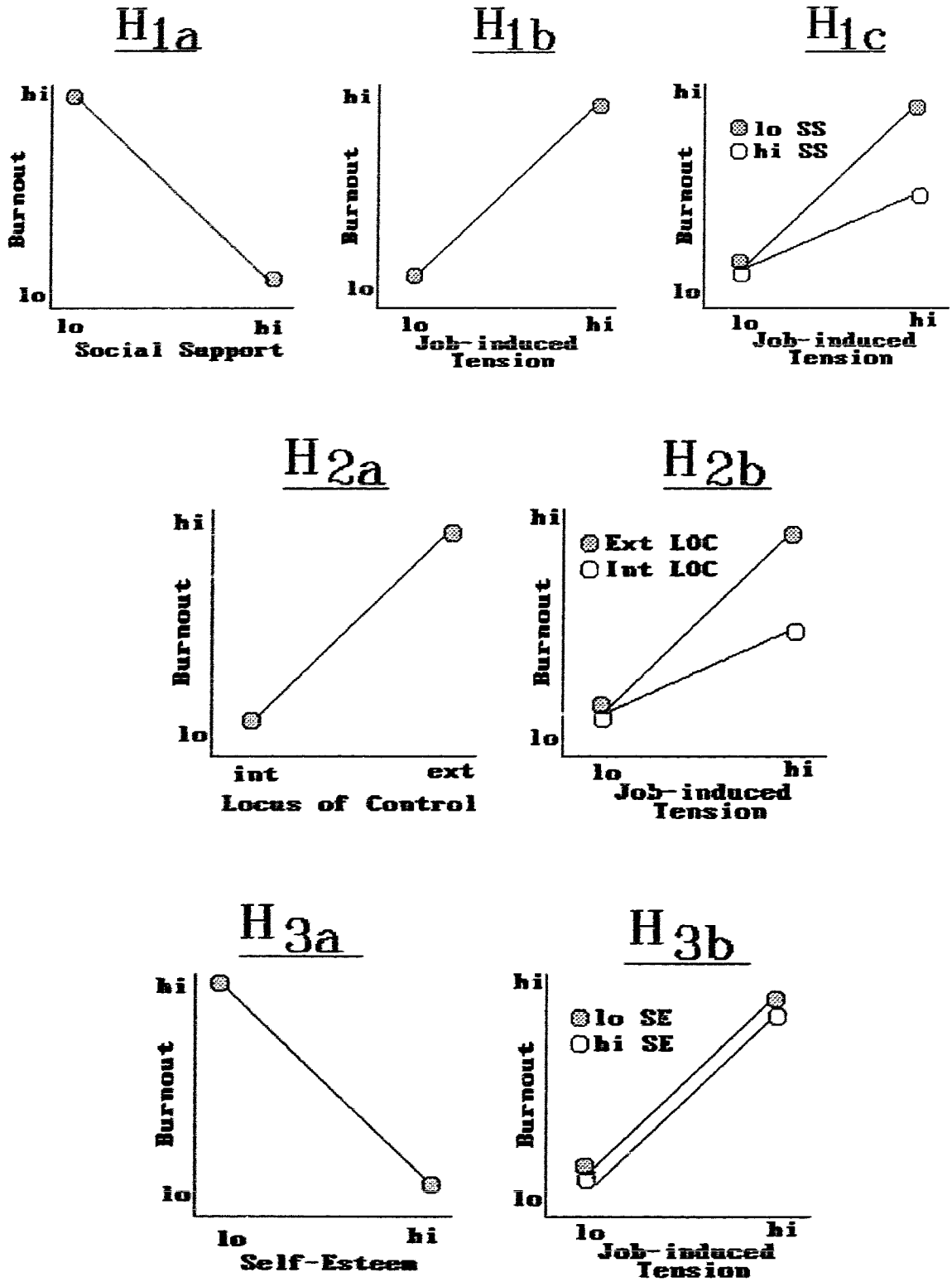
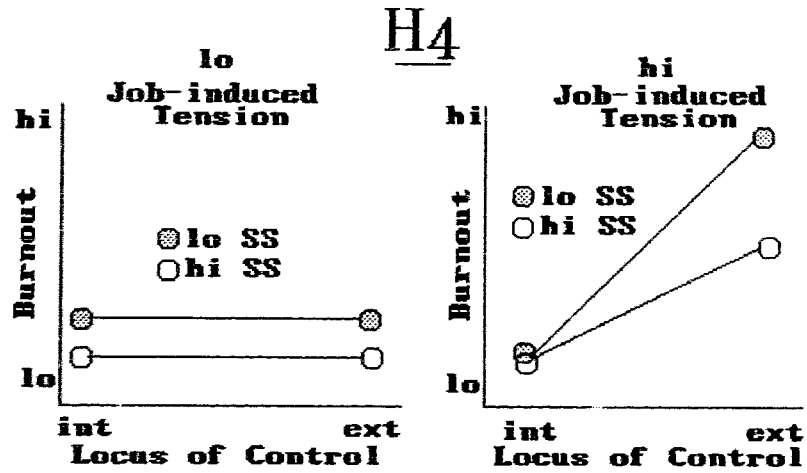


Figure 9: Continued



Notes for Figure 9:

- 1) int = internal locus of control
- 2) ext = external locus of control
- 3) SS = Social Support
- 4) LOC = Locus of Control
- 5) SE = Self-Esteem

Chapter 6: Method

6.1 Subjects

One thousand questionnaires were mailed to randomly selected subjects from a population of approximately 28,000 active members of a large public service employees union. Participation in the survey was voluntary, and an informed consent sheet was completed by all participating subjects. Subjects were be working in various locations throughout a western Canadian province, and were employed in various ministries of that province's public service.

6.2 Measurement of Variables

6.2.1 Dependent Variable

An additive approach to the MBI has been shown to be a valid approach (Golembiewski & Munzenrider, 1981). The 22-item MBI has three subscales; emotional exhaustion (9 items), depersonalization (5 items), and personal accomplishment (8 items). Each item is rated on frequency and intensity scales. Overall, the scale's coefficient alpha was .83 (frequency scale) and .84 (intensity scale) (Maslach & Jackson, 1981b). Internal consistency of the subscales as measured by Cronbach's coefficient alpha were:

... .90 (frequency) and .87 (intensity) for Emotional Exhaustion, .79 (frequency) and .76 (intensity) for Depersonalization, and .71 (frequency) and .73 (intensity) for Personal Accomplishment (Maslach & Jackson, 1981a, p. 7).

Test-retest reliability were:

... .82 (frequency) and .53 (intensity) for Emotional Exhaustion, .60 (frequency) and .69 (intensity) for Depersonalization, and .80 (frequency) and .68 (intensity) for Personal Accomplishment. Although these coefficients range form low to moderately high, all are significant beyond the .001 level (Maslach & Jackson, 1981a, p. 7).

6.2.2 Predictor Variables

The predictor variables are:

- 1) Social Support (measured by a 13-item social support scale developed by Caplan, Cobb, & French, 1975);
- 2) Job-Induced Tension (measured by a 7-item job-induced tension scale developed by House and Rizzo, 1972);
- 3) Self-Esteem (measured by a 30-item self-esteem scale developed by Lawson, Marshall, and McGrath, 1979); and
- 4) Locus of Control (measured by a 16-item Work Locus of Control Scale developed by Spector, 1988).

General descriptions of the scales used for the predictor variables follow.

Social Support

Perceived social support from supervisors and coworkers was measured using a scale developed by Caplan, Cobb, and French (1975). All items in the scale correlated significantly with each other ($p < .05$, $r = .21$). Coefficient alpha for this measure was not reported.

Job-Induced Tension

Job-induced tension was measured by a seven-item scale (House & Rizzo, 1972). The scale has a Kuder-Richardson internal reliability coefficient (a special case of coefficient alpha for dichotomous questions) of between .73 and .83.

Self-Esteem

Self-esteem was measured using an inventory developed by Lawson, Marshall, and McGrath (1979) (see Appendix C). The 30-item scales consists of 15 positively and 15 negatively scored statements. The inter-item correlation for this scale is .60.

Coefficient alpha for this measure was not reported. Test-retest reliability was .88 when measured over a four-week period (Lawson et al., 1979).

Locus of Control

Spector (1988) developed the Work Locus of Control Scale (WLCS) to measure general control beliefs in work settings (see Appendix B). The mean intercorrelation of items on the 16-item scale is .25. Low scores on the scale represent an internal locus of control. The coefficient alpha across six samples ranged from .75 to .85, with the mean coefficient alpha being .825 (Spector, 1988).

6.2.3 Control Variables

In addition, it will be necessary to include control variables that help to prevent contamination of the results (Spector, 1990). These control variables will include:

- 1) gender;
- 2) age;
- 3) job tenure in current organization;
- 4) job tenure in current career area;
- 5) job tenure in any previous career areas;
- 6) number of individuals in current work group;
- 7) services provided by organization;
- 8) highest level of education completed;
- 9) marital status; and
- 10) income.

6.4 Procedure

Dillman's (1978) procedure for mail surveys was followed. For example, the survey was printed on both sides of 8.5 inch by 14 inch (legal size) white paper in booklet form (i.e., the paper was folded in half to form a 7 inch by 8.5 inch booklet). The cover of the booklet had a graphic depiction of the province in which the survey was distributed, and was entitled "Human Services Survey". Also included on the cover were the instructions "Please read the information sheet before completing this questionnaire," "Please return this questionnaire to: Faculty of Business Administration, Simon Fraser University, Burnaby, B.C., V5A 1S6" and "This Human Services Survey is distributed in association with [the name of the public service employees union]." A sample of the questionnaire (excluding references that would identify the sample, and including sample items only for the MBI) is found in Appendix D.

Also in accordance with Dillman (1978), a hand-signed (blue ink) cover letter, an informed consent form (printed on the reverse side of the cover letter) (please see Appendix E for samples) and a business reply envelope were enclosed with each questionnaire. In addition, the public service employees union enclosed a cover letter (printed on their letterhead) with each survey. The questionnaire package was mailed to the home addresses of the union members.

6.5 Statistical Analysis

Regression equations were developed for each of the hypotheses, and are illustrated in Table 3. Details of the statistical analysis may be found in Chapter 7.

The centering transformation described by Jaccard, Turrisi, and Wan (1990) was used for multiple regression equations containing interaction terms. Centering decreases the multicollinearity associated with interaction terms, and is a valid

transformation for both two- and three-way interactions. That is, this transformation will "...tend to yield low correlations between the product term and the component parts of the term" (Jaccard et al., 1990, p. 31). For each variable in the product term of the multiple regression, the mean for each variable is subtracted from all the scores for that variable. This yields a mean of zero for each variable in the product term while the standard deviation remains the same.

Table 3: A Priori Regression Equations for Dependent Variable = Burnout

Hypothesis	Equation Number	Main Effect	Interaction	Control Variables
1a	1	SS		
	2	SS		Include
1b	3	JIT		
	4	JIT		Include
1c	5	SS, JIT		
	6	SS, JIT		Include
	7*	SS, JIT	SS x JIT	
	8*	SS, JIT	SS x JIT	Include
2a	9	LC		
	10	LC		Include
2b	11	LC, JIT		
	12	LC, JIT		Include
	13*	LC, JIT	LC x JIT	
	14*	LC, JIT	LC x JIT	Include
3a	15	SE		
	16	SE		Include
3b	17	SE, JIT		
	18	SE, JIT		Include
	19*	SE, JIT	SE x JIT	
	20*	SE, JIT	SE x JIT	Include
4	21	SS, LC, JIT, SE		
	22	SS, LC, JIT, SE		Include
	23*	SS, LC, JIT, SE	SS x JIT LC x JIT SE x JIT SSx WLCS	
	24*	SS, LC, JIT, SE	SS x JIT LC x JIT SE x JIT SSx WLCS	Include
	25*	SS, LC, JIT, SE	SS x JIT LC x JIT SE x JIT SSx WLCS SS x LC x JIT	
	26*	SS, LC, JIT, SE	SS x JIT LC x JIT SE x JIT SSx WLCS SS x LC x JIT	Include

Note: SS = Social Support, LC = Locus of Control, SE = Self-Esteem, and JIT = Job-Induced Tension

* Centered variables as to avoid multicollinearity in transaction terms as described by Jaccard, Turrisi, and Wan (1990).

Chapter 7: Results

7.1 Response Rate and Data Entry

Of 1000 questionnaires mailed, there were 21 questionnaires that were returned by the post office as undeliverable. Thus, there were 979 potential respondents. There were 208 questionnaires returned for an overall response rate of 21.2%. However, 1 questionnaire was returned blank, and 3 questionnaires were returned incomplete. Thus, of the 979 potential respondent, 204 usable questionnaires were returned, resulting in a usable response rate of 20.8%. After the questionnaires were returned via mail, SPSS/PC+ for the IBM PC was used to enter and analyze the data (see Appendix F and G).

7.2 Sample Characteristics

There were 120 female (58.8%) and 84 male (41.2%) respondents (compared to the actual 57% female to 43% male distribution in the union). Respondents' age groups ranged in age from 20-24 to 60-65 years, with most of the respondents in the 35-44 year range (mode = 35-44, s.d. = 1.021). Most respondents had completed or partially completed high school (32.8%), or community college (36.3%) (mode = college, s.d. = 0.986). Most respondents were also married (66.7%) (encompasses married, common law and same-sex partners) (mode = married, s.d. = 0.643). In addition, most respondents earned between 30,000 to 39,999 dollars (mode = 30,000 to 39,999, s.d. = 0.989). Respondents had worked an average of 7.8 years in their current ministry (mean = 7.786, s.d. = 7.616), while having worked an average of 8.6 years in their current occupation (mean = 8.605, s.d. = 7.586). Twelve people typically reported to the respondents' immediate supervisor (mean = 11.975, s.d. = 16.929). Details of some of the sample's demographics may be found in Table 4 at the

end of Chapter 7. Means, standard deviations and correlations amongst the variables may be found in Table 5 at the end of Chapter 7.

7.3 Variables Dropped from the Analysis

Three of the demographic variables were dropped from the analysis. First, the number of years worked in a previous occupation by respondents was dropped since there was a high percentage of missing (16.2%) or null values (11.3%). Included in the missing values were answers that included ranges of years worked in a previous occupation. Coding of the data into categories was considered, but many of the year-ranges reported would have spanned several categories.

Second, the demographic variable for the total number of people in the respondents' organization was dropped from the analysis. The question "Approximately how many people work in your organization" was interpreted in several ways. Some respondents interpreted the question to mean the total number of people within their government ministry. Alternatively, some respondents interpreted the question to mean the total number of people in their office. Because of the question's ambiguity, the resultant uninterpretable answers, and missing values (12.7%), this variable was also dropped from further analysis.

Last, the demographic variable of the ministry each respondent worked for (i.e., in order to determine the services provided by the ministry) was dropped from the analysis due to the ambiguity of responses. Some respondents indicated the branch of the ministry that they worked for (e.g., Corrections, a branch of the Ministry of the Attorney General), while others only specified their ministry. Coding the more specific answers to less-specific ministry-only data was considered. However, it was also felt that ministry-only data was too vague for analysis, as occupation-specific

(e.g., provided by branch and ministry data) conclusions could not be reached. Thus, this variable was also dropped from the analysis.

7.4 Scale Reliabilities

The current study obtained coefficient alphas of 0.8886 for the MBI frequency scale and 0.9040 for the MBI intensity scale. Internal consistency of the subscales were as follows: 0.9154 (frequency) and 0.9224 (intensity) for Emotional Exhaustion; 0.8332 (frequency) and 0.8340 (intensity) for Depersonalization; 0.7841 (frequency) and 0.7921 (intensity) for Personal Accomplishment. The overall alpha for the MBI (both frequency and intensity) was 0.9472. The pattern of these alpha values are consistent with those found by Maslach and Jackson (1981a), but were greater in magnitude.

For the other scales used in the study, a coefficient alpha of 0.8979 was obtained for the overall social support scale (i.e., including both supervisors and coworkers). Second, the present study obtained a coefficient alpha of 0.7574 for the job-induced tension scale. This value is within the alpha range reported by House and Rizzo (1972). Third, the social self-esteem scale had a coefficient alpha of 0.9332 for the current study. Last, the current study obtained a coefficient alpha of 0.8619. This alpha is slightly higher than the range of 0.75 to 0.85 obtained by Spector (1988).

7.5 Regression Equations

The total MBI score (frequency plus intensity) was used as the dependent variable for all regression equations. Regression summaries for each hypothesis are found in Table 6 at the end of Chapter 7. The portion of variance accounted for by the variables should be interpreted with caution. The current study used a hierarchical model of regression in which the variables of primary interest were entered into the

regression before the control variables. In this method of regression, the primary variables of interest may seem to account for a larger portion of the variance than they should (Bausell, 1986).

7.5.1 Hypothesis 1a

Hypothesis 1a was supported. Social support was negatively associated with burnout ($\beta = -.43$, $p < .0001$). A multiple regression (Equation 1) entered social support on the dependent variable of burnout. Social support contributed significantly to the overall R^2 of 0.18130 ($F = 40.30$, $p < .0001$).

In addition, social support and the demographic variables were entered into a regression equation with the dependent variable of burnout (Equation 2). Social support and subjects' job tenure within the organization contributed significantly to the R^2 of .23638 ($F = 5.84$, $p < .0001$). The significant effect of social support continued even in the presence of demographic variables, and accounted for 16.845 percent of the variance. Organizational job tenure accounted for 3.819 percent of the variance and was positively associated with burnout ($\beta = .20$, $p < .05$). The remaining non-significant demographic variables accounted for 2.974 percent of the variance.

7.5.2 Hypothesis 1b

Hypothesis 1b was supported. Job-induced tension was positively related to burnout ($\beta = .62$, $p < .0001$). When job-induced tension was entered into a regression with the dependent variable burnout (Equation 3), job-induced tension contributed significantly to the overall R^2 of 0.37972 ($F = 112.64$, $p < .0001$). This effect remained significant when job induced tension and the demographic variables were entered into a regression with the dependent variable burnout (Equation 4). Job-induced tension, organizational tenure, and respondents' income contributed

significantly to the overall R^2 of 0.43052 ($F = 14.53$, $p < .0001$), and accounted for 38.328 percent ($\beta = .62$, $p < .0001$), 1.562 percent ($\beta = .18$, $p < .05$), and 1.249 percent ($\beta = -.20$, $p < .05$) of the variance respectively. Other demographic variables were nonsignificant and together accounted for 1.913 percent of the variance.

7.5.3 Hypothesis 1c

Hypothesis 1c was not supported (Equations 5, 6, 7, 8). There was no significant social support by job-induced tension interaction. The interaction only accounted for 0.515 percent of the variance and did not contribute significantly to the R^2 of 0.49215 ($F = 14.44$, $p < .0001$). However, Equation 8 contained significant main effects for job-induced tension, social support, and organizational tenure. Job-induced tension accounted for 37.629 percent ($\beta = .52$, $p < .0001$) of the variance, while social support accounted for 5.770 percent ($\beta = -.26$, $p < .0001$), organizational tenure accounted for 2.097 percent ($\beta = .21$, $p < .05$), marital status accounted for 1.036 percent ($\beta = -.12$, $p < .05$), and income group accounted for 1.17 percent of the variance ($\beta = -.21$, $p < .05$). The other demographic variables were nonsignificant and together accounted for only 1.806 percent of the variance. Thus, the main effects for social support and job-induced tension remained significant in the presence of demographic variables and a nonsignificant social support by job-induced tension interaction term.

Social support and job-induced tension were centered for equations 7 and 8. However, no changes in their contribution to R^2 was noted as a result of the centering transformation.

7.5.4 Hypothesis 2a

Hypothesis 2a was also supported. Work locus of control was positively related to burnout ($\beta = .3318$, $p < .0001$). Work locus of control was entered into a regression equation with the dependent variable burnout (Equation 9), contributed significantly to the R^2 of 0.11010 ($F = 22.76$, $p < .0001$). The effect of work locus of control remained significant when the demographic variables were entered into the regression (Equation 10). Work locus of control, organizational tenure, and respondents' age contributed significantly to the R^2 of 0.16811 ($F = 3.86$, $p < .0001$). Work locus of control accounted for 11.685 percent of the variance ($\beta = .32$, $p < .0001$), organizational tenure accounted for 3.17 percent ($\beta = .25$, $p < .005$), age accounted for 1.576 percent ($\beta = -.14$, $p < .05$), and the other demographic variables accounted for 0.38 percent of the variance.

7.5.5 Hypothesis 2b

Hypothesis 2b was not supported (Equations 11, 12, 13, and 14). Specifically, the interaction between work locus of control and job-induced tension was not significant, and only accounted for 0.006 percent of the total variance in Equation 14. Rather, it was found that job-induced tension, work locus of control, organizational tenure, and respondents' income contributed significantly to the R^2 of 0.50297 ($F = 15.36$, $p < .0001$). Job-induced tension accounted for 42.037 percent of the variance ($\beta = .61$, $p < .0001$), work locus of control accounted for 2.754 percent of the variance ($\beta = .16$, $p < .05$), organizational tenure accounted for 2.073 percent ($\beta = .21$, $p < .005$), and respondents' income accounted for 1.509 percent ($\beta = -.19$, $p < .05$). The other demographic variables were nonsignificant and together accounted for only 1.918 percent of the variance. Thus, the main effects for work locus of control and job-induced tension were significant even in the presence of

demographic variables and a nonsignificant work locus of control by job-induced tension interaction term.

Work locus of control and job-induced tension were centered for equations 13 and 14. However, no changes in their contribution to R^2 was noted as a result of the centering transformation.

7.5.6 Hypothesis 3a

Hypothesis 3a was supported (Equations 15 and 16) in that self-esteem was negatively associated with burnout ($\beta = -.375$, $p < .0001$). This effect remained strong in the presence of demographic variables. An individual's social self-esteem contributed significantly to an R^2 of 0.14097 ($F = 30.36$, $p < .0001$). When social self-esteem was entered into a regression with the demographic variables on the dependent variable burnout (Equation 16), self-esteem contributed significantly to the R^2 of 0.20130 ($F = 4.93$, $p < .0001$). Self-esteem accounted for 14.453 percent of the variance ($\beta = -.374$, $p < .0001$). The demographic variables together accounted for 4.327 percent of the variance.

7.5.7 Hypothesis 3b

Hypothesis 3b was supported (Equations 17, 18, 19, and 20) since, as predicted, the social self-esteem and job-induced tension interaction was not significant. However, social self-esteem and job-induced tension did contribute significantly to the R^2 of 0.50493 ($F = 15.48$, $p < .0001$) (Equation 20). Self-esteem accounted for 15.967 percent of the variance and job-induced tension accounted for 31.015 percent of the variance. There were no significant demographic variables in these equations. For example, in Equation 20, the demographic variables accounted for 3.141 percent of the variance.

Social self-esteem and job-induced tension were centered for equations 19 and 20. However, no changes in their contribution to R^2 was noted as a result of the centering transformation.

7.5.8 Hypothesis 4

Hypothesis 4 was not supported (Equations 21, 22, 23, 24, 25, and 26): there was not a significant three way interaction between social support, work locus of control and job-induced tension. When the full model without demographics was used (Equation 25), job-induced tension, social self-esteem, social support and work locus of control all contributed significantly to the overall R^2 of 0.54523 ($F = 21.58$, $p < .0001$). Job-induced tension accounted for 41.572 percent of the variance, social self-esteem accounted for 8.143 percent, social support accounted for 2.490 percent, and work locus of control accounted for 1.082 percent. All two-way interactions were non-significant. The three-way interaction was also nonsignificant and accounted for 0.533 percent of the variance.

When the full model with demographics was used (Equation 26), job-induced tension, social self-esteem, work locus of control and organizational tenure contributed significantly to the overall R^2 of 0.58566 ($F = 12.55$, $p < .0001$). Social support did contribute significantly to the overall R^2 , and accounted for 2.490 percent of the variance. Job-induced tension accounted for 41.572 percent of the variance, social self-esteem accounted for 8.143 percent, work locus of control accounted for 1.082 percent, and organizational tenure accounted for 0.740 percent of the variance.

Job-induced tension, social self-esteem, social support and work locus of control were centered for equations 21 through 26. However, no changes in their contribution to R^2 was noted as a result of the centering transformation.

Table 4: Sample Demographics

Variable	Value	Frequency	Percent
Gender of Subject	Female	120	58.80
	Male	84	41.20
	Total	204	
Age of Subject	19 or under	0	3.40
	20 - 24	7	24.00
	25 - 24	49	37.30
	35 - 44	76	25.50
	45 - 54	52	6.90
	55 - 59	14	1.50
	60 - 65	3	1.50
	Missing	3	1.50
Total	204		
Education Level	High School	67	32.80
	College	74	36.30
	Bachelors Degree	39	19.10
	Masters Degree	23	11.30
	Missing	1	0.50
	Total	204	
Marital Status	Single	29	14.20
	Married	136	66.70
	Separated or Divorced	31	15.20
	Widowed	6	2.90
	Missing	2	1.00
	Total	204	
Income	19,999 or under	2	1.00
	20,000 - 24,999	9	4.40
	25,000 - 29,999	54	26.50
	30,000 - 39,999	75	36.80
	40,000 - 49,999	53	26.00
	50,000 or more	9	4.40
	Missing	2	1.00
Total	204		

Table 5: Means, Standard Deviations and Correlations

Variable	n	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
1) MBI Total	191	98.4	42.6	1.0																					
2) MBI D (Freq.)	203	8.2	6.8	.75	1.0																				
3) MBI D (Intens.)	201	9.6	7.6	.76	.90	1.0																			
4) MBI PA (Freq.)	198	13.5	8.1	.55	.22	.30	1.0																		
5) MBI PA (Intens.)	201	20.0	8.5	.62	.31	.32	.81	1.0																	
6) MBI EE (Freq.)	201	21.6	12.0	.85	.58	.53	.15	.25	1.0																
7) MBI EE (Intens.)	201	24.8	14.1	.86	.50	.53	.23	.28	.92	1.0															
8) MBI Frequency	195	43.4	20.0	.98	.77	.74	.57	.59	.86	.81	1.0														
9) MBI Intensity	195	55.0	23.3	.99	.71	.76	.52	.63	.82	.87	.94	1.0													
10) WLCS	198	40.8	12.3	.33	.24	.24	.20	.21	.32	.31	.33	.33	1.0												
11) SSE	200	133.5	21.8	-.38	-.30	-.31	-.32	-.32	-.25	-.26	-.38	-.36	-.18	1.0											
12) SS	195	88.3	14.3	-.43	-.23	-.24	-.29	-.32	-.38	-.41	-.41	-.44	-.29	.26	1.0										
13) JIT	199	3.6	2.2	.62	.43	.45	.13	.16	.68	.71	.59	.62	.31	-.18	-.28	1.0									
14) Org. Tenure	203	7.8	7.6	.21	.14	.17	.09	.06	.21	.20	.23	.19	.10	-.17	-.10	.16	1.0								
15) Occ. Tenure	203	8.6	7.6	.12	.02	.01	.07	.05	.15	.13	.14	.11	.16	-.08	.05	.09	.47	1.0							
16) # Reporting Sup.	204	12.0	16.9	-.04	-.03	-.03	.03	.00	-.04	-.01	-.03	-.02	-.04	-.04	-.04	.00	-.01	.08	1.0						
17) Gender	204	0.4	0.5	.08	.12	.11	.04	.03	.07	.02	.11	.07	.07	-.10	-.18	.05	.30	.18	-.06	1.0					
18) Age	201	3.1	1.0	.01	-.08	-.08	-.02	.01	.04	.02	.02	.02	-.01	.05	-.12	-.01	.43	.44	.20	.16	1.0				
19) Education	203	1.1	1.0	-.05	-.08	-.11	-.05	-.03	.05	.04	-.03	-.04	-.01	.15	.07	.03	-.18	-.10	-.12	.18	-.12	1.0			
20) Marital Status	202	0.7	0.5	-.06	-.02	.00	-.08	-.10	-.04	-.04	-.06	-.07	-.09	.05	-.09	.08	.11	.15	-.04	.20	.13	.14	1.0		
21) Income	202	3.0	1.0	.06	.06	.06	-.13	-.10	.15	.12	.07	.05	.11	.06	-.07	.19	.35	.25	-.13	.54	.14	.36	-.07	1.0	

Notes: 1) for $r > = 0.22, p < .001$

2) for $r > = 0.16, p < .01$

3) D = Depersonalization, PA = Personal Accomplishment, and EE = Emotional Exhaustion, WLCS = Work Locus of Control, SSE = Social Self-Esteem, SS = Social Support, and JIT = Job-Induced Tension.

Table 6: Regression Summaries for A Priori Regression Equations

H	Equation Number	F	Significance of F	df	Variable	Beta	T	Significance of T	Contribution to R ²	Cumulative R ²
1a	1	40.30	p<.0001	182	SS	-0.43	-6.37	p<.0001	0.18130	0.18130
	2	5.84	p<.0001	170	SS Organizational Tenure Other Demographics	-0.39 0.20	-5.87 2.92	p<.0001 p<.05 non sig.	0.15631 0.03819 0.02974	0.16845 0.20664 0.23638
1b	3	112.64	p<.0001	184	JIT	0.62	10.61	p<.0001	0.37972	0.37972
	4	14.53	p<.0001	173	JIT Organizational Tenure Income Other Demographics	0.62 0.18 0.20	10.48 2.37 -2.51	p<.0001 p<.05 p<.05 non sig.	0.38328 0.01562 0.01248 0.01913	0.38328 0.39890 0.41139 0.43052
1c	5	67.47	p<.0001	176	JIT SS	0.52 -0.26	8.67 -4.24	p<.0001 p<.0001	0.37629 0.05770	0.37629 0.43399
	6	15.70	p<.0001	165	JIT SS Organizational Tenure Marital Status Income Other Demographics	0.54 -0.24 0.20 -0.12 -0.21	8.82 -4.04 2.76 -2.09 -2.69	p<.0001 p<.001 p<.05 p<.05 p<.05	0.37977 0.04902 0.02080 0.01059 0.01102 0.01638	0.37977 0.42879 0.44959 0.46018 0.47120 0.48758
7*	7	45.11	p<.0001	175	JIT SS SSxJIT	0.51 -0.26 0.05	8.02 -4.24 0.81	p<.0001 p<.001 non sig.	0.37629 0.05770 0.00210	0.37629 0.43399 0.43609
	8*	14.44	p<.0001	164	JIT	0.52	8.03	p<.0001	0.37629	0.37629
					SS SSxJIT	-0.24 0.07	-4.10 1.22	p<.001 non sig.	0.04961 0.00515	0.42590 0.43105
					Organizational Tenure Marital Status Income Other Demographics	0.21 -0.12 -0.21	2.88 -2.06 -2.72	p<.05 p<.05 p<.05	0.02312 0.01036 0.01170	0.45417 0.46453 0.47623
									0.01592	0.49215

Table 6: Regression Summaries for A Priori Regression Equations (continued)

H	Equation Number	F	Significance of F	df	Variable	Beta	T	Significance of T	Contribution to R ²	Cumulative R ²
2a	9	22.76	p<.0001	184	WLCS	0.33	4.77	p<.0001	0.11010	0.11010
	10	3.86	p<.0001	172	WLCS Organizational Tenure Age Other Demographics	0.32 0.25 -0.14	4.48 2.74 -1.72	p<.0001 p<.005 p<.05	0.11685 0.03170 0.01576 0.00380	0.11685 0.14855 0.16431 0.16811
2b	11	72.61	p<.0001	179	JIT WLCS	0.60 0.17	10.34 2.99	p<.0001 p<.005	0.42037 0.02754	0.42037 0.44791
	12	16.98	p<.0001	168	JIT WLCS Organizational Tenure Income Other Demographics	0.61 0.16 0.21 -0.19	10.41 2.74 2.96 -2.60	p<.0001 p<.05 p<.05 p<.05	0.42037 0.02754 0.02007 0.01523 0.01952	0.42037 0.44791 0.46798 0.48321 0.50273
13*	13*	48.15	p<.0001	178	JIT WLCS WLCSxJIT	0.60 0.17 -0.01	10.32 2.96 -0.14	p<.0001 p<.005 non sig.	0.42037 0.02754 0.00006	0.42037 0.44791 0.44797
		15.36	p<.0001	167	JIT WLCS WLCSxJIT Organizational Tenure Income Other Demographics	0.61 0.16 -0.02 0.21 -0.19	10.36 2.70 -0.28 2.96 -2.56	p<.0001 p<.05 non sig. p<.005 p<.05	0.42037 0.02754 0.00006 0.02073 0.01509 0.01918	0.42037 0.44791 0.44797 0.46870 0.48379 0.50297

Table 6: Regression Summaries for A Priori Regression Equations (continued)

H	Equation Number	F	Significance of F	df	Variable	Beta	T	Significance of T	Contribution to R ²	Cumulative R ²
3a	15	30.36	p<.0001	185	SSE	-0.38	-5.51	p<.0001	0.14097	0.14097
	16	4.44	p<.0001	173	SSE Other Demographics	-0.37	-5.22	p<.0001	0.14745 0.04327	0.14453 0.18780
3b	17	79.31	p<.0001	179	SSE JIT	-0.30 0.57	-5.42 10.23	p<.0001 p<.0001	0.15967 0.31022	0.15967 0.46982
	18	16.85	p<.0001	168	SSE JIT Other Demographics	-0.28 0.58	-4.80 10.06	p<.0001 p<.0001	0.15967 0.31022 0.03080	0.15967 0.46989 0.50069
19*		53.36	p<.0001	178	SSE	-0.30	-5.35	p<.0001	0.15967	0.15967
					JIT	0.56	10.18	p<.0001	0.31015	0.46982
					SSEXJIT	0.06	1.12	non sig.	0.00370	0.47352
20*		15.18	p<.0001	167	SSE	-0.27	-4.74	p<.0001	0.15967	0.15967
					JIT	0.58	10.01	p<.0001	0.31015	0.46982
					SSEXJIT Other Demographics	0.07	1.20	non sig.	0.00370 0.03141	0.47352 0.50493

Table 6: Regression Summaries for A Priori Regression Equations (continued)

H	Equation Number	F	Significance of F	df	Variable	Beta	T	Significance of T	Contribution to R ²	Cumulative R ²
4	21	47.83	p<.0001	167	JIT	0.50	8.52	p<.0001	0.41572	0.41572
					SSE	-0.24	-4.31	p<.0001	0.08143	0.49715
					SS	-0.16	-2.67	p<.05	0.02583	0.52298
					WLCS	0.11	1.98	non sig.	0.01097	0.53395
	22	17.31	p<.0001	156	JIT	0.54	8.86	p<.0001	0.41572	0.41572
					SSE	-0.22	-3.82	p<.001	0.08143	0.49715
					SS	-0.15	-2.42	p<.05	0.02583	0.52298
					WLCS	0.09	1.60	p<.05	0.01097	0.53395
	23*	23.91	p<.0001	163	Other Demographics				0.03712	0.57107
					JIT	0.52	8.18	p<.0001	0.41572	0.41572
					SSE	-0.24	-4.26	p<.0001	0.08143	0.49715
					SS	-0.15	-2.48	p<.05	0.02583	0.52298
	24*	13.05	p<.0001	152	WLCS	0.11	1.86	non sig.	0.01097	0.53395
					SSExJIT	0.08	1.40	non sig.	0.00383	0.53778
					SSxJIT	-0.05	-0.82	non sig.	0.00204	0.53982
					WLCSxJIT	0.01	0.13	non sig.	0.00008	0.53990
	24*	13.05	p<.0001	152	SSxWLCS	0.00	-0.03	non sig.	0.00000	0.53990
					JIT	9.97	8.52	p<.0001	0.41572	0.41572
					SSE	-0.46	-3.84	p<.001	0.08143	0.49715
					SS	-0.32	-2.23	p<.05	0.02583	0.52298
	24*	13.05	p<.0001	152	WLCS	0.44	1.62	non sig.	0.01097	0.53395
					SSExJIT	0.08	1.62	non sig.	0.00383	0.53778
					SSxJIT	-0.13	-0.829	non sig.	0.00204	0.53982
					WLCSxJIT	-0.03	0.061	non sig.	0.00008	0.53990
	24*	13.05	p<.0001	152	SSxWLCS	0.00	-0.351	non sig.	0.00000	0.53990
					Other Demographics				0.03893	0.57883

Table 6: Regression Summaries for A Priori Regression Equations (continued)

H	Equation Number	F	Significance of F	df	Variable	Beta	T	Significance of T	Contribution to R ²	Cumulative R ²
4	25*	21.58	p<.0001	162	JIT	0.53	8.32	p<.0001	0.41572	0.41572
					SSE	-0.25	-4.38	p<.0001	0.08143	0.49715
					SS	-0.15	-2.39	p<.05	0.02490	0.52298
					WLCS	0.16	2.27	p<.05	0.01082	0.53395
					SSEXJIT	0.10	1.69	non sig.	0.00173	0.53778
					SSxJIT	-0.07	-1.08	non sig.	0.00436	0.53982
					WLCSxJIT	-0.03	-0.41	non sig.	0.00002	0.53990
					SSxWLCS	0.00	-0.07	non sig.	0.00000	0.53990
					SSxWLCSxJIT	0.10	1.38	non sig.	0.00533	0.54523
	26*	12.55	p<.0001	151	JIT	0.57	8.71	p<.0001	0.41572	0.41572
					SSE	-0.24	-4.006	p<.001	0.08143	0.49715
					SS	-0.14	-2.23	p<.05	0.02490	0.52298
					WLCS	0.15	2.155	p<.05	0.01082	0.53395
					SSEXJIT	0.12	1.976	non sig.	0.00173	0.53778
					SSxJIT	-0.06	-0.979	non sig.	0.00436	0.53982
					WLCSxJIT	-0.03	-0.505	non sig.	0.00002	0.53990
					SSxWLCS	-0.04	-0.533	non sig.	0.00000	0.53990
					SSxWLCSxJIT	0.11	1.577	non sig.	0.00533	0.54523
					Other Demographics				0.02905	0.57428

Notes: 1) SS=Social Support, LC=Locus of Control, SE=Self-Esteem, and JIT=Job-induced Tension

2) An 'x' between variable terms denotes an interaction

3) Organizational Tenure, age, and income are the SPSS variables of YEARSCOR, AGE, and INCOME respectively

4) When not listed separately, the demographic variables are Organizational Tenure (YEARSCOR), Years worked in Current Occupation (YEARSCOC), Number of Coworkers Reporting to an Immediate Supervisor (IMMEDSUP), Gender (SEX), Age (AGE), Education (EDUC), Marital Status (MARITAL), and Income (INCOME).

5) * Marks centered variables as to avoid multicollinearity in transaction terms as described by Jaccard, Turrisi, and Wan (1990).

Chapter 8: Discussion

8.1 Summary of Findings

This study attempted to build on past research by postulating a three-way interaction between social support, work locus of control and job-induced tension. Such a three-way interaction may have been useful in explaining the conflicting results found in previous tests of the social support buffering hypothesis. However, the three-way interaction was not supported, and neither was the social support buffering hypothesis. Rather, it was found that, in some situations, social support had a main effect on burnout. The results associated with the main effects, interactions, and demographic variables in the present study and their implications will be discussed prior to exploring the limitations associated with the present study's findings and suggestions for future research.

8.1.1 Main Effects

In general, main effects for social support, job-induced tension, self-esteem, and work locus of control were supported when these variables were regressed separately against burnout.

However, in a regression that included main effects, two- and three-way interactions (but not demographic variables), it was found that only job-induced tension, social self-esteem, and work locus of control contributed significantly to the regression. In an equation that included demographic variables as well as two- and three-way interactions, only job-induced tension, social self-esteem, work locus of control, social support, and the demographic variable of organizational tenure contributed significantly to the regression.

The main effects were consistent with previous research (Social Support: Davis-Sacks et al., 1985; Burke & Descza, 1986; Deckard et al., 1986; Kahill, 1986; Jackson et al., 1986; McCulloch & O'Brien, 1986; Drory & Shamir, 1988; Burke & Greenglass, 1989a; Himle et al., 1989b; Ross et al., 1989; Job-induced tension: Golembiewski et al., 1986; Work Locus of Control: Glogow, 1986; St-Yves, Freeston, Godbout, Poulin, St-Amand, & Verret, 1989; Wilson & Chiwakata, 1989; Dolan & Renaud, 1992; Self-Esteem: Cherniss, 1980b; Maslach, 1982a).

It should be noted that job-induced tension accounted for 41.6 percent of the variance in the presence of all other main effects, interactions, and demographic variables. The role of job-induced tension as a predictor of burnout is an important one. It would seem that any intervention designed to reduced job-induced tension in the workplace would likely reduce burnout. However, the portion of variance accounted for by job-induced tension should be interpreted with caution. The current study used a hierarchical model of regression in which the variables of primary interest were entered into the regression before the control variables. In this method of regression, the primary variables of interest may seem to account for a larger portion of the variance than they should (Bausell, 1986).

Since the construct of job-induced tension has been defined as the extent to which individuals are "'bothered' by role characteristics, including ambiguity and conflict" (Bateman & Strasser, 1983, p. 439), any intervention should focus on changing the degree to which individuals are 'bothered' by stress-inducing role characteristics. However, any suggestions for interventions are tentative, since causal relationship between job-induced tension and burnout were not determined by the present study.

As previously mentioned, the current study used a public service sample. It is typically thought that the public service is plagued by inadequate resources and

bureaucracy (Lee & Ashforth, 1993b). These characteristics seem to illustrate role stress (Lee & Ashforth, 1993b) or job-induced tension. Recently, Lee and Ashforth (1993a; 1993b) suggested that role stress (or job-induced tension) is an important part of a revised model of burnout based upon Leiter's model. Unfortunately, the present study's finding that job-induced tension is an important predictor of burnout is not longitudinal in nature. Had the current study been longitudinal, an appropriate and timely test of Lee and Ashforth's (1993a; and 1993b) revisions to the Leiter model could have been performed. Again, no causal inferences may be made about the job-induced tension - burnout relationship.

8.1.2 Interactions

There were no significant two-way interactions (e.g., social support x job-induced tension, work locus of control x job-induced tension, self-esteem x job-induced tension, or social support x work locus of control). Thus, the present study did not find a buffering effect of social support between job-induced tension and burnout.

However, the present study found a main effect (in some regressions) for social support. Cohen and Wills (1985) suggest that the *type* of social support measure may influence the presence or absence of a buffering effect. Cohen and Wills (1985) suggest that:

evidence for a buffering model is found when the social support measure assesses the perceived availability of interpersonal resources that are responsive to the needs elicited by stressful events. Evidence for a main effect model is found when the support measure assesses a person's degree of integration in a large social network (p. 310).

It is believed that the social support measure used in the present study assessed the perceived availability of support resources (Caplan et al., 1975). Therefore, a buffering effect would have been expected (Cohen & Wills, 1985), but was not supported by the current study.

Lefcourt et al. (1984) suggested that since social support may or may not have a consistent buffering effect on stress, an individual's locus of control may help to explain the effects of social support on stress. However, the current study did not support either a work locus of control x job-induced tension or a social support x work locus of control interaction.

Nevertheless, a main effect for work locus of control was generally found. When work locus of control was studied in conjunction with variables such as job-induced tension, social support, self-esteem, and the demographic variables, the effect accounted for between 1.082 and 2.754 percent of the variance. Thus, in the present study, work locus of control did not seem to have the predicted interaction effects. As predicted (Rosse et al., 1991), there was no indication that self-esteem buffered the relationship between job-induced tension and burnout in the present study.

The three-way interaction (social support x work locus of control x job-induced tension) was not significant. Cummins (1988) and Felsten and Wilcox (1992) had suggested that social support, locus of control and stress are related. Indeed, social support and job-induced tension were significantly correlated ($r = -0.2839$, $p < .001$), as were social support and work locus of control ($r = -0.2878$, $p < .001$), and job-induced tension and work locus of control ($r = 0.3132$, $p < .001$). However, these relationships were not found to have a buffering (via two-way) or other (via a three-way interaction) effect when in a regression model. Thus, the present study did not succeed in clarifying the inconsistent findings on the stress-buffering hypothesis.

8.1.3 Demographic Variables

Organizational tenure, income, age and marital status were the only significant demographic variables. Contrary to previous research (e.g., Maslach, 1982a), organizational tenure is positively associated with burnout. Specifically, the longer an

individual remains within the organization, there is an increased possibility that the individual will have a higher burnout score. Maslach (1982a) suggested that more experienced workers would likely have better developed coping strategies than less experienced workers. Thus, the more experienced a worker is, the lower the burnout score (Maslach, 1982a). Although the current study used a public-sector sample during a time when budget and job cutbacks were prevalent, it is not possible to determine if these additional constraints on worker resources may have caused the coping strategies of more experienced workers to be less effective.

Income level as reported by respondents in the current study were significantly and negatively associated with burnout in several of the study's regressions. In general, this means that as an individual's salary level increased, the more likely that they would have a lower burnout score. Friesen and Sarros (1989) found a similar effect in that an individual's *satisfaction* with their salary and benefits was negatively associated with burnout and the MBI's subscales. However, Friesen and Sarros (1989) did not offer any explanation of this effect. It may be possible that increases in income levels, although possibly reflecting increased responsibility, may also indicate decreased recipient-worker interactions (i.e., more supervisory responsibilities and less client-related responsibilities). It is thought that recipient-worker interactions are a main factor in causing burnout (Maslach & Jackson, 1981b). In addition, it may be possible that individuals working for lower incomes may be working hard, yet not advancing in their careers, thus creating higher levels of burnout in the lower income ranges.

Age was significantly and negatively associated with burnout in some of the present study's regressions. Thus, this would mean, in part, as a respondent's age increased, their burnout score was likely to decrease. Lee and Ashforth (1991) found that age was negatively associated with burnout, and negatively related to the burnout

dimensions of emotional exhaustion and depersonalization. However, Lee and Ashforth (1991) did not offer any suggestions about the implications of such an age-burnout relationship. Seltzer et al. (1989) also found that an individual's age was negatively associated with burnout. However, Seltzer et al. (1989) did not find a significant age-burnout relationship.

Maslach and Jackson (1981b) suggested that burnout scores may decrease with age because older individuals "may be those who survived the early stresses of their job and [have] done well in their career" (p. 111). This was based on Maslach and Jackson's (1981b) belief that burnout is most likely to occur in the early stage of an individual's career. This explanation conflicts with the present study's finding that organizational tenure is positively associated with burnout. It is assumed that organizational tenure would be positively correlated with age, and this is confirmed by the present study ($r=0.43$, $p < .001$). Cherniss (1992) did point out that "early career burnout does not seem to lead to any significant, negative, long-term consequences" (p. 1). Thus, there are differing viewpoints on the relationship between age and burnout. The present study is unable to clarify this relationship further.

Marital status (not-married versus married) was a significant demographic variable. However, a specific explanation for its effect may not be given. The effect may be due to social support received from spouses, marital satisfaction, or other reason. However, it is not possible to tell if non-married individuals had access to similar structures through other relationships.

Such demographics as organizational tenure and age may be important moderators in understanding the effects of various stressors over time. For example, Lee & Ashforth (1993a; 1993b) used demographics such as organizational tenure and age to compare the 'goodness of fit' of the Leiter and Golembiewski models.

8.2 Limitations

Several limitations of the current study will be discussed. For example, there may be limitations caused by: 1) multicollinearity; 2) common method variance; 3) interactions; 4) the cross-sectional nature of the study; and 5) survey response rate.

8.2.1 Problems of Multicollinearity

Multicollinearity amongst the independent variables may explain some of the results. However, the Berry-Feldman technique (Berry & Feldman, 1985) suggests that multicollinearity is not significant if, when the independent variables are regressed against one another, the R squared is less than point seven. Indeed, the technique showed that multicollinearity in the current study was not an issue.

8.2.2 Common Method Variance

The current study used only self-report data. It has been suggested that common method variance may, in part, explain some of the results (e.g., Spector, 1987; Lee & Ashforth, 1993a). Common method variance "is an artifact of measurement that biases results when relations are explored among constructs measured by the same method" (Spector, 1987, p. 438). Spector (1987) concluded that "properly developed instruments of the type studied here [i.e., industrial/ organizational scales] are resistant to the method variance problem" (p. 438).

8.2.3 Interactions

The centering transformation used in regression models that included interaction terms in the present study conformed to Jaccard et al.'s (1990) expectation that such a transformation will not compromise the analysis. In fact, centering variables used in

interaction terms in a regression reduces correlations (i.e., multicollinearity) between the interaction term and its components (Jaccard et al., 1990).

Two- and three-way interactions hypothesized by the present study were not significant. Jaccard et al. (1990) suggested that:

If a given effect is predicted by a strong theory, but it fails to manifest itself in the data via a statistically significant regression coefficient, then it is probably best to include the relevant term in the overall equation. Although there may be a slight loss in statistical power, the gain in the quality of the coefficient estimates usually will be worthwhile (p. 41).

Jaccard et al. (1991) also suggest that eliminating nonsignificant interaction terms from further analysis in specific study may reflect a Type II error. In addition, the nonsignificance of the interaction may be due to low statistical power. Therefore, no interaction terms were dropped from the analysis.

8.2.4 Cross-Sectional Studies

Cross-sectional studies gather data from a small section of time. As mention earlier, a longitudinal study would have provided a timely test of Lee and Ashforth's (1993a; and 1993b) revisions to the Leiter model. However, a cross-sectional approach is useful when a researcher is exploring an explanation to an unsolved dilemma (Emory & Cooper, 1991). For example, the current study was exploring the possibility of a three-way interaction between social support, work locus of control and job-induced tension that may have helped to explain the inconsistent relationships between these variables.

8.2.5 Survey Response Rate

One of the disadvantages with using mail surveys is how to interpret nonresponse (Emory & Cooper, 1991). Emory and Cooper (1991) suggest that individuals who do respond to mail surveys tend to be better educated, more interested

in the topic addressed by the survey, typically respond to surveys, and may have more extreme viewpoints. The current study's response rate suggested that there were a large proportion of nonrespondents (approximately 80 percent). Emory and Cooper (1991) assert that "we usually know nothing about how those who answer might differ from those who do not answer" (p. 333).

Dillman (1978) suggests that nonresponse may be a function of factors that are not related to the content of the mail survey. For example, Dillman suggested the following:

The questionnaire never reached its destination, because a wrong address and a postage rate did not provide for its return to sender.

The questionnaire arrived at the prospective respondent's address, but was discarded without being opened because it resembled 'junk' mail.

The envelope was opened, but, because there were no instructions about which member of the household should respond, the questionnaire was never filled out.

It was clear who should complete the questionnaire, but another person opened the letter and failed to bring it to the right person's attention.

The desired person received the questionnaire, but because he or she found no convincing explanation about why it should be completed, it was thrown away.

The prospective respondent decided to fill out the questionnaire, but temporarily laid it aside and just never got back to it.

The questionnaire was filled out, thoughtfully and completely, but the return address [business reply mail envelope] was misplaced, and the prospective respondent did not know to whom it should be returned (Dillman, 1978, pp. 160-161).

Last, the mail survey format used in the current study may not have been able to examine those who were extremely burned out. These extremely affected individuals may have left the public service, and were no longer members of the union. Thus, the mail survey instrument used would be unable to elicit responses from these individuals.

8.2.6 Other Limitations

The rule-of-thumb that suggests 10 to 15 respondents for each variable in a regression equation to achieve statistical power was satisfied. However, for the larger regression equations in Hypothesis 4 were at the lower end of the suggested range due to missing cases. Nevertheless, sufficient sample size was reached to achieve power.

On the other hand, steps to increase the response rate of the current study could have been pursued. For example, reminder notices may increase the response rate of a mail survey by an additional 10 percent (Dillman, 1978).

8.3 Suggestions for Future Research

The current study suggests that job-induced tension is an important variable in the study of burnout. This is consistent with recent research by Lee and Ashforth (1993a; 1993b). However, a longitudinal study that attempts to replicate Lee and Ashforth's revisions (1993a; 1993b) to Leiter's model is required. In addition, further replications of Lee and Ashforth's claim that Leiter's model has a better fit than Golembiewski's phase model with the stress-strain-coping paradigm is required.

During a time of government financial restraint, workers in public service positions must constantly do more with less. Several comments on the returned questionnaires suggested that since researchers know that there is a problem, resources would be better applied in finding effective solutions to burnout. Thus, research on interventions that either prevent or reduce the amount of burnout in public service settings is required.

Appendix A: Sample Items for The Maslach Burnout Inventory

Directions: The purpose of this survey is to discover how various persons in the human services or helping professions view their jobs and the people with whom they work closely. Because persons in a wide variety of occupations will answer this survey, it uses the term *recipients* to refer to the people for whom you provide service, care, treatment, or instruction. When answering this survey please think of these people as recipients of the service you provide, even though you may use another term in your work.

Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, circle the "0" (zero) after the statement. If you have had this feeling, indicate how often you feel it by circling the number (from 1 to 6) that best describes how frequently you feel that way.

Example:

HOW OFTEN:	0	1	2	3	4	5	6
	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day

I. Depersonalization

5. I feel I treat some recipients as if they were impersonal objects. ----- 0 1 2 3 4 5 6

II. Personal Accomplishment

9. I feel I'm positively influencing other people's lives through my work. ----- 0 1 2 3 4 5 6

III. Emotional Exhaustion

20. I feel like I'm at the end of my rope. ----- 0 1 2 3 4 5 6

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Appendix B: Work Locus of Control Scale

- _____ *1. A job is what you make of it.
- _____ *2. On most jobs, people can pretty much accomplish whatever they set out to accomplish.
- _____ *3. If you know what you want out of a job, you can find a job that gives it to you.
- _____ *4. If employees are unhappy with a decision made by their boss, they should do something about it.
- _____ 5. Getting the job you want is mostly a matter of luck.
- _____ 6. Making money is primarily a matter of good fortune.
- _____ *7. Most people are capable of doing their jobs well if they make the effort.
- _____ 8. In order to get a really good job you need to have family members or friends in high places.
- _____ 9. Promotions are usually a matter of good fortune.
- _____ 10. When it comes to landing a really good job, who you know is more important than what you know.
- _____ *11. Promotions are given to employees who perform well on the job.
- _____ 12. To make a lot of money you have to know the right people.
- _____ 13. It takes a lot of luck to be an outstanding employee on most jobs.
- _____ *14. People who perform their jobs well usually get rewarded for it.
- _____ *15. Most employees have more influence on their supervisors than they think they do.
- _____ 16. The main difference between people who make a lot of money and people who make a little money is luck.

*These items should be reverse scored.

Note: response choices are: 1=disagree very much, 2=disagree moderately, 3=disagree slightly, 4=agree slightly, 5=agree moderately, 6=agree very much. (Spector, 1988, p. 340).

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Appendix C: Social Self-Esteem Inventory

Please place a number in the space provided beside each of the statements below according to the following scale:

Completely unlike me 1 2 3 4 5 6 Exactly like me

Thus, for example, if you felt that a statement described you exactly, you would place a '6' beside that item. If the statement was completely UNlike you, then you would place '1' against the item. The numbers '2' through '5' represent varying degrees of the concept 'like you'. Please choose the number that appropriately reflects your similarity to the position expressed in the statement.

- _____ *1. I find it hard to talk to strangers.
- _____ *2. I lack confidence with people.
- _____ 3. I am socially effective.
- _____ 4. I feel confident in social situations.
- _____ 5. I am easy to like.
- _____ 6. I get along well with other people.
- _____ 7. I make friends easily.
- _____ 8. I am lively and witty in social situations.
- _____ *9. When I am with other people I lose self-confidence.
- _____ *10. I find it difficult to make friends.
- _____ *11. I am no good at all from a social standpoint.
- _____ 12. I am a reasonably good conversationalist.
- _____ 13. I am popular with people my own age.
- _____ *14. I am afraid of large parties.
- _____ 15. I truly enjoy myself at social functions.
- _____ *16. I usually say the wrong thing when I talk with people.
- _____ 17. I am confident at parties.
- _____ *18. I am usually unable to think of anything interesting to say to people.
- _____ *19. I am a bore with most people.
- _____ *20. People do not find me interesting.

- _____ *21. I am nervous with people who are not close friends.
- _____ 22. I am quite good at making people feel at ease with me.
- _____ *23. I am more shy than most people.
- _____ 24. I am a friendly person.
- _____ 25. I can hold people's interest easily.
- _____ *26. I don't have much 'personality'.
- _____ 27. I am a lot of fun to be with.
- _____ 28. I am quite content with myself as a person.
- _____ *29. I am quite awkward in social situations.
- _____ 30. I do not feel at ease with other people.

*These items are negatively phrased, and they are scored by subtracting the number placed against them from 7.

(Lawson et al., 1979, p. 809).

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Appendix D: Sample Questionnaire

Human Services Survey

Please read the information sheet before completing this questionnaire

This Human Services Survey is distributed in association with [the public service employees union].

**Please return this questionnaire to:
Faculty of Business Administration
Simon Fraser University
Burnaby, B.C.
V5A 1S6**

Human Services Survey

Because persons in a wide variety of occupations will answer this survey, it uses the term *recipients* to refer to the people for whom you provide service, care, treatment, or instruction. When answering this survey please think of these people as recipients of the service you provide, even though you may use another term in your work.

Section 1

On the following page there are 22 statements of job-related feelings. Please read each statement carefully and decide if you ever feel this way *about your job*. If you *never* had this feeling, circle a "0" (zero) after the statement. If you have had this feeling, indicate *how often* you feel it by circling the number (from 1 to 6) that best describes how frequently you feel that way.

Example:

HOW OFTEN:	0	1	2	3	4	5	6
	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day

Statements: (How **OFTEN** do you experience...)

5. I feel I treat some recipients as if they were
impersonal objects. ----- 0 1 2 3 4 5 6
9. I feel I'm positively influencing other people's
lives through my work. ----- 0 1 2 3 4 5 6
20. I feel like I'm at the end of my rope. ----- 0 1 2 3 4 5 6

You will be using the same statements that you just read for the next section. However, you will now rate each statement on the **intensity** with which you have felt it. Please read each statement carefully and decide if you ever feel this way *about your job*. If you *never* had this feeling, circle a "0" (zero) after the statement. If you have had this feeling, indicate *how strongly* you feel it by circling the number (from 1 to 7) that best describes how strongly you feel it.

Example:

HOW STRONG:	0	1	2	3	4	5	6	7
	Never	Very mild, barely noticeable			Moderate			Major, very strong
5. I feel I treat some recipients as if they were impersonal objects.	0							
9. I feel I'm positively influencing other people's lives through my work.	0							
20. I feel like I'm at the end of my rope.	0							

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Section 2

Please circle a number provided beside each of the statements below according to the following scale:

Disagree	Disagree	Disagree	Agree	Agree	Agree
Very	Moderately	Slightly	Slightly	Moderately	Very
Much					Much
1	2	3	4	5	6

Thus, for example, if you felt that you agreed with a statement very much, you would circle a '6' beside that item. If you disagreed with a statement very much, then you would circle '1' against the item. The numbers '2' through '5' represent varying degrees of disagreement and agreement. Please choose the number that appropriately reflects your disagreement or agreement with each statement.

1. A job is what you make of it. ----- 1 2 3 4 5 6
2. On most jobs, people can pretty
much accomplish whatever they set out to accomplish. ----- 1 2 3 4 5 6
3. If you know what you want out of a job,
you can find a job that gives it to you. ----- 1 2 3 4 5 6
4. If employees are unhappy with a decision made by
their boss, they should do something about it. ----- 1 2 3 4 5 6
5. Getting the job you want is mostly a matter of luck. ----- 1 2 3 4 5 6
6. Making money is primarily a matter of good fortune. ----- 1 2 3 4 5 6
7. Most people are capable of doing their
jobs well if they make the effort. ----- 1 2 3 4 5 6
8. In order to get a really good job you need
to have family members or friends in high places. ----- 1 2 3 4 5 6
9. Promotions are usually a matter of good fortune. ----- 1 2 3 4 5 6
10. When it comes to landing a really good job,
who you know is more important than what you know. ----- 1 2 3 4 5 6

11. Promotions are given to employees who perform well on the job. ----- 1 2 3 4 5 6
12. To make a lot of money you have to know the right people. ----- 1 2 3 4 5 6
13. It takes a lot of luck to be an outstanding employee on most jobs. ----- 1 2 3 4 5 6
14. People who perform their jobs well usually get rewarded for it. ----- 1 2 3 4 5 6
15. Most employees have more influence on their supervisors than they think they do. ----- 1 2 3 4 5 6
16. The main difference between people who make a lot of money and people who make a little money is luck. ----- 1 2 3 4 5 6

Section 3

Please circle a number in the space provided beside each of the statements below according to the following scale:

Completely unlike me 1 2 3 4 5 6 Exactly like me

Thus, for example, if you felt that a statement described you exactly, you would circle a '6' beside that item. If the statement was completely UNlike you, then you would circle '1' beside the item. The numbers '2' through '5' represent varying degrees of the concept 'like you'. Please circle the number that appropriately reflects your similarity to the position expressed in the statement.

1. I find it hard to talk to strangers. ----- 1 2 3 4 5 6
2. I lack confidence with people. ----- 1 2 3 4 5 6
3. I am socially effective. ----- 1 2 3 4 5 6
4. I feel confident in social situations. ----- 1 2 3 4 5 6
5. I am easy to like. ----- 1 2 3 4 5 6
6. I get along well with other people. ----- 1 2 3 4 5 6
7. I make friends easily. ----- 1 2 3 4 5 6
8. I am lively and witty in social situations. ----- 1 2 3 4 5 6
9. When I am with other people I lose self-confidence. ----- 1 2 3 4 5 6

Completely unlike me 1 2 3 4 5 6 Exactly like me

- | | | | | | | |
|---|---|---|---|---|---|---|
| 10. I find it difficult to make friends. ----- | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. I am no good at all from a social standpoint. ----- | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. I am a reasonably good conversationalist. ----- | 1 | 2 | 3 | 4 | 5 | 6 |
| 13. I am popular with people my own age. ----- | 1 | 2 | 3 | 4 | 5 | 6 |
| 14. I am afraid of large parties. ----- | 1 | 2 | 3 | 4 | 5 | 6 |
| 15. I truly enjoy myself at social functions. ----- | 1 | 2 | 3 | 4 | 5 | 6 |
| 16. I usually say the wrong thing when I talk
with people. ----- | 1 | 2 | 3 | 4 | 5 | 6 |
| 17. I am confident at parties. ----- | 1 | 2 | 3 | 4 | 5 | 6 |
| 18. I am usually unable to think of anything
interesting to say to people. ----- | 1 | 2 | 3 | 4 | 5 | 6 |
| 19. I am a bore with most people. ----- | 1 | 2 | 3 | 4 | 5 | 6 |
| 20. People do not find me interesting. ----- | 1 | 2 | 3 | 4 | 5 | 6 |
| 21. I am nervous with people who are not
close friends. ----- | 1 | 2 | 3 | 4 | 5 | 6 |
| 22. I am quite good at making people feel at
ease with me. ----- | 1 | 2 | 3 | 4 | 5 | 6 |
| 23. I am more shy than most people. ----- | 1 | 2 | 3 | 4 | 5 | 6 |
| 24. I am a friendly person. ----- | 1 | 2 | 3 | 4 | 5 | 6 |
| 25. I can hold people's interest easily. ----- | 1 | 2 | 3 | 4 | 5 | 6 |
| 26. I don't have much 'personality'. ----- | 1 | 2 | 3 | 4 | 5 | 6 |
| 27. I am a lot of fun to be with. ----- | 1 | 2 | 3 | 4 | 5 | 6 |
| 28. I am quite content with myself as a person. ----- | 1 | 2 | 3 | 4 | 5 | 6 |
| 29. I am quite awkward in social situations. ----- | 1 | 2 | 3 | 4 | 5 | 6 |
| 30. I do not feel at ease with other people. ----- | 1 | 2 | 3 | 4 | 5 | 6 |

Section 4

Several phrases or words are listed in this section which could be used to describe various individuals in your life (your supervisor and coworkers). For each word or phrase listed, indicate how accurately the scale responses given describe those individuals. Circle the number corresponding to the accuracy level in the column below that individual. For example, if you think that 'friendly' accurately describes your supervisor, you would circle a '4' in the supervisor column for the item, friendly. Use the numbers associated with each of the following accuracy levels:

	Very Accurate Description	Accurate Description	Neither Accurate Nor Inaccurate	Inaccurate Description	Very Inaccurate Description	Does Not Apply												
	5	4	3	2	1	0												
							Your Supervisor					Coworkers						
a. Friendly-----	5	4	3	2	1	0	5	4	3	2	1	0	5	4	3	2	1	0
b. Approachable-----	5	4	3	2	1	0	5	4	3	2	1	0	5	4	3	2	1	0
c. Uncooperative-----	5	4	3	2	1	0	5	4	3	2	1	0	5	4	3	2	1	0
d. Cold-----	5	4	3	2	1	0	5	4	3	2	1	0	5	4	3	2	1	0
e. Loving-----	5	4	3	2	1	0	5	4	3	2	1	0	5	4	3	2	1	0
f. Affectionate-----	5	4	3	2	1	0	5	4	3	2	1	0	5	4	3	2	1	0
g. Unsympathetic-----	5	4	3	2	1	0	5	4	3	2	1	0	5	4	3	2	1	0
h. Understanding-----	5	4	3	2	1	0	5	4	3	2	1	0	5	4	3	2	1	0
i. Makes work life easier-----	5	4	3	2	1	0	5	4	3	2	1	0	5	4	3	2	1	0
j. Difficult to talk with-----	5	4	3	2	1	0	5	4	3	2	1	0	5	4	3	2	1	0
k. Can be relied on when things get tough at work-----	5	4	3	2	1	0	5	4	3	2	1	0	5	4	3	2	1	0
l. Unwilling to listen to personal problems-----	5	4	3	2	1	0	5	4	3	2	1	0	5	4	3	2	1	0
m. Supportive-----	5	4	3	2	1	0	5	4	3	2	1	0	5	4	3	2	1	0

Section 5

Several phrases are listed in this section which could be used to describe various aspects of your job. For each phrase listed, indicate whether the statement is **TRUE** or **FALSE** in describing yourself. Circle the letter **T** for **TRUE** or **F** for **FALSE** beside each phrase. For example, if you think that your job tends to directly affect your health, you would circle a 'T' in the space provided for this phrase.

T for TRUE or F for FALSE

1. My job tends to directly affect my health----- T F
2. I work under a great deal of tension ----- T F
3. I have felt fidgety or nervous as a result of my job----- T F
4. If I had a different job, my health would probably improve ----- T F
5. Problems associated with my job have kept me awake at night ----- T F
6. I have felt nervous before attending meetings in the company----- T F
7. I often "take my job home with me" in the evenings and I think about it
when doing other things ----- T F

Section 6

1. For how many years have you worked in your **current organization**? _____
2. For how many years have you worked in your current occupation? _____
3. If you have had a different career than the one you are currently in, for how many years did you work in the previous occupation? _____
4. How many people report to your immediate supervisor? _____
5. Approximately how many people work in your organization? _____
6. Which government department do you work for? (please do **NOT** indicate your position or work location)

7. Are you female? _____ male? _____

8. Indicate which category best describes your age (in years):

- | | |
|---------------------|----------------|
| a) 19 or less _____ | d) 35-44 _____ |
| b) 20-24 _____ | e) 45-54 _____ |
| c) 25-34 _____ | f) 55-59 _____ |
| | g) 60-65 _____ |

9. Please indicate your highest level of education completed or partially completed:

- a) high school _____
- b) college _____
- c) Bachelors degree _____
- f) Masters or higher _____

10. Please indicate your marital status:

- a) single _____
- b) married _____
- c) separated or divorced _____
- e) widowed _____

11. Please indicate the range that best describes your own income:

- a) 19,999 or under _____
- b) 20,000-24,999 _____
- c) 25,000-29,999 _____
- d) 30,000-39,999 _____
- e) 40,000-49,999 _____
- f) 50,000 or more _____

Thank you! If there is anything else that you would like to tell us, please use the back page for that purpose or you may send a separate letter. Also, in particular any items that you think may help us to understand what Human Services Employees think about their jobs will be appreciated.

Your contribution to this effort is greatly appreciated.

Appendix E: Cover Letter and Information Sheet

April 15, 1993

Dear [public service employees union] Member

I am writing to ask for your assistance and participation in a study of the job experiences of public servants. You are one of a thousand public servants we have identified as a representative sample of this important occupational group. We would greatly appreciate your assistance in helping us to better understand the influence of your job, employment conditions, and personal factors on how you view your job and the people with whom you work closely.

Your individual responses are confidential and your anonymity assured. Please read the information sheet on the *BACK* of this letter.

The findings of this study will be shared with the [public service employees union].

Please take 15 to 30 minutes to complete the enclosed Human Services Survey. Do not write your name on the questionnaire. A postage paid return envelope has been provided for your convenience.

Should you have a question or need assistance with the survey, feel free to contact me. Please be sure to have the survey in the mail by May 14. Your participation in this study is appreciated.

Sincerely,

Scott D. J. Graham
Project Coordinator
(604- -)

Enclosures

INFORMATION SHEET and INFORMED CONSENT

TO PARTICIPATE IN A RESEARCH PROJECT

The purpose of this survey is to discover how various people in the human services or helping professions view their jobs and the people with whom they work closely. You are being asked to fill out a questionnaire that will help us better understand these relationships. This information will help organizations better understand and care for their employees. The questionnaires are brief, and will take approximately 20 minutes to complete. Since some questions deal with your thoughts, feelings and emotions, there may be some questions that you feel uncomfortable answering. You may choose not to answer these questions, and you may withdraw from the survey at any time. Unanswered questions or withdrawal from the survey will not count against you.

All information provided will remain confidential. Safe destruction of the information given in the survey is assured after the research is completed. Personal information will not be associated with your answers.

Please mail this form and the attached questionnaires in the enclosed envelope by 14 May, 1993.

Note: The University and those conducting this project subscribe to the ethical conduct of research and to the protection at all times of the interests, comfort, and safety of subjects. This form and the information it contains are given to you for your own protection and full understanding of the procedures, risks and benefits involved. Your signature on this form will signify that you have received the document described below regarding this project, that you have received an adequate opportunity to consider the information in the document, and that you voluntarily agree to participate in the project.

Having been asked by Scott Graham of the Faculty of Business Administration of Simon Fraser University to participate in a research project, I have read the procedures specified above.

I understand the procedures to be used in this project and the personal risks to me in taking part. I understand that I may withdraw my participation in this project at any time. I also understand that I may register any complaint I might have about the experiment with the chief researcher named above or with the Dean, S. Shapiro, Faculty of Business Administration, Simon Fraser University, Burnaby, B.C., V5A 1S6.

Copies of the results of this study, upon its completion may be obtained by contacting Scott Graham at 469-2703, or by writing to Scott Graham, Faculty of Business Administration, Simon Fraser University, Burnaby, B.C., V5A 1S6. I agree to participate by completing the questionnaires as described in the document above, during the period of April 15, 1993 to May 14, 1993.

NAME (Please print): _____

ADDRESS: _____

Signature: _____ Date: _____

Once signed, a copy of this form and a subject feedback form should be provided to you.

Appendix F: SPSS/PC+ Commands

DATA LIST FIXED /

CASE 1-3 MBIFEE1 5 MBIFEE2 7 MBIFEE3 9 MBIFPA4 11 MBIFD5 13 MBIFEE6 15
 MBIFPA7 17 MBIFEE8 19 MBIFPA9 21 MBIFD10 23 MBIFD11 25 MBIFPA12 27
 MBIFEE13 29 MBIFEE14 31 MBIFD15 33 MBIFEE16 35 MBIFPA17 37 MBIFPA18 39
 MBIFPA19 41 MBIFEE20 43 MBIFPA21 45 MBIFD22 47 MBIEE1 49 MBIEE2 51
 MBIEE3 53 MBIPA4 55 MBIID5 57 MBIEE6 59 MBIPA7 61 MBIEE8 63 MBIPA9 65
 MBIID10 67 MBIID11 69 MBIPA12 71 MBIEE13 73 MBIEE14 75 MBIID15 77
 MBIEE16 79/
 MBIPA17 1 MBIPA18 3 MBIPA19 5 MBIEE20 7 MBIPA21 9 MBIID22 11 WLCr1 13
 WLCr2 15 WLCr3 17 WLCr4 19 WLC5 21 WLC6 23 WLCr7 25 WLC8 27 WLC9 29 WLC10 31
 WLCr11 33 WLC12 35 WLC13 37 WLCr14 39 WLCr15 41 WLC16 43 SEr1 45 SEr2 47
 SE3 49 SE4 51 SE5 53 SE6 55 SE7 57 SE8 59 SEr9 61 SEr10 63 SEr11 65 SE12 67
 SE13 69 SEr14 71 SE15 73 SEr16 75 SE17 77 SEr18 79/
 SEr19 1 SEr20 3 SEr21 5 SE22 7 SEr23 9 SE24 11 SE25 13 SEr26 15 SE27 17
 SE28 19 SEr29 21 SE30 23 SSSA 25 SSSB 27 SSSrC 29 SSSrD 31 SSSE 33 SSSF 35
 SSSrG 37 SSSH 39 SSSI 41 SSSrJ 43 SSSK 45 SSSrL 47 SSSM 49 SSCA 51 SSCB 53
 SSCrC 55 SSCrD 57 SSCE 59 SSCF 61 SSCrG 63 SSCH 65 SSCI 67 SSCrJ 69 SSCK 71
 SSCrL 73 SSCM 75 JIT1 77 JIT2 79/
 JIT3 1 JIT4 3 JIT5 5 JIT6 7 JIT7 9 YEARSOR 11-13 YEARSCOC 15-17
 YEARSPRV 19-21 IMMEDSUP 23-24 NUMORG 26-29 MINISTRY 31-32 SEX 34 AGE 36
 EDUC 38 MARITAL 40 INCOME 42.

VARIABLE LABELS

CASE 'Case ID Number' MBIFEE1 'MBI Frequency Scale Q#1' MBIFEE2
 'MBI Frequency Scale Q#2' MBIFEE3 'MBI Frequency Scale Q#3' MBIFPA4
 'MBI Frequency Scale Q#4' MBIFD5 'MBI Frequency Scale Q#5' MBIFEE6
 'MBI Frequency Scale Q#6' MBIFPA7 'MBI Frequency Scale Q#7' MBIFEE8
 'MBI Frequency Scale #8' MBIFPA9 'MBI Frequency Scale Q#9' MBIFD10
 'MBI Frequency Scale Q#10' MBIFD11 'MBI Frequency Scale Q#11' MBIFPA12
 'MBI Frequency Scale Q#12' MBIFEE13 'MBI Frequency Scale Q#13' MBIFEE14
 'MBI Frequency Scale Q#14' MBIFD15 'MBI Frequency Scale Q#15' MBIFEE16
 'MBI Frequency Scale Q#16' MBIFPA17 'MBI Frequency Scale Q#17' MBIFPA18
 'MBI Frequency Scale Q#18' MBIFPA19 'MBI Frequency Scale Q#19' MBIFEE20
 'MBI Frequency Scale Q#20' MBIFPA21 'MBI Frequency Scale Q#21' MBIFD22
 'MBI Frequency Scale Q#22' MBIEE1 'MBI Intensity Scale Q#1' MBIEE2
 'MBI Intensity Scale Q#2' MBIEE3 'MBI Intensity Scale Q#3' MBIPA4
 'MBI Intensity Scale Q#4' MBIID5 'MBI Intensity Scale Q#5' MBIEE6
 'MBI Intensity Scale Q#6' MBIPA7 'MBI Intensity Scale Q#7' MBIEE8
 'MBI Intensity Scale Q#8' MBIPA9 'MBI Intensity Scale Q#9' MBIID10
 'MBI Intensity Scale Q#10' MBIID11 'MBI Intensity Scale Q#11' MBIPA12
 'MBI Intensity Scale Q#12' MBIEE13 'MBI Intensity Scale Q#13' MBIEE14
 'MBI Intensity Scale Q#14' MBIID15 'MBI Intensity Scale Q#15' MBIEE16
 'MBI Intensity Scale Q#16' MBIPA17 'MBI Intensity Scale Q#17' MBIPA18
 'MBI Intensity Scale Q#18' MBIPA19 'MBI Intensity Scale Q#19' MBIEE20
 'MBI Intensity Scale Q#20' MBIPA21 'MBI Intensity Scale Q#21' MBIID22
 'MBI Intensity Scale Q#22' WLCr1 'Locus Q#1 Reversed' WLCr2
 'Locus Q#2 Reversed' WLCr3 'Locus Q#3 Reversed' WLCr4 'Locus Q#4 Reversed'
 WLCr5 'Locus #5' WLCr6 'Locus Q#6' WLCr7 'Locus Q#7 Reversed' WLCr8 'Locus Q#8'
 WLCr9 'Locus Q#9' WLCr10 'Locus Q#10' WLCr11 'Locus Q#11 Reversed' WLCr12
 'Locus Q#12' WLCr13 'Locus Q#13' WLCr14 'Locus Q#14 Reversed' WLCr15
 'Locus Q#15 Reversed' WLCr16 'Locus Q#16' SEr1 'Self Esteem Q#1 Reversed' SEr2

'Self Esteem Q#2 Reversed' SE3 'Self Esteem Q#3' SE4 'Self Esteem Q#4' SE5
 'Self Esteem Q#5' SE6 'Self Esteem Q#6' SE7 'Self Esteem Q#7' SE8
 'Self Esteem Q#8' SEr9 'Self Esteem Q#9 Reversed' SEr10
 'Self Esteem Q#10 Reversed' SEr11 'Self Esteem Q#11 Reversed' SE12
 'Self Esteem Q#12' SE13 'Self Esteem Q#13' SEr14 'Self Esteem Q#14 Reversed'
 SE15 'Self Esteem Q#15' SEr16 'Self Esteem Q#16 Reversed' SE17
 'Self Esteem Q#17' SEr18 'Self Esteem Q#18 Reversed' SEr19
 'Self Esteem Q#19 Reversed' SEr20 'Self Esteem Q#20 Reversed' SEr21
 'Self Esteem Q#21 Reversed' SE22 'Self Esteem Q#22' SEr23
 'Self Esteem Q#23 Reversed' SE24 'Self Esteem Q#24' SE25 'Self Esteem Q#25'
 SEr26 'Self Esteem Q#26 Reversed' SE27 'Self Esteem Q#27' SE28
 'Self Esteem Q#28' SEr29 'Self Esteem Q#29 Reversed' SE30 'Self Esteem Q#30'
 SSSA 'Supervisor Support Q#A' SSSB 'Supervisor Support Q#B' SSSrC
 'Supervisor Support Q#C Reversed' SSSrD 'Supervisor Support Q#D Reversed'
 SSSE 'Supervisor Support Q#E' SSSF 'Supervisor Support Q#F' SSSrG
 'Supervisor Support Q#G Reversed' SSSH 'Supervisor Support Q#H' SSSI
 'Supervisor Support Q#I' SSSrJ 'Supervisor Support Q#J Reversed' SSSK
 'Supervisor Support Q#K' SSSrL 'Supervisor Support Q#L Reversed' SSSM
 'Supervisor Support Q#M' SSCA 'Coworker Support Q#A' SSCB
 'Coworker Support Q#B' SSCrC 'Coworker Support Q#C Reversed' SSCrD
 'Coworker Support Q#D Reversed' SSCE 'Coworker Support Q#E' SSCF
 'Coworker Support Q#F' SSCrG 'Coworker Support Q#G Reversed' SSCH
 'Coworker Support Q#H' SSCI 'Coworker Support Q#I' SSCrJ
 'Coworker Support Q#J Reversed' SSCK 'Coworker Support Q#K' SSCrL
 'Coworker Support Q#L Reversed' SSCM 'Coworker Support Q#M' JIT1
 'Job Induced Tension Q#1' JIT2 'Job Induced Tension Q#2' JIT3
 'Job Induced Tension Q#3' JIT4 'Job Induced Tension Q#4' JIT5
 'Job Induced Tension Q#5' JIT6 'Job Induced Tension Q#6' JIT7
 'Job Induced Tension Q#7' YEARSCOR 'Years Worked in Current Organization'
 YEARSCOC 'Years Worked in Current OCCUPATION' YEARSPRV
 'Years Worked in Previous Occupation' IMMEDSUP
 'Number Reporting to Immed Supervisor' NUMORG 'Total People in Organization'
 MINISTRY 'Ministry SS Works For' SEX 'Gender of Subject' AGE 'Subject Age'
 EDUC 'SS Education Level' MARITAL 'SS Marital Status' INCOME 'SS Income'.

FORMATS YEARSCOR YEARSCOC YEARSPRV (F3.1).

VALUE LABELS MBIFEE1 TO MBIFD22 0 'Never' 1 'A few times a year or less' 2
 'Once a month or less' 3 'A few times a month' 4 'Once a week' 5
 'A few times a week' 6 'Every day'
 /MBIIEE1 TO MBIID22 0 'Never' 1 'Very mild, barely noticeable' 4 'Moderate'
 7 'Major, very strong'
 /WLCr1 TO WLC16 1 'Disagree very much' 2 'Disagree moderately' 3
 'Disagree slightly' 4 'Agree slightly' 5 'Agree moderately' 6
 'Agree very much'
 /SEr1 TO SE30 1 'Completely unlike me' 6 'Exactly like me'
 /SSSA TO SSCM 5 'Very accurate description' 4 'Accurate description' 3
 'Neither accurate nor inaccurate' 2 'Inaccurate description' 1
 'Very inaccurate description' 0 'Does not apply'
 /JIT1 TO JIT7 0 'True' 1 'False'
 /SEX 0 'female' 1 'male'
 /AGE 0 '19 or less' 1 '20-24' 2 '25-34' 3 '35-44' 4 '45-54' 5 '55-59' 6 '60-65'
 /EDUC 0 'high school' 1 'college' 2 'Bachelors degree' 3 'Masters degree'

/MARITAL 0 'Single' 1 'Married' 2 'Separated or divorced' 3 'widowed'
 /INCOME 0 '19,999 or under' 1 '20,000-24,999' 2 '25,000-29,999' 3
 '30,000-39,999' 4 '40,000-49,999' 5 '50,000 or more'.

MISSING VALUE MARITAL MBIFEE1 TO JIT7 AGE EDUC MARITAL INCOME (9) NUMORG
 (9999)

MINISTRY (99) YEARSPRV YEARSCOC YEARSCOR (999).

BEGIN DATA.

END DATA.

* The following recode statements recode items that are reverse scored
 * so that they are indeed reverse scored.

COMPUTE YEARSCOR = YEARSCOR/10.

COMPUTE YEARSCOC = YEARSCOC/10.

COMPUTE YEARSPRV = YEARSPRV/10.

RECODE MBIFPA4 MBIFPA7 MBIFPA9 MBIFPA12 MBIFPA17 MBIFPA18 MBIFPA19 MBIFPA21
 (0=6) (1=5) (2=4) (3=3) (4=2) (5=1) (6=0).

RECODE MBIIPA4 MBIIPA7 MBIIPA9 MBIIPA12 MBIIPA17 MBIIPA18 MBIIPA19 MBIIPA21
 (0=7) (1=6) (2=5) (3=4) (4=3) (5=2) (6=1) (7=0).

RECODE WLCr1 WLCr2 WLCr3 WLCr4 WLCr7 WLCr11 WLCr14 WLCr15 (1=6) (2=5) (3=4)
 (4=3) (5=2) (6=1).

RECODE SEr1 SEr2 SEr9 SEr10 SEr11 SEr14 SEr16 SEr18 SEr19 SEr20 SEr21 SEr23
 SEr26 SEr29 (1=6) (2=5) (3=4) (4=3) (5=2) (6=1).

RECODE SSSrC SSSrD SSSrG SSSrJ SSSrL SSCrC SSCrD SSCrG SSCrJ SSCrL (5=0)
 (4=1) (3=2) (2=3) (1=4) (0=5).

RECODE JIT1 JIT2 JIT3 JIT4 JIT5 JIT6 JIT7 (0=1) (1=0).

RECODE MARITAL (2=0) (3=0).

*Here, items are summed to get total scores for the frequency and intensity
 *scales of the MBI. These total scores are then summed to obtain an overall
 *score on the MBI (MBITOTAL). WCLS is the Work Locus of Control Scale's
 *overall score. SSE is the overall self esteem score. SSS is the overall
 *supervisory social support score, and ssc is the overall coworker social
 *support score. SS is thus the overall social support score (supervisory
 *and coworker support added together). JIT is the overall job-induced tension
 *score.

COMPUTE MBIFDEPR = (MBIFD5 + MBIFD10 + MBIFD11 + MBIFD15 + MBIFD22).

COMPUTE MBIIDEPR = (MBIID5 + MBIID10 + MBIID11 + MBIID15 + MBIID22).

COMPUTE MBIPA = (MBIFPA4 + MBIFPA7 + MBIFPA9 + MBIFPA12 + MBIFPA17 + MBIFPA18 + MBIFPA19 + MBIFPA21).

COMPUTE MBIFPA = (MBIPA4 + MBIPA7 + MBIPA9 + MBIPA12 + MBIPA17 + MBIPA18 + MBIPA19 + MBIPA21).

COMPUTE MBIFEE = (MBIFEE1 + MBIFEE2 + MBIFEE3 + MBIFEE6 + MBIFEE8 + MBIFEE13 + MBIFEE14 + MBIFEE16 + MBIFEE20).

COMPUTE MBIIEE = (MBIIEE1 + MBIIEE2 + MBIIEE3 + MBIIEE6 + MBIIEE8 + MBIIEE13 + MBIIEE14 + MBIIEE16 + MBIIEE20).

COMPUTE MBIFREQ = (MBIFEE1 + MBIFEE2 + MBIFEE3 + MBIFPA4 + MBIFD5 + MBIFEE6 + MBIFPA7 + MBIFEE8 + MBIFPA9 + MBIFD10 + MBIFD11 + MBIFPA12 + MBIFEE13 + MBIFEE14 + MBIFD15 + MBIFEE16 + MBIFPA17 + MBIFPA18 + MBIFPA19 + MBIFEE20 + MBIFPA21 + MBIFD22).

COMPUTE MBIINTNS = (MBIIEE1 + MBIIEE2 + MBIIEE3 + MBIPA4 + MBIID5 + MBIIEE6 + MBIPA7 + MBIIEE8 + MBIPA9 + MBIID10 + MBIID11 + MBIPA12 + MBIIEE13 + MBIIEE14 + MBIID15 + MBIIEE16 + MBIPA17 + MBIPA18 + MBIPA19 + MBIIEE20 + MBIPA21 + MBIID22).

COMPUTE MBITOTAL = MBIFREQ + MBIINTNS.

COMPUTE WLCS = (WLCr1 + WLCr2 + WLCr3 + WLCr4 + WLC5 + WLC6 + WLCr7 + WLC8 + WLC9 + WLC10 + WLCr11 + WLC12 + WLC13 + WLCr14 + WLCr15 + WLC16).

COMPUTE SSE = (SEr1 + SEr2 + SE3 + SE4 + SE5 + SE6 + SE7 + SE8 + SEr9 + SEr10 + SEr11 + SE12 + SE13 + SEr14 + SE15 + SEr16 + SE17 + SEr18 + SEr19 + SEr20 + SEr21 + SE22 + SEr23 + SE24 + SE25 + SEr26 + SE27 + SE28 + SEr29 + SE30).

RECODE SSSA SSSB SSSRC SSSRD SSSF SSSRG SSSH SSSI SSSRJ SSSK SSSRL SSSM (0=3).

COMPUTE SSS = (SSSA + SSSB + SSSrC + SSSrD + SSSE + SSSF + SSSrG + SSSH + SSSI + SSSrJ + SSSK + SSSrL + SSSM).

RECODE SSCA SSCB SSCRC SSCE SSCF SSCRG SSCH SSCI SSCRJ SSCK SSCRL SSCM (0=3).

COMPUTE SSC = (SSCA + SSCB + SSCrC + SSCrD + SSCE + SSCF + SSCrG + SSCH + SSCI + SSCrJ + SSCK + SSCrL + SSCM).

COMPUTE SS = SSS + SSC.

COMPUTE JIT = (JIT1 + JIT2 + JIT3 + JIT4 + JIT5 + JIT6 + JIT7).

CORRELATIONS

/VARIABLES MBITOTAL MBIFDEPR MBIIDEPR MBIPA MBIFPA MBIFEE
 MBIIEE MBIFREQ MBIINTNS WLCS SSE SS JIT YEARSCOR YEARSCOC
 IMMEDSUP SEX AGE EDUC MARITAL INCOME
 /OPTIONS 2
 /STATISTICS 1.

RELIABILITY

/VARIABLES MBIFEE1 TO JIT7
 /SCALE (SUPPORT) SSSA TO SSCM
 /MODEL ALPHA.

*Hypothesis 1a: Equation Number 1

*Main effect SS, No interactions, and no control variables included.

REGRESSION

/VARIABLES MBITOTAL SS
 /DEPENDENT MBITOTAL
 /METHOD ENTER SS.

*Hypothesis 1a: Equation Number 2

*Main effect SS, No interactions, and control variables INCLUDED.

REGRESSION

/VARIABLES MBITOTAL SS YEARSCOR YEARSCOC IMMEDSUP SEX TO INCOME
 /DEPENDENT MBITOTAL
 /METHOD ENTER SS
 /METHOD ENTER YEARSCOR
 /METHOD ENTER YEARSCOC IMMEDSUP SEX TO INCOME.

*Hypothesis 1b: Equation Number 3

*Main effect JIT, no interaction, no control variables

REGRESSION

/VARIABLES MBITOTAL JIT
 /DEPENDENT MBITOTAL
 /METHOD ENTER JIT.

*Hypothesis 1b: Equation Number 4

*Main effect JIT, no interaction, control variables INCLUDED.

REGRESSION

/VARIABLES MBITOTAL JIT YEARSCOR YEARSCOC IMMEDSUP SEX TO INCOME
 /DEPENDENT MBITOTAL
 /METHOD ENTER JIT
 /METHOD ENTER YEARSCOR
 /METHOD ENTER INCOME
 /METHOD ENTER YEARSCOC IMMEDSUP SEX TO MARITAL.

*Hypothesis 1c: Equation Number 5

*Main effect SS and JIT, no interaction, no control variables.

REGRESSION

/VARIABLES MBITOTAL SS JIT
 /DEPENDENT MBITOTAL
 /METHOD ENTER JIT
 /METHOD ENTER SS.

*Hypothesis 1c: Equation Number 6

*Main effect SS and JIT, no interaction, control variables INCLUDED.

REGRESSION

/VARIABLES MBITOTAL SS JIT YEARSCOR YEARSCOC IMMEDSUP SEX TO INCOME
 /DEPENDENT MBITOTAL
 /METHOD ENTER SS JIT
 /METHOD ENTER YEARSCOR
 /METHOD ENTER YEARSCOC IMMEDSUP SEX TO INCOME.

*Hypothesis 1c: Equation Number 7

*Main effect SS and JIT, SSxJIT interaction, no control variables

*NOTE: for the next 2 equations, SS and JIT are centered.

COMPUTE TRANSFR1 = 84.503.

COMPUTE CNTRSS = (SS-TRANSFR1).

COMPUTE TRANSFR2 = 3.593.

COMPUTE CNTRJIT = (JIT-TRANSFR2).

COMPUTE SSxJIT = (CNTRSS*CNTRJIT).

REGRESSION

/VARIABLES MBITOTAL CNTRSS CNTRJIT SSxJIT
 /DEPENDENT MBITOTAL
 /METHOD ENTER CNTRJIT
 /METHOD ENTER CNTRSS
 /METHOD ENTER SSxJIT.

*Hypothesis 1c: Equation Number 8

*Main effect SS and JIT, SSxJIT interaction, control variables INCLUDED.

REGRESSION

/VARIABLES MBITOTAL CNTRSS CNTRJIT SSxJIT YEARSCOR YEARSCOC IMMEDSUP
 SEX TO INCOME
 /DEPENDENT MBITOTAL
 /METHOD ENTER CNTRSS CNTRJIT SSxJIT
 /METHOD ENTER YEARSCOR
 /METHOD ENTER YEARSCOC IMMEDSUP SEX TO INCOME.

*Hypothesis 2a: Equation Number 9

*Main effect WLC, no interaction, no control variables.

REGRESSION

/VARIABLES MBITOTAL WLCS
 /DEPENDENT MBITOTAL
 /METHOD ENTER WLCS.

*Hypothesis 2a: Equation Number 10

*Main effect WLC, no interaction, control variables INCLUDED.

REGRESSION

/VARIABLES MBITOTAL WLCS YEARSCOR YEARSCOC IMMEDSUP SEX TO INCOME
 /DEPENDENT MBITOTAL
 /METHOD ENTER WLCS
 /METHOD ENTER YEARSCOR
 /METHOD ENTER AGE
 /METHOD ENTER YEARSCOC IMMEDSUP SEX EDUC TO INCOME.

*Hypothesis 2b: Equation Number 11

*Main effect WLC and JIT, no interaction, no control variables

REGRESSION

/VARIABLES MBITOTAL WLCS JIT
 /DEPENDENT MBITOTAL
 /METHOD ENTER JIT
 /METHOD ENTER WLCS.

*Hypothesis 2b: Equation Number 12

*Main effect WLC and JIT, no interaction, control variables INCLUDED.

REGRESSION

/VARIABLES MBITOTAL WLCS JIT YEARSCOR YEARSCOC IMMEDSUP SEX TO INCOME
 /DEPENDENT MBITOTAL
 /METHOD ENTER WLCS JIT
 /METHOD ENTER YEARSCOR
 /METHOD ENTER INCOME
 /METHOD ENTER YEARSCOC IMMEDSUP SEX TO MARITAL.

*Hypothesis 2b: Equation Number 13

*Main effect WLC, JIT, interaction $WLCS \times JIT$, no control variables

*NOTE: for the next 2 equations, WLC and JIT are centered.

COMPUTE TRANSFR3 = 40.778.

COMPUTE CNTRWLCS = (WLCS-TRANSFR3).

COMPUTE $WLCS \times JIT$ = (CNTRWLCS*CNTRJIT).

REGRESSION

/VARIABLES MBITOTAL CNTRWLCS CNTRJIT $WLCS \times JIT$
 /DEPENDENT MBITOTAL
 /METHOD ENTER CNTRJIT
 /METHOD ENTER CNTRWLCS
 /METHOD ENTER $WLCS \times JIT$.

*Hypothesis 2b: Equation Number 14

*Main effect WLC and JIT, $WLC \times JIT$ interaction, control variables INCLUDED.

REGRESSION

/VARIABLES MBITOTAL CNTRWLCS CNTRJIT WLCSxJIT YEARSCOR YEARSCOC
 IMMEDSUP SEX TO INCOME
 /DEPENDENT MBITOTAL
 /METHOD ENTER CNTRWLCS CNTRJIT WLCSxJIT
 /METHOD ENTER YEARSCOR
 /METHOD ENTER INCOME
 /METHOD ENTER YEARSCOC IMMEDSUP SEX TO MARITAL.

*Hypothesis 3a: Equation Number 15

*Main effect SE, no interaction, no control variables included.

REGRESSION

/VARIABLES MBITOTAL SSE
 /DEPENDENT MBITOTAL
 /METHOD ENTER SSE.

*Hypothesis 3a: Equation Number 16

*Main effect SE, no interaction, control variables INCLUDED

REGRESSION

/VARIABLES MBITOTAL SSE YEARSCOR YEARSCOC IMMEDSUP SEX TO INCOME
 /DEPENDENT MBITOTAL
 /METHOD ENTER SSE
 /METHOD ENTER AGE
 /METHOD ENTER YEARSCOR YEARSCOC IMMEDSUP SEX EDUC TO INCOME.

*Hypothesis 3b: Equation Number 17

*Main effect SE and JIT, no interaction, no control variables.

REGRESSION

/VARIABLES MBITOTAL SSE JIT
 /DEPENDENT MBITOTAL
 /METHOD ENTER SSE
 /METHOD ENTER JIT.

*Hypothesis 3b: Equation Number 18

*Main effect SE and JIT, no interaction, control variables INCLUDED.

REGRESSION

/VARIABLES MBITOTAL SSE JIT YEARSCOR YEARSCOC IMMEDSUP SEX TO INCOME
 /DEPENDENT MBITOTAL
 /METHOD ENTER SSE JIT
 /METHOD ENTER YEARSCOR YEARSCOC IMMEDSUP SEX TO INCOME.

*Hypothesis 3b: Equation Number 19

*Main effect SE and JIT, SExJIT interaction, no control variables

*NOTE: SE and JIT are centered for the next 2 equations.

COMPUTE TRANSFR4 = 133.530.

COMPUTE CNTRSSE = (SSE-TRANSFR4).

COMPUTE SSE_xJIT = (CNTRSSE*CNTRJIT).

REGRESSION

/VARIABLES MBITOTAL CNTRSSE CNTRJIT SSE_xJIT
 /DEPENDENT MBITOTAL
 /METHOD ENTER CNTRSSE
 /METHOD ENTER CNTRJIT
 /METHOD ENTER SSE_xJIT.

*Hypothesis 3b: Equation Number 20

*Main effect SE and JIT, SSE_xJIT interaction, control variables INCLUDED.

REGRESSION

/VARIABLES MBITOTAL CNTRSSE CNTRJIT SSE_xJIT YEARSCOR YEARSCOC IMMEDSUP
 SEX TO INCOME
 /DEPENDENT MBITOTAL
 /METHOD ENTER CNTRSSE CNTRJIT SSE_xJIT
 /METHOD ENTER YEARSCOR YEARSCOC IMMEDSUP SEX TO INCOME.

*Hypothesis 4: Equation Number 21

*Main effect SS, WLC, JIT, SE, no interaction, no control variables

REGRESSION

/VARIABLES MBITOTAL SSE WLCS SS JIT
 /DEPENDENT MBITOTAL
 /METHOD ENTER JIT
 /METHOD ENTER SSE
 /METHOD ENTER SS
 /METHOD ENTER WLCS.

*Hypothesis 4: Equation Number 22

*Main effects SE, WLC, SS, and JIT, no interactions, control variables

*INCLUDED.

REGRESSION

/VARIABLES MBITOTAL SSE WLCS SS JIT YEARSCOR YEARSCOC IMMEDSUP SEX TO
 INCOME
 /DEPENDENT MBITOTAL
 /METHOD ENTER SSE WLCS SS JIT
 /METHOD ENTER YEARSCOR
 /METHOD ENTER YEARSCOC IMMEDSUP SEX TO INCOME.

*Hypothesis 4: Equation Number 23

*Main effects SE, WLCS, SS, and JIT, SS_xJIT, WLCS_xJIT, SE_xJIT and SS_xWLCS

*interactions, no control variables

*NOTE: All variables centered for the next 4 equations.

COMPUTE SS_xWLCS = (CNTRSS*CNTRWLCS).

REGRESSION

/VARIABLES MBITOTAL CNTRSS CNTRJIT CNTRWLCS CNTRSSE SSxJIT WLCSxJIT SSExJIT
 SSxWLCS
 /DEPENDENT MBITOTAL
 /METHOD ENTER CNTRJIT
 /METHOD ENTER CNTRSSE
 /METHOD ENTER CNTRSS
 /METHOD ENTER CNTRWLCS
 /METHOD ENTER SSExJIT
 /METHOD ENTER SSxJIT
 /METHOD ENTER WLCSxJIT
 /METHOD ENTER SSxWLCS.

*Hypothesis 4: Equation Number 24

*control variables INCLUDED.

REGRESSION

/VARIABLES MBITOTAL CNTRSS CNTRJIT CNTRWLCS CNTRSSE SSxJIT WLCSxJIT SSExJIT
 SSxWLCS YEARSCOR YEARSCOC IMMEDSUP SEX TO INCOME
 /DEPENDENT MBITOTAL
 /METHOD ENTER CNTRSS CNTRJIT CNTRWLCS CNTRSSE SSxJIT WLCSxJIT SSExJIT
 SSxWLCS
 /METHOD ENTER YEARSCOR
 /METHOD ENTER YEARSCOC IMMEDSUP SEX TO INCOME.

*Hypothesis 4: Equation Number 25

*Three way interaction between SSxWLCSxJIT, no control variables

COMPUTE SSxLCxJT = (CNTRSS*CNTRWLCS*CNTRJIT).

REGRESSION

/VARIABLES MBITOTAL CNTRSS CNTRJIT CNTRWLCS CNTRSSE SSxJIT WLCSxJIT SSExJIT
 SSxWLCS SSxLCxJT
 /DEPENDENT MBITOTAL
 /METHOD ENTER CNTRSS CNTRJIT CNTRWLCS CNTRSSE SSxJIT WLCSxJIT SSExJIT
 SSxWLCS
 /METHOD ENTER SSxLCxJT.

*Hypothesis 4: Equation Number 26

*The whole shabang.

REGRESSION

/VARIABLES MBITOTAL CNTRSS CNTRJIT CNTRWLCS CNTRSSE SSxJIT WLCSxJIT SSExJIT
 SSxWLCS SSxLCxJT YEARSCOR YEARSCOC IMMEDSUP SEX TO INCOME
 /DEPENDENT MBITOTAL
 /METHOD ENTER CNTRSS CNTRJIT CNTRWLCS CNTRSSE SSxJIT WLCSxJIT
 SSExJIT SSxWLCS SSxLCxJT
 /METHOD ENTER YEARSCOR
 /METHOD ENTER YEARSCOC IMMEDSUP SEX TO INCOME.

Appendix G: Raw Data

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