AN EXAMINATION OF THE INFLUENCE OF CULTURE, CLIMATE AND
LEADERSHIP AS DRIVERS OF A HEALTHY WORKPLACE.

by

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Abstract

The purpose of this study was to explore the many components of a working environment that should be considered when developing a healthy workplace. The definition of a healthy workplace is expressed in terms of the organization's practices in providing an internal working environment that supports, protects and promotes the health and well-being of employees while concomitantly pursuing its business goals (Jaffe, 1995). To test this definition the internal working environment was contextualized as the culture, social climate, and leadership style. These variables were then used to examine the influence of the internal working environment on perceptions of organizational health practice and occupational bond as drivers of a healthy workplace. Employees from four organizations based in the United Kingdom participated in the study (N=168 employees). The results indicate that each of the independent variables culture, climate or leadership, are each significant predictors of organizational bond and health practice when analyzed singularly. More importantly however is the differential impact of these variables on occupational bond and health practices when viewed through the comprehensive model such that positive aspects of the working environment dampen the negative effects. The study also shows that the proximal social environment is more influential in promoting occupational bond in the workplace than the distal environment of culture and leadership. The applied implication of these findings when developing a healthy workplace is that over and above culture and leadership influences, the proximal environment of climate and health practices is a salient force among workers. Overall this study speaks to the need for contextualizing the workplace before initiating organizational improvement or development.

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Acknowledgement

To the memory of my father, Sean Kenny (1929-2008). It is a wonderful thing for a child to know the pride of a parent.

Go mbuailimid le chéile arís, go gcoinní Dia i mbos A láimhe thú.

To my husband, Jim, who stood with me every inch of the way.

Tá tú chomh láidir le crann darach – mo bhuíochas agus rath Dé ort. Anois tiochaigh ar lá.

To Professor Steven Cronshaw, I thank you for your conversations and insights.

An Examination of the Influence of Culture, Climate and Leadership

as Drivers of a Healthy Workplace

Occupational Health Psychology (OHP) is differentiated by its specificity to the workplace setting. The contribution of OHP is that it extends the domain of occupational health, a discipline that focuses on the physical hazards of work, to include the psychological hazards of work as well. OHP is defined as the application of psychology to improve the quality of work life by protecting and promoting the safety, health and well-being of workers. Protection refers to intervention in the work environment to reduce worker exposures to occupational stress, illness and injury while promotion refers to health promotion intervention to equip workers with knowledge and resources to resist the hazards of occupational stress, illness and injury in the workplace. The focus of OHP is the development of healthy workplaces. In the words of Levi (1990):

> work-related psychosocial stressors originate in social structures and processes, affect the human organism through psychological processes, and influence health through four types of closely interrelated mechanisms – emotional, cognitive, behavioural, and physiological. The health outcome is modified by situational (e.g. social support) and individual factors (e.g. personality, coping repertoire). The work-environment-stress-health system is a dynamic one with many feedback loops. There is little but increasing direct evidence of a causal relationship between work-related psychosocial stressors and the incidence and prevalence of occupational morbidity and mortality. But, a substantial body of indirect evidence strongly suggests that such associations exist and emphasizes the need to better understand their role. Accordingly, research and health action should aim at being systems

oriented, interdisciplinary, intersectorial, health- (and not only disease-) oriented, and participative (p. 1142).

Similarly, Jaffe (1995) defined a healthy workplace in terms of the physical, social, and psychological working environment within which the employee is provided with safe working conditions, is treated with respect, and is allowed personal growth, participation, and involvement in the design and implementation of jobs that collectively achieve mutual organizational and individual goals. Accordingly, this definition expresses an essential nature of a healthy workplace as the organization's practices and polices as well as the extent of the organization's engagement in providing an internal working environment that supports, protects and promotes the physical and psychological health and well-being of employees while concomitantly pursuing its business goals.

The healthy workplace is an emerging concept that is receiving increased attention from organizations in the wake of a mounting body of evidence that empirically supports a link between occupational environment, worker health, and productivity (World Health Organization, 2006). However, the application of a healthy workplace is impeded as the construct of the 'internal working environment' is not readily observed. Nor for that matter are its constituents readily defined, but merely inferred from outcomes such as employee satisfaction ratings, absenteeism, accident, retention, or production rates, to name a few. The work of Gunz and Whitley (1985) suggests that organizational culture and climate constitute the context of an internal working environment – the nature of culture being how things are done in an organization and the nature of climate being the member's perception of the way things are in the organization. Cooper (1998) additionally proposes that within

the organization this working environment of culture and climate becomes a strong internal force that influences the success of the organization and its members. For example, organizations that had formal organizational practices such as dependent care benefits and cultural norms supportive of working women improved the ability of women to integrate work with family, and increased work, family and life satisfaction (Thompson & Prottas, 2005). Similarly, Zohar's (1980; 2002; 2003) research explored the multiplicity and specificity of climate and demonstrated the influence of climate on member behavior, such that a strong climate for safety correlated with the organization's safety levels.

Thus the theoretical implication that can be identified from the body of literature is that an internal working environment is a composite of specific climates within a culture that serves as a frame of reference to guide and direct specific behaviours (Carr, Schmidt, Ford, & DeShon, 2003). This proposition is supported within the safety literature. For example, the role of safety climate is seen as a predictor of performance, that is, a strong safety climate predicts good safety behaviour (Neal, Griffin & Hart, 2000; Zohar, 1980). What the literature further suggests is that interventions designed to improve organizational culture may have a positive impact on safety but interventions especially aimed at improving the safety climate will be more effective when they are carried out within the context of a positive organizational culture that values the safety of workers.

One other important aspect of the internal working environment is that of leadership which the work of Kelloway and Barling (2010) suggest is the link between the working environment and worker health. Leadership is posited as a major factor in determining the strength and direction of the climate being developed (Zohar, 1980). Indeed, Zohar (1980) states that "attempting to improve safety levels with new safety regulations, poster

campaigns, and departmental safety contests without first securing sincere management commitment might be missing the forest for the trees" (p.101). Similarly for Cooper and Cartwright (1994), active management involvement and commitment are prerequisites to establishing a specific climate. This body of research corroborates Yukl's (2006) definition of leadership as a shared influencing process that is effectuated by individuals who hold formal leadership roles. Thus, the suggested applied implication that can be identified is that leadership drives the development of a climate along with a coherent set of expectations regarding behavior.

The theoretical and applied importance of Zohar's (1980) research on safety climate is equally pertinent to and parallels the development of a healthy workplace. The extant research on healthy workplaces underscores the importance of understanding the prevailing culture and climate within the organization. The basic premise as suggested by Jaffe (1995) is that the more organizations commit to and support human needs for safety, security, personal growth, involvement, and meaning, the healthier the organization. Cooper (1998) further substantiated this premise, suggesting that developing a healthy workplace needs to be coupled with a culture that values the health, safety, and well-being of its workers.

Consistent, therefore, with the available literature this study explores the nature and context of healthy workplaces by examining employees' perceptions of the organization's policies, practices and internal working environment. The literature suggests that the full potential of a healthy workplace is optimized when it is set within the framework of a work environment that values its members. In view of this, I contextualize the workplace within the culture, climate and leadership and test these variables in a comprehensive model to examine their influence on perceptions of occupational bond and health practices.

Accordingly, this paper is structured to provide an account of the construct of a healthy workplace, followed by a review of the distinctions between culture and climate and the role of leadership in the workplace. The proposed hypotheses test the differential influence of culture, climate, and leadership on outcomes that infer a healthy workplace such as health practices and occupational bond. Organizational health practices are measured by a scale developed for this study. The description of this developmental process is presented in Study 1 which precedes the presentation of the main study. The paper concludes with a discussion and thoughts on future research directions.

The Nature of Healthy Workplaces

The concept of a healthy workplace extends the domain of occupational health to include not only the physical hazards of a workplace but the psychological hazards as well. Jaffe (1995) additionally argued that a healthy workplace also extends the traditional domain of organizational health to include not only meeting profit and production targets but also protecting the health and well-being of the people working in the organization. Thus a healthy workplace is a balance between productivity and the quality of working life. Cooper and Cartwright (1994) distinguished a healthy workplace as a financially successful organization able to maintain and retain a workforce characterized by good physical and psychological health.

However, the concept of psychological health or as Argyris (1957) termed it 'psychological success' in the work place has been the topic of much research over many decades. While often under the guise of motivational theories – for example Motivation-Hygiene theory (Herzberg, 1987, 1992) - the prominence of quality, well-being and health of working life stems from more recent trends that have altered the nature of the workplace. Trends such as globalization, technological advances, and an ageing workforce have altered the context of the workplace and the employment relationship (Ilgen, 1990; Kenny & McIntyre, 2005). Similarly, Sauter and Hurrell (1999) attributed the burgeoning interest in healthy workplaces to several inter-related developments which they listed as (a) the growth of and recognition of stress/strain related disorders as a costly workplace problem, (b) the growing acceptance that psychosocial factors play a role in the etiology of emergent occupational safety and health problems, and (c) recent and dramatic changes in the

organization of work that foster both job stress/strain and health and safety problems at work (p.117).

In Rosen's (1995) discussion of healthy workplaces he posited that, to the detriment of the workplace, "many organizations tend to create work policies on the basis of the belief that work is something to be extracted from people, as though they were a kind of fuel to be burned up and reduced to waste" (p.ix). For Argyris (1957) such human resource practices within an organization create "the ideal conditions" of dissatisfaction for the individual. Argyris contended that formal principles of organization, for example – task specialization, chain of command, and span-of-control – are incongruent to the needs of an adult. Argyris explained that the basic developmental model from infancy to adulthood brings the individual from a state of being passive as an infant to using initiative; from a state of dependence as an infant to increasing autonomy and creative interdependence; from a state of limited behavioural and intellectual skill as an infant to increasingly complex skill development to meet endless challenges; from a lack of awareness as an infant to an increasing awareness and control of self, a sense of integrity and increasing self-worth; from a short-term perspective to a long-term perspective as an adult; from a subordinate position as an infant to aspiring to at least equality with peers.

By contrast, the formal principles of bureaucratic organizations inhibit the use and development of complex abilities for many workers through task specialization that also removes psychological challenge. These principles establish a hierarchy of authority or a chain of command that makes the individual "dependent, passive, and subordinate to the leader" (Argyris, 1957, p.13). Agyris (1957) concluded that:

    employees work in an environment where (1) they are provided minimal control

over their work-a-day world, (2) they are expected to be passive, dependent, and

subordinate, (3) they are induced to perfect and value the frequent use of a few

superficial abilities, and (4) they are expected to produce under conditions leading

to psychological failure. These characteristics...are much more congruent with

the needs of infants in our culture. In effect, therefore, formal organizations are

willing to pay high wages and provide adequate seniority if mature adults will, for

eight hours a day, behave in a less mature manner. (p.18)

This attitude is oftentimes attributable to organizations embracing the ideas of Taylor's

(1911) scientific management where the thinking about work is separated from the doing of

work. Accordingly, these principles of organization view employees as simply

instrumental for fulfilling organizational goals. In this sense Taylorism is described as the

first concerted effort to de-skill work. Over time scientific management has become

associated with passivity, learned helplessness, and lack of participation of workers at work

(Kenny & McIntyre, 2005). De-skilling and task specialization, for example, define jobs as

narrowly as possible to improve efficiency but to the detriment of the worker, oftentimes

resulting in low morale, high absenteeism, and safety problems – which in today's terms are

constituents of unhealthy workplaces (Argyris, 1957, 1990; Kenny & McIntyre, 2005; Lau

& Shani, 1992; McGregor, 1960). Even early studies, however, have challenged the

benefits of these principles. For example, the Trist and Bamforth (1951) studies of miners

found a strong association between job de-skilling and depression. Additionally, the classic

Whitehall studies of civil servants (Marmot & Smith, 1991) found a strong association

between lack of job control and heart disease (the lower the grade of employment, the

higher the mortality rate).

The implication from these classic investigations of the links between work and health is that alienating and dehumanizing work environments are involved in the stress/strain process that contribute to deleterious health impacts, both psychological and physiological, on the worker. To further illustrate these impacts, an International Labour Organization report (Hoel, Sparks & Cooper, 2000), found that 26% of workers in EU member states reported health problems related to work stress, which approximated 41 million EU workers, and that this percentage rose markedly in some sectors e.g. 47% for finance and insurance sectors and 44% for the education sector. For the United Kingdom the International Labour Organization report had estimated that 40 million working days were lost each year to stress related disorders. In Australia, the 1994 cost of occupational stress was reported by the Federal Assistant Minister for Industrial Relations to be estimated around A$30 million. In the United States, over half of the 550 million working days lost each year due to absenteeism were related to work stress.

By contrast, Guastello (1993) made the case that mitigating the organizational risk factors attributable to work stress/strain improved the health of workers. Similarly, Rosenstock (1997) provided an overview of the research conducted at National Institute of Occupational Safety and Health (NIOSH) to identify risk factors associated with the negative effects of work. This research has focused on organizational aspects of the workplace that contribute to the stress/strain process, such as work scheduling, job design, management style and machine-paced work as examples, to develop practical strategies to ameliorate the incidence of negative effects from the workplace. Additionally, intervention strategies evaluated by the St. Paul Fire and Marine Insurance Companies (Jaffe, 1995) and from Liberty Mutual Research Institute for Safety (Pransky, Shaw, Franche & Clarke,

2004; Pransky, Shaw & McLellan, 2001; Shaw, Pransky, & Fitzgerald, 2001) offer evidence that high-risk work groups have higher than average worker compensation claims, accidents, illnesses and other related costs and that by improving the psychosocial working environment and working conditions these adverse outcomes are reduced.

A healthy workplace, therefore, values its workforce as an appreciating human potential and integrates the health and safety needs of its workforce with the business needs of all stakeholders - the organization, the customers, the stockholders and the community (Jaffe, 1995). The study of healthy organizations recognizes the importance of the physical, social and psychological aspects of work that influence short-term and long-term health outcomes (Barling & Griffiths, 2002). A healthy workplace recognizes that for most people, engaging in meaningful work is a defining characteristic of their life. In addition to the utilitarian function of work, occupational status plays an important role in an individual's sense of identity, self-esteem and psychological well-being (Jahoda, 1982; Lau & Shani, 1992; Steers & Porter, 1975). Thus, a healthy workplace regards people's skills, attitudes, energy, and commitment as vital resources capable of acting as a driving force in the achievement of organizational goals. By contrast, workplaces which permit heavy-handed, fear-driven management styles as described by Williams and Geller (2000) result in low employee morale, high turnover, apathy, low job satisfaction and cynicism.

Consequently, a healthy workplace necessitates the examination of how work is organized, in what context work is performed and the consequences – short- and long-term, physical and psychological - of requiring humans to perform work in that manner. An example of the application of healthy workplace strategies as a tool for identifying and then reducing the harmful aspects of working conditions is provided in the review of the 'health

circles' literature conducted by Aust and Ducki (2004). Health circles, which have much in common with the participatory action research concept, were developed in German organizations to optimize organizational level prevention strategies to improve working conditions. Based primarily on the principles of the demand-control-support model of the stressor/strain relationship proposed by Karasek (1979) and Siegrist's (1996) effort-reward-imbalance model, the health circles "aim to reduce potentially harmful working conditions like the combination of low control and high demands or the imbalance between high efforts and low reward" (Aust & Ducki, 2004, p.259). The intent of the health circles is to provide a preliminary fact finding phase, a forum for problem analysis followed by a discussion arena between varying hierarchical levels within the organization to implement emergent recommendations from the process. As a strategy towards developing healthy workplaces, these health circles reflect the growing recognition that aspects of work organization have adverse consequences on employee health and well-being but, more importantly, facilitate employee participation in the process of workplace improvement. Although the applied nature of these approaches may not always meet the rigour of scientific enquiry, the findings do suggest that health circles are one of the strategies that lead to organizational improvements in working conditions, including psychosocial strain, and result in increased job satisfaction and reduced absenteeism (Aust & Ducki, 2004). What is noteworthy of these participative strategies is the implication that the development of a healthy workplace is a collaborative process and not a top-down prescription.

In a similar vein, Semmer (2002) presented a synthesis of the various aspects of work organization typically targeted to improve the health and wellbeing of workers. Such interventions typically focus on changes to any or all of, ergonomic, job content, role and

interpersonal demands. Overall, interventions targeted at these aspects of work organization result in positive measures of improvement. For example, participative interventions aimed to improve working conditions – work scheduling, communication, conflict resolution, and structural changes - among inner-city bus drivers showed improvements in levels of perceived job strain as well as reports of subjective health and well-being at three month and five year intervals post implementation (Kompier, Aust, van den Berg & Siegrist, 2000). In similar studies that focused on clarifying roles or career and promotion paths the findings indicated a positive increase in perceptions of control, supervisory support and work pressure while simultaneously, reducing turn-over (Golembiswski, Hilles, & Daly, 1987).

To ameliorate deleterious health outcomes in the workplace a preventive model should target interventions at three levels – primary, secondary and tertiary (Cooper, 1998). Primary prevention targets the organizational system with the aim of modifying organizational stressors to reduce distress. Modifiable stressors that place individuals at risk of distress include, for example, the organization of work (i.e. work design, workplace support, task discretion, role clarity, etc.), and policies (i.e. organizational as well as Human Resource policies, practices, and procedures, including career development, flex-time, benefits package, etc.). By modifying the intensity, frequency and/or duration of the stress experience (e.g. interventions for air traffic controllers, Nelson & Simmons, 2005) the anticipated benefit is to promote work engagement rather than work distress. The emphasis on primary intervention draws on an organization's commitment to worker psychological and physical well-being. Secondary prevention targets groups or individuals within the organization. This level of intervention is aimed at detecting and managing the experience

of stress, for example, to what may be necessary and inevitable organizational demands. Secondary prevention, while targeting the way in which individuals or groups perceive and respond to stress through health promotion programmes and skills training etc., should be undertaken in conjunction with primary intervention ensuring adequate and appropriate resources and workplace support (Cooper, 1998; Cooper, Dewe & O'Driscoll, 2001). Tertiary prevention concerns the treatment, rehabilitation, work maintenance or return-to-work of individuals who have acquired a work disability. An example of a common intervention at the tertiary level is the provision of employee assistance programmes. The inclusion at the tertiary level of a comprehensive disability management programme further facilitates the rehabilitation, work maintenance or timely return-to-work of injured or ill individuals. This tertiary level recognizes that a healthy workplace not only promotes and supports the maintenance of worker health but facilitates and accommodates the individual who requires rehabilitative interventions. I view this as an important aspect of a healthy workplace therefore, I have incorporated organizational health policies and practices as an outcome measure in this study.

In many respects, however, theory and research has much ground to cover in precisely defining 'healthy' organizations or even in identifying the full extent of indicators that distinguish 'healthy' workplaces. Indeed, it could even be reasonably argued that the concept of healthy workplaces just puts a new flavour on an existing recipe - Theory Y, outlined in *The Human Side of Enterprise* (McGregor, 1960; 1985). In the foreword of the 1985 edition of McGregor's book, Bennis concisely sums up the propositions of Theory Y, which juxtapose current thinking on healthy workplaces, as follows:

- Active participation by all involved

- A transcending concern with individual dignity, worth, and growth

- Reexamination and resolution of the conflict between individual needs and organizational goals, through effective interpersonal relationships between superiors and subordinates

- A concept of influence that relies not on coercion, compromise, evasion or avoidance, pseudo support, or bargaining, but on openness, confrontation, and "working through" differences

- A belief that human growth is self-generated and furthered by an environment of trust, feedback, and authentic human relationships. (p. v)

Nonetheless, treading old ground is no detriment if the outcome is greater organizational commitment to and responsibility for the health of the worker. Another point equally consistent throughout the literature is that implementing strategies to develop healthy work environments must consider the context of each unique occupational setting and the needs and challenges of both employer and employee (Quick, 1999). These strategies to advance towards a healthy workplace - whether they target the physical environment (e.g. ergonomics) or the psychosocial environment (e.g. interpersonal demands or supervisory support) - are oft-times overlapping, integrative, interactive and interdependent. No single strategy should be adopted at the expense of another (i.e. strategies focused at the individual level may neglect organizational issues and vice versa) but each should be viewed as collectively contributing to a healthy workplace (Semmer, 2002). For example, Kelloway and Day (2005a; 2005b) suggested that the prevalent focus of many organizations is on health promotion. These authors argue that while there is merit

in promoting health in the workplace, targeting individuals is only a partial solution to some organizational level issues (such as poor safety record) without systemic, concomitant effort to improve organizational, group, and individual level well-being.

As more organizations are turning to health promotion and workplace wellness programmes to address the ever-growing responsibility for worker health, Quick (1992) cautioned that this strategy may not necessarily develop healthy working environments. To embrace the concept of a healthy workplace, the extant research underscores the importance of understanding the prevailing culture and climate surrounding workplace health when considering interventions. Peterson's (1997) observations, for example, indicate that issues such as workplace culture influence the effectiveness of intervention programmes. Similarly, Cooper (1998), corroborating the importance of an organization's culture, advised that policy and procedures can adapt easily to new situations but culture and climates tend to take longer. Work and organizational climate are strong internal variables that influence the success and endurance of intervention programmes. For example, research demonstrates that organizational policies are not singularly sufficient in predicting successful reintegration of injured workers unless mediated through a facilitative workplace environment (McHugh, 2005). Consequently, as highlighted by Amick and colleagues (2000), the full potential of wellness interventions is better realized when they are set within a larger framework of a positive organizational culture.

The premise that the larger framework of a supporting organizational culture is salient for successful outcomes is amply demonstrated from the safety climate literature. This research not only supports the strong link observed between the influences of culture and climate and a corporation's safety performance (for examples see Molenaar, Brown,

Caile, & Smith, 2002; Neal & Griffin, 2006), it also demonstrates the influence of safety climate on specific individual behaviours related to safety. From the safety literature the role of climate is seen as a predictor of performance, that is, a strong safety climate predicts good safety behaviour (Neal, Griffin & Hart, 2000). What the safety literature further suggests is that interventions designed to improve general organizational culture may have a positive impact on safety climate but interventions specifically aimed at improving safety climate will be more effective when they are carried out within the context of a positive organizational culture. The purpose of this study is to demonstrate the significance of culture, climate and leadership as important variables that influence the development of healthy workplaces which, consistent with available literature, is inferred from such outcome measures as occupational bond. However, at this juncture, it is timely to review the literature related to the concepts of culture and climate.

The Context of the Workplace

Distinctions between Culture and Climate

To provide the conceptual framework of culture and climate for this study, it is necessary to first acknowledge the 'definitional, theoretical, and methodological disputes' (Pettigrew, 2000, p.xiv) that exist in the literature. Indeed, Schneider (2000) referred to this disunity between the research approach to culture and climate as 'sibling rivalry' with its roots in the differing heritage of the two constructs (p.xix). For example, the notion of culture within organizations is a construct extracted from the discipline and traditions of anthropology, while climate has its origins in organizational psychology. Moreover, no single definition of culture is universally accepted thus fostering two distinct camps within the culture literature. For one camp (e.g. Gregory, 1983) culture is an abstract entity. Therefore, the nature and quality of culture is more to be explored through its symbolism, rites and rituals that provide a deep description of what an organization *is*. Thus, within this camp, there is a heavy concentration on the qualitative methods of research typical of the anthropology tradition. The goal of this line of research is to delineate the elements of culture for purposes of comparison. Definitions of culture from this camp rely on profiling the content of the culture of a given organization.

By contrast, the second approach to culture (e.g. Schein, 1985) views culture as something an organization *has*. Culture, therefore, is a process of constructing shared meanings, assumptions, and underlying values which, typically, have emanated from the organization's founding fathers. It is the interpretative way of perceiving, thinking, feeling, and behaving that is embedded in the etiology, history, transmission and effectiveness of the culture within organizations. Kotter and Heskett (1992) extend this unitary

conceptualization of culture into two levels "which differ in terms of their visibility and their resistance to change" (p.4). The deeper, less visible level is embedded in the shared values of the group that tend to persist over time. The more visible, malleable level represents the group's attitudes, behavioural patterning, norms and expectations that prescribe the way work is approached – often described as the way things are done in the organization (Glisson & James, 2002). Accordingly, culture is commonly described as the accumulated shared learning and beliefs of a group that facilitate shared interpretations of situations; thus culture is manifested by shared behavioural norms rendering coordinated actions and interactions possible and meaningful.

It follows then, that the separation of the construct into levels as described above also extends the approaches that can be used to measure culture. Cooke and Rousseau (1988), for example, proposed a quantitative approach that deviates from the more traditional qualitative approach typically used. These researchers focused on the assessment of the more visible level of shared norms and expectations to profile organizational culture. Cooke and Rousseau argued that the two key attributes of culture that can be quantified are direction and intensity. Direction refers to the content or substance of culture exemplified by, for example, the values, behavioural norms and thinking styles it emphasizes. Intensity refers to the degree of employee consensus on this emphasis. The advantage of applying a quantitative method to organizational culture includes the practical issues of ease of assessment, replicability, and the analyses of data-based evidence of change in organizations. Hofstede and colleagues (1990) similarly corroborated the use of quantitative survey methods to map dimensions of culture, the utility of which facilitates the identification of shared conventions or behavioural norms

that may be constraints or opportunities for organizational change. Furthermore, there is a body of work that validates the predictive value of quantitative approaches to measuring culture. The work of Denison (1990; 2001) for example, not only demonstrated the utility of quantitative approaches in organizational development, it also demonstrated that behavioural measures of culture are strong predictors of organizational effectiveness and performance. It is this quantitative approach measuring the normative beliefs and behaviour as manifestations of culture that is relied upon in the present study to test the predictive value of culture on the pathway to a healthy workplace.

The other contextual feature of the workplace environment that is a focus in the present study is that of climate. Climate is widely defined as the shared perception of organizational practices and procedures. Although there is much overlap between the constructs of culture and climate because of their co-existence in the workplace, by distinction, climate focuses on members' perceptions of the psychological impact of the work environment on his or her wellbeing (Reichers & Schneider, 1990). Succinctly, the nature of culture is how things are done in an organization and the nature of climate is the employee's perception of the way things are in the organization. Hellreigel and Slocum (1974) offer this definition of climate:

> A set of attributes which can be perceived about a particular organization and/or
>
> subsystems, and that may be induced from the way that organizations and/or its
>
> subsystems deal with their members and environment. (p.256)

Also, by distinction, culture is considered a distal context and the property of the organization, whereas climate is the more proximal working context and, ultimately, the property of the individual. When the climate construct is conceptualized and measured at

the individual level of analysis it constitutes a psychological climate of the individual. When there is consistency, consensus and congruity of perceptions among a work-unit or group, the shared perception is aggregated to the group level representing the group climate or organizational climate.

Although the literature speaks of the divergent histories of the culture and climate research - i.e. culture research influenced by roots in anthropology and climate research influenced by roots in psychology - in the applied context they are considered as co-existing and interdependent (in spite of the fact that they are seldom coupled in research). For many authors (e.g. Kirsh, 2000; Reichers & Schneider, 1990; Schein, 2004; Steers & Porter, 1975) climate is a construct embedded within the context of culture and develops from the values and assumptions of the culture. Consequently, climate and culture are considered the building blocks of the workplace, with climate being considered the overt expression of culture (Guldenmund, 2000). Indeed, Schein (2004) suggested that climate can only be changed to the degree that the desired climate is congruent with the underlying cultural assumptions. Schein also posits that the failure of change efforts occurs when the underlying culture is not taken into account – "articulating new visions and new values is a waste of time if these are not calibrated against existing assumptions and values" (p.xxix). For this reason, both culture and climate are the focus of measurement in this study in order to probe the relationship between the organizational environment and the concept of a healthy workplace.

Culture in the workplace

The quantitative approach to organizational culture conceptualizes culture as the shared corporate values that affect and influence members' attitudes and normative

behaviours (Cooper, 2000). Values are considered the building blocks, in that values underlie and affect attitudes, which in turn underlie and affect behaviour (Stackman, Pinder, & Connor, 2000). The definition of values that has attained the most prominence in the literature is that of Rokeach (1973); values are "an enduring belief that a specific mode of conduct or end-state of existence is personally and socially preferable to alternative modes of conduct or end-states" (p.160). Values play an important role in our individual sense of well-being. For example, there is research evidence to support that particular value types are considered healthy and conducive to well-being. Healthy values include the higher-order, intrinsic, and growth-related values e.g. openness-to-change, self-direction and development, and stimulation. Schneider (1985) found support for the importance of clarity of goals, opportunities for self-expression and development, and the value of co-operation in the workplace to the quality of work life. By contrast, there is emerging research (Sagiv & Schwartz, 2000) to suggest that extrinsic, deficiency-related values such as dominance, power and prestige are related to poorer outcomes of well-being for the reason that attainment of these values may be counterproductive to the activity required to pursue them. However, what is important here is that there is considerable support for the proposition that values supportive of higher order need gratification are healthy and conducive to well-being.

Congruity between the individual's values and the environment also promotes well-being. Bouckenooghe and colleagues (2005) found that value conflict may be an important predictor of stress/strain in the workplace – in that experiencing incongruence between individual values and the dominating values of the workplace leads to stress/strain whereas value congruence leads to greater job, career, and family satisfaction, stress/stain reduction,

greater emotional well-being and fewer psychosomatic symptoms. Meglino, Ravlin, and Adkins (1989) also support the relationship between value congruence and job satisfaction, organizational commitment, and length of tenure. Moreover, these authors examined value congruence between different levels in the organization to support their argument that value congruence influences behaviour and positive outcomes. Additionally, there is research to support the idea that values are a strong predictor of job satisfaction when intrinsic values are met. Knoop's (1994a, 1994b) exploration of work-related values supports the proposition that the more intrinsic value the job provides, such as meaningful work or skill and knowledge use, the greater the job satisfaction.

There is no direct research on what constitutes a healthy workplace, however in view of Jaffe's (1995) definition incorporating higher-order needs such as respect, personal growth, participation and involvement, a review of the literature quickly reveals that the higher-order values conducive to well-being at the individual level are the values embodied in the strategies used to improve health in the workplace at the organizational level (see Cooper & Cartwright, 1994). Striving towards uniformity of organizational values and individual values promotes the movement towards psychological health and well-being in the workplace. For example, the literature indicates that skill variety, task significance, self-development and autonomy are valued at the individual level. The movement towards healthy workplaces incorporates skill variety, task significance, self-development and autonomy as some of the strategies to improve health in the workplace. The premise from the organizational literature is that bland impoverished jobs lead to negative stress and negative outcomes and that skill variety, task significance, and autonomy leads to positive stress and positive outcomes – a premise supported in the literature related to motivational

values at the individual level (Argyris, 1957, 1990; Herzberg, 1987). The work of Smit and Schabracq (1998) further corroborate the link between organizational level values and individual health. In their investigation of the cultural dimensions of adaptation, goal attainment, and integration within industrial settings, they found that teams higher on these dimensions enjoyed greater health at the individual level than the teams lower on these dimensions.

The conceptual model of organizational culture developed by Cooke and colleagues (Cooke & Lafferty, 1989; Cooke & Rousseau, 1988; Cooke & Szumal, 2000) distinguishes 12 behavioural norms ascribing to higher-order satisfaction needs (such as self-actualizing) versus lower-order security needs (such as dependence) whilst also distinguishing a culture that is task orientated (such as perfectionistic) versus people oriented (such as affiliative) that are associated with constructive, passive/defensive, and aggressive/defensive cultural styles. Satisfaction needs encourages humanistic, affiliative, achievement and self-actualizing norms. These are some of the positive values that the literature proposes is conducive to health. This view fits with the healthy workplace movement that aims to promote supportive interaction, integrity, confidence and commitment in the workplace and is the model of culture used in this study. Therefore, the first issue to address is to determine the prevailing culture within the organization based on the model proposed by Cooke and colleagues. It is expected that within an organization that values its workforce there will be a high consensus in the direction of higher-order behavioural norms such as achievement, self-actualization, humanistic-helpful and affiliative norms. Thus, emanating from the above discussion the following hypotheses are proposed:

Hypothesis 1: Organizational culture perceived to meet higher-order satisfaction needs is positively associated with health practices and occupational bond, both indicators of a healthy workplace.

Hypothesis 2: Task-oriented culture is negatively associated with health practices and occupational bond, both indicators of a healthy workplace.

Climate in the workplace.

By distinction, as mentioned above, climate is a more proximal concept and is described as the way workers perceive organizational characteristics and attributes (e.g. practices, policies, procedures) of their working environment; therefore, climate is defined as the property of the individual. Climate is often described as the overt manifestation of culture within an organization and both climate and culture are dynamically intertwined (Guldenmund, 2000). Climate, however, is considered to be more closely linked with individual expectancies, motivation and behaviour than is culture (Hofstede, 1998). Additionally, agreement among individuals within a work unit can be aggregated to characterize the climate of that work unit (Glisson & James, 2002). The benefit of this agreement is that employees develop a frame of reference for guiding and directing appropriate behaviours. Alvesson (2002) further distinguishes climate from culture in that climate analysis is context specific and related to a central issue (e.g. the social climate, the safety climate, or a climate for innovation). This conceptualization of climate as a situational referent or 'a climate for something' (i.e., a climate for safety) is supported by the early work of Schneider (1975). The basic principle is that the organizational climate construct can be as multifaceted and molar as to become meaningless unless directed at something specific. Schneider concluded that unless the predictor variable (e.g. safety

climate) is conceptually and operationally linked to the criterion variable (e.g. accident rates), the probability of a relationship emerging is low. There is a background of evidence validating the specificity of climate and the aggregation of individual perceptions as representative of climate (Pidgeon & O'Leary, 2000; Zohar, 1980).

The large literature examining the safety climate, as an example, demonstrates the importance of the climate concept as a working environment within the workplace. Indeed, climate may foster or deter certain organizational outcomes and climate may also be cultivated to facilitate certain organizational goals (Shoemaker, Robin & Robin, 1992). For example, the critical review by Reason, Parker and Lawton (1998) indicates that an over-reliance on the enactment of rules and procedures rather than prioritizing a commitment to safety may actually deter safety. These authors posit that continually adding rules and procedures may have the effect of limiting or even reducing the range of permitted actions to less than those necessary to get the job done under anything but optimal conditions. Such circumstances foster frustration and the perception that the rules are made to be broken in order to get a job done. The outcome is an acceptability of rule violation thus increasing the likelihood of intentional deviation from procedures and increasing the likelihood of accidents (Rundmo, 2000). By contrast, Parker, Axtell and Turner (2001) found that the work characteristics such as supportive supervision, job autonomy and communication quality cultivated safety behaviours. Their study provides support that organizational commitment towards employee safety increases the individual's effort to perform work safely. Likewise, Neal and Griffin (2006) argue that the strength of a specific climate predicts specific behaviours. Their results further support the claim that

when workers perceive that a specific climate is valued in an organization, these workers will reciprocate by actively participating in the specific climate-related activities.

It follows then that perception of climate guides behaviour. In investigating the mechanisms by which climate affects behaviour Neal, Griffen and Hart (2000) proposed that knowledge, skill, and motivation are important determinants of performance and that the relationship between climate and performance is mediated through these determinants. In the context of a safety climate, these authors demonstrated that safety behaviours are determined by knowledge, by the skills necessary for particular behaviours, and by the motivation of individuals to perform the behaviours. The logic of their hypotheses was that an individual must understand how to perform work safely and have the skill to do the work in order to participate in safety behaviours. Their study supported their hypotheses some of which were that (a) knowledge predicts both compliance and participation, (b) the strength of the specific climate predicts both knowledge and motivation, and (c) that the specific climate, knowledge and motivation mediate the relationship between organizational culture and specific related outcomes (see Neal, Griffin & Hart, 2000 for details).

This knowledge aspect for building a specific climate is of interest to the framework of this study. Jaffe's (1995) definition of a healthy workplace inherently features respect, dignity and inclusion of members of an organization in the organization. Although there is no direct measure of a 'healthy workplace' the current thesis proposes that a characteristic of a healthy workplace should be inclusivity so as to foster workers' knowledge of and positive perceptions towards occupational ability as well as occupational disability. A healthy workplace should provide support for the return-to-work potential of employees with disability into meaningful roles. The importance of a facilitative and supportive work

climate and its impact on the successful reintegration of a worker with disabilities into a meaningful occupation is discussed by McHugh (2005). The discussion highlights the importance of worker knowledge of workplace programmes, in that few workers on Workers' Compensation Claim had knowledge of the rehabilitation programmes available to them and that those workers who were aware of and used the programmes were twice as likely to return to work successfully. The measure used to tap into workers perception of this aspect of a healthy workplace is the Organization Health Practice (OHP) scales (McHugh, 2007). The background and the development of the measure are provided in Study 1.

Studies also show that dimensions of climate are associated with outcome measures such as productivity, turnover rates and job satisfaction (Kopelman, Brief, & Guzzo, 1990; Siehl & Martin, 1990). Accordingly, the impact of climate on the workplace environment can function as a guide for acceptable behaviours but can also influence negative outcomes such as low job satisfaction or high turnover. A noteworthy contribution to understanding the impact of climate on health is found in the study by Agervold and Andersen (2006) who found a positive relationship between a poor social climate at work, workplace violence and the incidence of problems such as psychological fatigue and burnout affecting employee health resulting in high incidents of sick leave. Agervold (2009) similarly reported the link between organizational factors such as poor social climate and work pressure to reported incidents of bullying.

Accordingly, Moos (1981) described the social climate as the 'personality' of the working environment that has a strong influence on employees. The social climate consists of such factors as supervisor and peer support, involvement, task orientation and work

pressure. These are components of the workplace environment evidenced in the literature to influence the health of workers. A description of Moos' Work Environment Scales is provided in the Method Section. The conceptualization of the workplace climate utilized in this study therefore follows Moos (1981) Work Environment Scales and McHugh's (2007) Organization Health Practice scales. From the discussion above the following hypotheses are proposed:

Hypothesis 3: Social climate is positively associated with health practices and occupational bond, both indicators of a healthy workplace.

Hypothesis 4: Perceptions of people-oriented culture are positively associated with the relationship and growth dimensions of social climate.

Hypothesis 5: The relationship and growth dimensions of climate are strong predictors of employees' perceptions of higher-order satisfaction needs.

Hypothesis 6: Perceptions of a task-oriented culture are negatively associated with the relationship and growth dimensions of climate.

Leadership in the Workplace

Bolman (1997) depicts the 'energy' of leadership as the link between climate and performance outcomes. Similarly, Alvesson (1992) conceptualizes leadership as a social integrative action – a synthesis between the organization and the way in which leadership is exercised within the context of the organizational culture. Leadership is consistently described in the literature as an *influence process* in the development of the workplace environment in that the directions, values and expectations emphasized by a leader affects how organizational goals are achieved (Yukl, 2006). This aspect of leadership as an influencing process is reflected in the many definitions that exist in the literature. For

example, Bass (1990) reviews the many classifications used to define leadership such as: "leadership as the focus of group processes, as a personality attribute, as the art of inducing compliance, as an exercise of influence, as a particular kind of act, as a form of persuasion, as a power relation, as an instrument in the attainment of goals, as an effect of interaction, as a differentiated role, and as the initiation of structure" (p.20). The culminating definition that Bass proposes delineates effective leadership as "the interaction among members of a group that initiates and maintains improved expectations and the competence of the group to solve problems or to attain goals" (p.20).

Moreover, leadership as an influence process is well documented in the literature. Indeed, Steers and Porter (1975) posit leadership style as an important determinant of climate. The premise is that climate is the proximal working context of the individual and subject to the direct influence of immediate managers or supervisors – a premise which has accumulated ample support in the literature (e.g. Harter, Schmidt, & Hayes, 2002; Sarros, Gray, & Densten, 2002). Additionally, Block (2003) found that the leadership style of immediate supervisors was significantly related to employee perceptions of the organization which were, in turn, associated with higher levels of employee adaptability and involvement. Block also found that the consistency of perceptions within units was greater when organizational distance was small, in that reports transmitted from senior executives had a greater opportunity to influence employee perceptions when diffused through fewer organizational levels. These findings are unvarying from Bennis' (1989) position that effective management involves the creation of a vision that is held and articulated widely by senior managers and communicated clearly and in a consistent manner to all organizational members.

While there is a vast literature that associates effective leadership style with successful organizational change and strong financial performance (e.g. Bass, 1990; Lau & Shani, 1992; McShane, 2006), Kelloway and Barling (2010) link leadership to a variety of employee outcomes, both negative and positive, that are relevant to the concept of a healthy workplace. Their review of the extant literature draws clear links to leadership style and individual health and wellbeing. For example, leaders' unfair treatment of employees is associated with adverse outcomes such as psychological morbidity, alcohol abuse, impaired cardiac regulation and use of sick days (Colquitt, Conlon, Wesson, Porter & Ny, 2001). The emerging data support that more positive forms of leadership have a beneficial effect on employee well-being in that the quality of support from managers is linked with lower levels of perceived job stress/strain, burnout and depression. Positive forms of leadership have positive effects on employees. Nyberg and colleagues (2009) use the term 'good leadership' and define good leadership as consideration for individual employees, provision of clarity in goals and role expectations, supplying information and feedback, ability to carry out changes at work successfully, and promotion of employee participation and control, (p.51). The term 'constructive' leadership to positively engage employees in the workplace is used to describe 'good leadership' - which is more consistent with Einarsen's (1999) use of the term 'destructive leadership' discussed below.

Konrad (2006) describes employee engagement with the organization in three components – cognitive, emotional and behavioural. The cognitive component encompasses the employee's perception of the organization, its leaders and working conditions; the emotional component encompasses the employee's attitude towards the organization, its leaders and working conditions; and the behavioural component is

associated with outcomes such as participatory behaviours or turnover intentions. The necessity for constructive leadership in a healthy workplace is amply supported as described above by studies demonstrating that such leadership is associated with positive outcomes of psychological well-being, the positive meanings individuals attribute to their work, job satisfaction and low turnover (Arnold, Turner, Barling, Kelloway & McKee, 2007; Bono, Foldes, Vinson & Muros, 2007; Buchko, 2006; Rafferty & Griffin, 2006).

The necessity for constructive leadership style is not only demonstrated by these positive outcomes for employees, it is also demonstrated by the negative effects in the workplace when constructive leadership is absent. The inference from the literature is that a lack of effective leadership results in poorer competitive edge or financial performance (Conger, 1999). However there is an emerging literature that links destructive leadership behaviour to negative working climates. For example, Hansen and colleagues (2006) found constructive leadership to be positively related to psychological well-being and negatively related to bullying, also finding that negative social interaction was more harmful to workers than supportive interaction was helpful – bad is stronger than good (Baumeister, Bratslavsky, Finkenauer, Vohs, 2001). Furthermore, Hauge, Skogstad and Einarsen (2007) report that supervisors are the most frequent perpetrators of bullying in the workplace. Additionally, Einarsen (1999) reports that victims of bullying suffer symptoms akin to post-traumatic stress syndrome with victims reporting insomnia, various nervous symptoms, melancholy, apathy, lack of concentration and lack of organizational engagement. Einarsen, Aasland and Skogstad (2007) conclude that some leaders actively and intentionally behave in a destructive manner towards subordinates and organization. They offer the definition of destructive leadership as "the systematic and repeated behaviour by a

leader, supervisor or manager that violates the legitimate interest of the organization by undermining and/or sabotaging the organization's goals, tasks, resources, and effectiveness and/or the motivation, well-being or job satisfaction of subordinates" (p.208).

Consequently, the conceptualization of a healthy workplace necessitates the inclusion of the construct of leadership. The model of leadership for this study follows the model proposed by Bolman and Deal (1991, 1994). Bolman and Deal argue that effective leadership requires the ability to use multidimensional thinking to interpret situations and problems from multiple dimensions to guide informed decision-making. Accordingly, the ability to reframe organizational situations and events by shifting between four frames - structural, human resource, political and symbolic frames - improves leaders' ability to read and respond to the situation at hand (Bolman & Deal, 1991, p.510). The structural frame emphasizes rationality, efficiency, planning and policies. Bolman and Deal (1992, p.35) describe structural leaders as individuals who value policy, rules and chain of command and attempt to solve organizational problems by new policies and rules. The human resource frame focuses attention on the interactions between individual and organizational needs. A human resource perspective values facilitation, participation and empowerment. Political frame leaders are advocates and negotiators who value realism, pragmatism and compromises. The symbolic leader instills a sense of enthusiasm and commitment and provides a sense of mission and identity for individuals. Bolman and Deal (1992) suggest that the successful, effective leader is guided by all four frames and the greater the use of multiple frames the more constructive the leadership style. Thus, the above review suggests the following hypotheses:

Hypothesis 7: Social climate is a mediating variable between leadership and occupational bond; and between leadership and health practices.

Hypothesis 8: Leadership is positively associated with health practices and occupational bond, both indicators of a healthy workplace.

Summary

The theoretical framework for this study that is identified from the literature is that climate, as a proximal working environment, is an overt expression of culture - a distal working environment – linked together by leadership. The theory also implies that a workplace which balances a people-oriented culture meeting the higher-order needs of employees with a positive social climate, health practices and leadership is progressing towards a healthy workplace. As a criterion related study, we infer a healthy workplace from the outcomes measured which are organizational health practices and occupational bond. The tool used to measure organizational health practices was developed for this study; therefore, I provide details of the developmental process in Study 1 before progressing into the main research in Study 2.

The proposed framework (see Figure 1) for this study departs from previous research in one primary way – inclusivity.
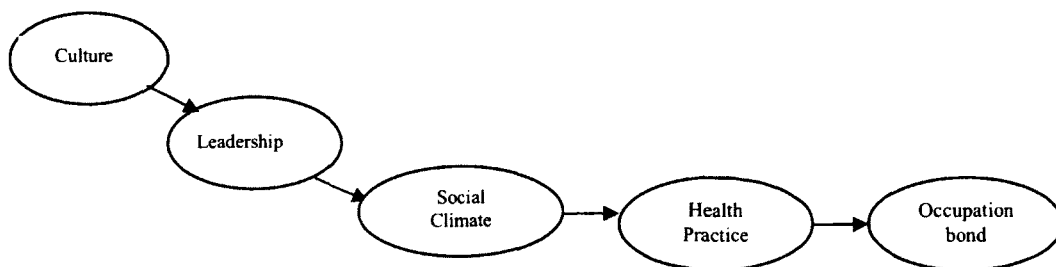
Figure 1. General model for a healthy workplace

Although the influences of culture, climate and leadership are commonly addressed in the literature these variables are not typically modeled simultaneously. The purpose of using the proposed comprehensive framework is to emphasize the differential impact of the various elements of the working environment on the health and well-being of the individual. However, it cannot be determined at this stage which variable, if any, will prove to be more important. But first, a description of the development of the Occupational Health Practices scale.

Study 1: Development of the Organization Health Practice scales

Background

The Organization Health Practice scales (OHP) began with the concept and development of a scale under the working title of the Workplace Wellness Scales (WWS) and is attributable to my work life experience facilitating the rehabilitation and return-to-work of individuals with acquired disabilities. For many years I recognized and appreciated the relevance of organizational culture and climate to the success of a worker's reintegration to the workplace; however, there was no available tool to benchmark the support for individuals with medical restrictions within an organization. My aim, therefore, was to develop (a) a pragmatic, functional scale linked to characteristics relevant to a healthy workplace from a structural perspective of health (i.e. organization's policies, practices and procedures), and (b) a scale that covered a wide-range of dimensions incorporated from research on healthy workplaces.

The workplace provides ample opportunities to improve the health and well-being of workers through a combination of organizational strategies. These strategies integrate preventive management, policy approaches, health promotion, occupational health and safety, and benefits packages. Accordingly, a broad-based approach blending these multiple types of interventions targeting the different levels of practice, (e.g. individual, work group, department or organization) has the potential to provide a concerted action plan towards building, supporting and promoting a culture of health, wellness and safety at work (Israel, Baker, Goldenhar, et al., 1996; WHO, 2006). These multiple types of interventions can be viewed as a continuum of interventions targeting the organization, the group and the individual. This continuum falls within the purview of primary, secondary,

and tertiary preventive strategies as described by Cooper and Cartwright (1997). Thus, the practice of primary prevention is to reduce or alter potential work-related risk factors to health at the organizational level by, for example, re-organizing work overload/stress (i.e., work design, workplace support) or through workplace policies (i.e. organizational as well as Human Resources policies, practices, and procedures). Secondary prevention aims to detect and monitor individuals or groups vulnerable to work-related health risk factors associated with some occupations by, for example, providing educational awareness programmes, stress management programmes or health monitoring (e.g. blood pressure screening) programmes. The practices of tertiary preventions focus on the individual already experiencing health issues or who has acquired a work disability. An example of a common practice at the tertiary level is the provision of employee assistance programmes, work maintenance or timely return-to-work programmes for injured or ill individuals. The OHP concentrates on employees' knowledge of these levels of interventions. Indeed, the guiding belief for the development of the scale was that the building of a specific climate begins with this shared knowledge.

The rationale for concentrating on shared beliefs is based in the work of Neal et al. (2000). Neal and colleagues investigated the mechanisms by which climate affects behaviour. In particular, these authors proposed that knowledge, skill, and motivation are important determinants of performance and that the relationship between climate and performance is mediated through these determinants. The logic of their hypotheses was that an individual must understand (knowledge) how to perform work safely and have the resource to be able to do it (skill) in order to comply (motivation) with safety procedures. They supported their hypotheses, some of which were that (a) knowledge predicts both

compliance and participation, (b) the strength of the specific climate predicts both knowledge and motivation, and (c) that the specific climate, knowledge and motivation mediate the relationship between organizational culture and specific related outcomes.

Consequently, the design of the OHP is to evaluate employees' knowledge of and attitudes towards the policies, procedures and practices supporting health, wellness, and safety at work. The premise for scale development was that if employees are to value a healthy workplace they must have knowledge of the pertinent policies, procedures and practices to be able to do so. The scale is divided into subscales of early intervention, work-safety, medical absence, and work-wellbeing. What is reported here is the initial development and testing of the OHP and its performance in capturing a workplace health climate across an organization.

Method

Research Sites and Participants

The development phase of the questionnaire was an iterative process involving four rounds of data collection that began with my Master's thesis and continued into my research practicum for the PhD. The validation phase was conducted to support the use of the scale in my PhD research. Employees from two long-term care facilities, and three small hospital settings in British Columbia were used to refine the items of the questionnaire. The validation sample composed a network of employees from Canada, England, Ireland, United States, and New Zealand.

Rounds 1 and 2 of data collection were used to create and pilot test a measure that would capture a broad knowledge of a healthy workplace. The initial pilot was conducted within a long-term care facility where 106 survey packages were provided to the manager

for distribution. This convenience sample (N=31; response rate 29%) was all female, predominantly 46-55 year age range (45%) with full-time, non-managerial or supervisory positions. The majority (52%) had between 0-5 years of service. Following analysis and rewording of items, secondary pilot data was collected in another residential setting where 70 survey packages were provided to the manager for distribution. This sample (N=24; response rate 34%) was predominantly female (96%), 29% were in the age range 46-55 years, 25% in the range of 26-35 years and the remainder were in the age range 36-45 years. The majority of this sample described itself as part-time (54%); 70% had between 0-5 years service; 29% performed managerial duties and 25% performed supervisory duties.

For Round 3 pilot of the 107 survey packages returned from three small hospital settings 86 included signed consent forms, were fully completed and deemed suitable for analysis. This was the poorer of the response rates at 9.7%. Females represented 87% of the sample; 60% of respondents were 45 and under; 78% described themselves as permanent and full-time employees, the description for the remainder was part-time and casual; the majority of respondents (41%) had less than 5 years length of service, followed by 20% reporting over 20 years service; 64% of the respondents indicated they had no managerial or supervisory duties. Fifty-one percent of respondents rated their job satisfaction as medium; 39% indicated it was high; and 7% rated their satisfaction with their job as low.

The sample for round 4 (N=108) was gathered by networking with contacts in the Hamilton Health Sciences in Ontario and snowballing the questionnaire thereafter. This method yielded 38 surveys from Ontario, 15 from British Columbia, 30 from England, 17 from Ireland, 4 from Michigan and 4 from New Zealand. Females made up 69% of the

sample; 54% of respondents indicated they were within the age ranges of 36-45 and 46-55 years, 19% were above age 55 years and 27% below age 36 (age ranges 18-25 and 26-35). The majority of respondents (32%) had between 3 to 5 years service and 27% reported over 20 years service with their employer. Half of the respondents indicated they had supervisory positions. Forty-nine percent reported they 'somewhat agreed' with the statement that they were satisfied with their job and 32% indicated they agreed with the statement.

Procedures

The item generation for the scale and the testing of its psychometric adequacy has occurred over many years. The steps involved mirror the typical development phases for survey research methods, for example, defining key concepts, question construction and refining through the iterative process of pilot testing, and testing the psychometric properties of the scales described by Lavrakas (2008). Thus the initial development of the survey was completed in collaboration with a Health Authority in British Columbia at a time when the organization was reviewing the direction of their workplace health, safety and disability management programmes. Focus meetings were held with key personnel of the Workplace Health and Safety unit and the Muscular-skeletal Intervention Programme. Items developed for the questionnaire were selected based on issues raised at these meetings and issues that were consistent with the theoretical literature on healthy workplaces. A draft of the questionnaire was then reviewed with various key personnel and union representatives to ensure sensitivity of the questions to the workplace. A large pool of items (99) constituted the initial questionnaire to ensure adequate coverage of the constructs being explored which were early intervention, work safety, work-wellbeing,

processes supporting medical absences and knowledge of medical absence practices. Processes and knowledge of medical absences were captured under the single working title of medical leave. Each pilot administration was followed by the procedure suggested by Field, (2004). Unsatisfactory items that did not discriminate adequately among the constructs (i.e., the range of points on the scale were not used or an over response on one point skewed the scale) were reworded for clarity and retested until finally redundant items were eliminated in round 3 following item reliability analysis and principal component analysis on each of the constructs. Thus, the survey brought forward for round 4 data collection constituted 31 items.

The distribution method used in rounds 1 and 2 of data collection proved more successful than that used in round 3. For the decentralized, long-term care facilities it was feasible to have the surveys clipped to each payroll stub and distributed through the normal in-house payroll route. This method proved less practical in the hospital settings as payroll was centrally distributed from the head office. The alternative method used was to distribute the survey through site managers. This, however, was not as successful and only yielded a response rate of 9.7% for round 3 compared to 29% and 34% for round 1 and 2.

Distribution for the validation sample was initiated at Hamilton Health Sciences, Ontario, from where the survey was electronically cascaded from one contact via another. Upon receipt of each new response an acknowledgement was emailed to the sender along with a covering letter providing details of the survey and requesting further distribution among colleagues. Over a period of 4 weeks 108 surveys were returned electronically.

Table 1 presents the flow of activity to develop and hone the scale.

Table 1

Scale Development Activity

Timeframe		Construct Titles	Sample size	Items	Activity	Outcome
Master's Research		Perceptions of DM	72	14	Factor Analysis	Construct
		Policies for DM		14		explication
PhD Practicum Research	Round 1	Work-Health- Wellbeing	31	29	Looking at range	Rewording
		Work-Safety- Prevention		21	and skewness of	items for
		Medical Absence – Support		23	item responses	clarity and
		Policies for early				coverage
		intervention & RTW		13		
		Perceptions for early				
		intervention & RTW		13		
	Round 2	Same as round 1	24	99	Same as round 1	Same
	Round 3	Early Intervention	86	29	Item Reliability	Identify poor
		Work Safety		21	Analysis for	items to
		Work Wellbeing		23	constructs	eliminate
		Medical Leave: Process		13		
		Medical Leave: Knowledge		13	Component	showed uni-
					Analysis on each	dimensionality-
					of the construct	of scale
					measurements	
PhD Research	Round 4	Early Intervention	108	8	Factor Analysis	Showed
		Work Safety		8	on 31 items	Interpretablility
		Work Wellness		9		of factor
		Medical Leave: Process		3		structure for
		Medical Leave: Knowledge		3		constructs

Note DM = Disability management
Note RTW = Return to work

Measure

Description of the Organization Health Practice (OHP) scales. The belief guiding

the development of the survey was that the building of a specific climate begins with shared

knowledge. Consequently, the measure developed is (a) a pragmatic, functional scale

linked to characteristics relevant to a healthy workplace from a structural perspective of

health (i.e., organization's policies, practices and procedures), and (b) covered a wide-range

of work-wellness-health constructs incorporated from research on healthy workplaces.

Each statement was self-scored on a 5-point Likert type scale ranging from 1 (disagree) to 5 (agree). The constructs and sample items of the final version of the scale are described as follows.

Early intervention (8 items). This construct focuses on employees' perceptions of the level of support for individuals on return-to-work programmes in the workplace with questions such as "I believe my workplace would be supportive of employees on early return-to-work programmes after their medical leave." Shoemaker, Robin and Robin (1992) found that the level of acceptance from employees to such interventions could act as either a driving force in accepting the intervention or a restraining force in rejecting the intervention. Indeed it is empirically supported that successful implementation of intervention programmes is jeopardized without a receptive environment (Amick, et al., 2000; Harder, McHugh, Wagner & Harder, 2006; McHugh, 2005). Accordingly, it is necessary to develop an infrastructure, such as policies and procedures, but it is also necessary to understand the perceptions and attitudes of employees' towards the intervention.

Medical Leave - Process: (3 items). This construct continues the focus on the knowledge aspect of a supportive work climate. There is much research to support the therapeutic value of work in the recovery process. For example, there is ample research supporting the benefits of early return-to-work (RTW) plans, in that RTW plans allow for physical reconditioning, re-education on safe work practices and progressive upgrading of work activities (e.g. Shrey, 1996, 1998; Durand & Loisel, 2001).

Medical Leave − Knowledge (3 items). However, it is also consistently demonstrated that policies and procedures are not broadly communicated to employees

(Abakas & Gates, 1990; Friesen, Yassi, & Cooper, 2001). For example, Krause, Dasinger and Neuhauser (1998) found only 20% of the disability claimants sampled had knowledge of return-to-work programmes. Furthermore, it was found that for those individuals who had knowledge of the programmes a return to work was twice as likely compared to individuals who had no knowledge of the programmes. Friesen et al., (2001) further described workers' lack of knowledge as a barrier to the effective implementation of such interventions. Therefore, this construct taps into the extent of employees' knowledge of the organization's programmes and procedures through statements such as "In the event I am absent from the workplace for a period of time on medical leave I know the return-to-work options available to me for non-occupational related absences (e.g. sickness)." The two parts of the Medical Leave construct makes the distinction between the process of medical leave in the workplace and knowledge of resources related to medical leave.

Work-safety (8 items). A safe work environment and safe work behaviours are important contributors to the overall health and wellness of employees. Therefore, it is important that the scale measures the indicators that have been identified through the literature as reliable predictors of safety-related outcomes. These indicators include management values (e.g. management concern for employee well-being), management and organizational practices (e.g. provision of safety equipment), communication, and employee involvement in workplace health and safety (Zohar, 2002; Zohar, 2003; Zohar & Luria, 2004). These aspects of workplace health are measured through a range of questions scored on a 5-point Likert type scale such as: "I believe the organization makes worker safety a high priority"; "the organization provides me with the small things that can

improve my safety"; "the organization accepts suggestions on how to improve safety practices".

Work-wellbeing (9 items). Work-health can be enhanced or hindered depending upon the level of workplace engagement demonstrated by the employer and reciprocated by the employee. Employer commitment to and engagement in providing and promoting a positive psychosocial environment is cited as a cornerstone of healthy workplaces (Cooper & Cartwright, 1994). The scale focused on employees' perceived benefit of engaging in wellness programmes with such statement as "I believe participating in workshops or sessions would be good by improving how I feel about myself." All items are scored on a 5-point Likert type scale.

Results

Various methods of analysis were used as the honing and development of the scale progressed. Initially the range and skewness of item responses were viewed such that items showing a limited range of response options or items which were highly negatively or positively skewed were reworded and re-administered. Items were also assessed using item reliability analysis to assess the internal consistency of the constructs (Gliem & Gliem, 2003). Items not consistent within the constructs (i.e., coefficients < .4) and not correlating well with the other items in the construct were removed to improve the internal consistency of the construct. Still in the theory testing stage of survey development principal component analysis (PCA) was used in round 3 as a data reduction method (Field, 2004). The benefit of PCA in theory building is that the total variance is considered in the solution allowing for a less stringent analysis than factor analysis which partitions the variance (shared, unique and error variance) and only considers the shared variance in the solution (Tabachnick & Fiddell, 2001). This less stringent approach is appropriate to this stage of development (Field, 2004) while the more stringent approach of factor analysis is employed at the later stage to test the interpretability and dimensionality of the scale.

Although PCA is described as a large sample procedure, Costello and Osborne (2005) found that current practice used subject-to-variable ratios of less than 5 in 40.5% of cases. Furthermore, MacCallum, Widaman, Zhang and Hong (1999) demonstrated that high loading, simple structure and high communalities permit the use of PCA with samples less than 100. Costello and Osborne similarly support that stronger data can use smaller samples. The strategy adopted of testing, evaluating, honing items and retesting the items in round 1 and 2 was undertaken to strengthen the items as sample size was consistently

small. Even by round 3 the combined item pool was still larger than the number of respondents (86). It must also be considered that workplace health is a molar latent construct without clear definition in the literature. The dimensions selected here operationalize the concept of workplace health and reflect pertinent aspects of workplace health identified though the literature. The dimensions are not singularly sufficient for, nor an exhaustive composition of, workplace health. Therefore it was reasonable to analyze the dimensions independently to improve the item to subject ratios and to get a meaningful result from the PCAs to strengthen the theory behind the construct.

Primary Analyses

What is reported here is the primary analysis conducted with the data set gathered in round 4 using 31 items. The purpose of round 4 was to test whether the 31 items revealed an interpretable structure. To assess this Factor Analysis using maximum likelihood extraction and varimax rotation was conducted. Maximum likelihood extraction partitions the variance so only shared variance is in the solution and varimax rotation assumes the factors are orthogonal (i.e., independent of one another) and together this procedure produces a cleaner, more interpretable solution than using PCA alone (Costello & Osborne. 2005).

The Kaiser-Meyer-Olkin test of sampling adequacy was .83 which indicates a high proportion of variance in the variables is attributable to the underlying factors. Bartlett's test of sphericity is also significant indicating the data is suitable for conducting a factor analysis. The chi square was significant; however, the critical N should be ≥ 200 when an assessment of goodness-of-fit is being carried out, particularly when a non significant chi square is used to indicate a good fit. Given the known sensitivity of this statistic to sample

size and given the sample size is below the critical N, the chi square/degrees of freedom ratio was used to determine adequate fit between the data and the theory (Byrne, 2010; Kenny & McCoach, 2003). A heuristic given for a reasonably good fit is 2 or below. In this instance it was 2 (χ^2= 598.03/ *df*=294).

The criteria used to determine the number of factors to rotate were the scree test and the interpretability of the factor solution. Six factors were rotated using a Varimax rotation procedure. Using a cut-point loading rating of 0.3 (Tabachnick & Fidell, 2001) the rotated solution, as shown in Table 2, yielded five interpretable factors consistent with the constructs previously examined using PCA. These factors accounted for 67% of the variance. The five factors that were extracted from the FA are presented in Table 2.

Item-total correlations are presented in Table 3. The table presents the item-total in columns 3 and 4. Column 3 of the table represents the corrected item-total correlation for the items in the factor (i.e., the correlation of the designated item with the summated score of the remaining items in that factor) and demonstrates that the multiple items designed to measure the construct do inter-correlate with one another. Column 4 represents corrected item-total correlation for the designated item with the summated score of the remaining items in the scale and shows internal consistency with all items. The heuristic for this value is .4 (Gliem & Gliem, 2003). Cronbach's reliability alpha for the scale was .92.

Thus far the development of the OHP has adhered to the major steps outlined by Spector (1992) for scale development (i.e., construct definition, scale design, pilot testing, administration and item analysis). This development is also consistent with Spector's four prerequisite characteristics for a summated rating scale. These include (1) multiple items in each dimension, (2) each item is a statement that is rated by respondents, (3) there is no

right or wrong answer to the statements, and (4) the use of a quantitative scale. The OHP

meets these characteristics.

Table 2

Organization Health Practice Scale: Rotated Factor Matrix (N=108)

	Factor 1 Work Wellness	Factor 2 Work Safety	Factor 3 Early Intervention	Factor 4 Medical Process	Factor 5 Medical Knowledge
Item 1			.718		
Item 2			.734		
Item 3			.791		
Item 4		.353	.643		
Item 5			.519		
Item 6			.564		
Item 7			.445		
Item 8			.657	.319	
Item 9				.761	
Item 10				.841	
Item 11				.807	
Item 12					.814
Item 13					.858
Item 14					.714
Item 15		.759			
Item 16		.704			
Item 17		.754			
Item 18		.748			
Item 19		.624			
Item 20		.887			
Item 21		.895			
Item 22		.886			
Item 23	.855				
Item 24	.896				
Item 25	.906				
Item 26	.872				
Item 27	.801				
Item 28	.819				
Item 29	.725				
Item 30	.859				
Item 31	.859				

Extraction Method: Maximum Likelihood.
 Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.
Note: Loadings below the .3 cutoff are not listed in the table

In terms of classical test theory (i.e., a measure is composed of a true score and error score), the reliability indices reported for the OHP for this study indicates the measure has excellent reliability and that it is performing well. The reliability pertains to the consistency of and stability of the measurement across different measurement conditions (e.g. organizations, countries, or samples). For example, several rounds of data collection with different samples highlighted the consistent performance of the items across contexts specifically relating to item reliability and component and factor analysis (Poortinga, 1989). The preliminary results from earlier rounds of data collection demonstrate similar reliability and consistency across different samples. The use of an international sample of individuals from different employment backgrounds demonstrated the cross-cultural equivalence of the measure in that the data collected yielded a Cronbach's alpha of .92 for the scale and an identical dimension structure when using PCA on a Canadian sample and when using FA on the international sample. More specifically the results in Table 3 demonstrate the internal consistency of the measure and thus, support the use of the OHP in Study 2. In the longer term it would be also important to further establish the measurement equivalence across different contexts but that effort is beyond the scope of the present study, and future concentration on this issue is warranted.

Table 3

Item-total Correlation for the 31 Items Retained (alpha = .92)

Factor (item #)		Item description	Item[a]	Total[b]
1.Work				
Wellness	(23)	Improving how I feel about myself.	.76	.52
	(24)	Having more energy for the day's activities.	.79	.50
	(25)	Improving my mood during the day.	.83	.51
	(26)	Coping better with my workload.	.80	.56
	(27)	Catching early signs of illness.	.71	.43
	(28)	Coping better with stress.	.80	.54
	(29)	Reducing time off work for sickness.	.75	.49
	(30)	Better productivity.	.80	.53
	(31)	A healthier workforce.	.78	.49
2.WorkSafety				
	(15)	pays attention to my physical working conditions.	.67	.61
	(16)	provides a safe environment for me to work in.	.80	.64
	(17)	makes worker safety a high priority.	.79	.59
	(18)	provides me with small things that can improve my safety.	.67	.51
	(19)	have procedures to ensure my personal safety.	.75	.59
	(20)	listens to my safety concerns.	.82	.64
	(21)	addresses my safety concerns.	.80	.65
	(22)	accepts suggestions on how to improve safety practices.	.83	.64
3.Early				
Intervention	(1)	provided modified work shifts or schedules.	.52	.30
	(2)	provided other duties while they continue recovery.	.62	.39
	(3)	provided assistive devices/tools to help them do their job.	.50	.44
	(4)	supervisor support for employees who need job modifications.	.67	.50
	(5)	help individuals with work limitations/restrictions to keep their jobs.	.51	.46
	(6)	I support the concept of early intervention and RTW programs.	.49	.48
	(7)	I would be supportive of a colleague on a return-to-work program.	.43	.42
	(8)	supervisors are supportive of employees on early RTW programs.	.67	.66
4.Medical	(9)	provided with information about my benefit package.	.80	.64
Leave	(10)	provided with information on the return-to-work options available.	.83	.57
Process	(11)	provided with information on the rehabilitation resources available.	.78	.63
5.Medical	(12)	options available to me for non-occupational related absences.	.80	.54
Leave	(13)	options available to me for work related incidences	.84	.51
Knowledge	(14)	process for changing my return-to-work plan.	.77	.58

Note [a] =   Corrected Item-total correlation by factor

Note [b] =   Corrected-Item-total correlation by scale

Discussion

Guided by the safety climate literature, the basic premise for developing this scale is that the precursor to building a climate valuing the health, wellness and safety of employees begins with shared knowledge. The result of this initial developmental phase is a pragmatic benchmarking instrument that evaluates concrete knowledge of policies, practices and procedures relating to health, wellness and safety at work. The importance of shared knowledge in the creation of a climate is relevant to the development of norms that implicitly govern attitudes, beliefs and expectancies regarding work-related behaviours, interpersonal relations and the nature of organizational support (Hammer, Saksvik, Nytro, Torvatn & Bayazit, 2004). Inherent to the successful development of a healthy workplace is a participative and collaborative process. Moreover, knowledge of the organizational practices, policies and procedures develops the norms and expectancies within which a participative and collaborative process operates. It is well understood that policies have both a formal statement and an informal style by which they are implemented or interpreted. It is only by fostering awareness among all employees of acceptable norms and expectancies that a healthy workplace can develop. Communication channels need to be sufficiently broad enough to reach all employees. Open and broad communication is cited in the literature as a key element of successful implementation of initiatives (see for example Westmorland & Williams, 2002). Without strong communication the framework of a healthy working environment may be difficult to foster. The utility of the OHP is in the important first step of benchmarking before implementing workplace health initiatives.

Finally, the concept of climate is imprecisely defined in the literature because climate is a molar and multidimensional construct. Therefore, I centered the OHP on the

knowledge component as a mechanism for building a health climate – i.e., shared knowledge and perceptions. While all of the work done in Study 1 was exploratory in nature, the pattern of results thus far is consistent with the theory as outlined in Figure 1. Additionally, the psychometric work has demonstrated sufficient reliability and content validity for the OHP to be included as a dependent variable in the substantive research reported in Study 2. Furthermore, the scale demonstrates properties consistent with Spector's (1992) four prerequisite characteristics for a summated rating scale listed previously.

The evidence is sufficiently strong for the OHP at this juncture to support its use as a dependent variable in Study 2. However, for future direction my aim is to continue to refine and establish the generalizability of the scale across different contexts using confirmatory methods such as structural equation modeling in order to support inferences about causal relationships and to substantiate the utility of the tool in the workplace.

Study 2: An Examination of the Influence of Culture, Climate and Leadership as Drivers of

a Healthy Workplace

The main study examined the influence of organizational culture, social climate, and leadership style as drivers of a healthy workplace. The central premise for this study is that the full potential of a healthy workplace is optimized when it is set within the framework of an organizational culture and work climate that values the health of individual workers. Consequently, the selected measures used explore the organization's culture, climate, leadership and practices as internal processes that influence the development of a healthy workplace.

Method

Research Sites

Two strategies were deployed to gain access to organizations. One was to position the project as original research sponsored through the National Quality Institute (NQI) and second was cold-calling to organizations. The NQI is a federally sponsored organization committed to promoting healthy workplaces. Initial contact was with the Vice President of the NQI in Ontario and the research project was successfully endorsed. Thereafter, the NQI consultants contacted organizations within their network to secure a research site. It is not known how many companies were contacted this way. One company, a regional council in British Columbia, responded to the call. Following a site visit the Human Resource Director was eager to commence with the project, however, budget and staff time allocation for the project were not approved by the financial committee; therefore, no advance was made at this site.

The researcher also contacted organizations directly. Invitations to collaborate with this study were emailed to 54 Human Resource Directors from organizations within Canada, United States and England. Of these, 34 responded to the email with a kind decline and 12 responded with interest and a willingness to bring the research proposal forward for additional discussion with officials of the organizations. Two sites withdrew following this discussion indicating they were unable to get the necessary support to participate in the research at that time. Site visits were arranged with the remaining 10 HR directors. Thereafter two site directors pleaded time constraints and withdrew. Four sites gave tentative approval to involve several of their divisions in the research but requested return visits to finalize distribution details. Unfortunately, over the course of many more site visits and months of start-up delays and postponements, these four organizations withdrew – one citing the changing economic situation, the second opting for a consultancy to conduct the study, the third declining as a consequence of unexpected difficulties with their merger, and the fourth site opted for their HR department to conduct the survey thus eliminating the need for the student research. Three sites promptly agreed to proceed and distribution of the surveys began within a week of January 2010. The final site, a third level education site, was undergoing a restructure of staffing levels and a campus new build, therefore, the start-up was postponed for seven months until all of this was nearer completion.

The four sites that completed the study were located in the Midlands, England. The first of the organizations was a distribution centre with an estimated 120 full-time, non-contractual employees who were eligible to participate. The second site was a 24 hour production site with approximately 60 full-time, non-contractual employees who were

eligible to participate. The third site handles the distribution logistics for the production site; however, it is an independent operation under contract to the production site. This third site has approximately 60 full-time employees running three shifts. The fourth site was an educational college with six centres across the Midlands. The researcher was granted access to one of the campuses before the start-up of the new academic year. Although 450 academic staff and administrators typically work from this campus during active semesters, only a skeleton staff was present during the period of survey distribution.

Participants

A total of 162 individuals volunteered to participate in the study (121 male and 41 female, mean age range of 36-45 years, mean range for length of service = 6-10 years, only 34 individuals performed supervisory/managerial duties). The criteria for participation were full-time, non-contractual employees with a minimum of three years service. These criteria were set by the researcher to ensure that the participants were familiar with the climate, culture and leadership style within their organizations.

Predictor Measures

Data was collected for the predictor variables using the three self-report measures; the *Organizational Culture Inventory®* (OCI), *Work Environment Scale* (WES), and the *Leadership Orientation Survey* (LOS).

Organizational Culture Inventory® (Cooke & Lafferty, 1989). The Organizational Culture Inventory (OCI) is a 120 item questionnaire containing 12 subscales of ten items each that assess behavioural norms that are expected of members in an organization. Responses for all items were scored on a 5-point Likert type scale (1 represents behaviours were not expected; 5 = behaviours were expected to a very great extent).

Table 4

OCI Subscales, Dimensions and Reliability Statistics (N=162)

Construct From Figure 1	Measure	Number of items	Measure subscales (number of items)	Subscale Reliability Alpha	Measure dimensions (number of items)	Applied in hypothesis
Culture	Organization Culture Inventory (OCI)	120		.96		
			Achievement (10)	.92	Higher-order	$H_{1a,1b}$
			Self-actualizing (10)	.91	satisfaction	$H_{5a,5b}$
			Humanistic-encouraging (10)	.95	needs (30)	
			Dependence (10)	.85	Lower-order	
			Avoidance (10)	.87	Security	
			Oppositional (10)	.79	Needs (30)	
			Affiliative (10)	.94	People-orientated	$H_{4a,4b}$
			Approval (10)	.87	orientated	
			Conventional (10)	.87	culture (30)	
			Power (10)	.88	Task-oriented	$H_{2a,2b}$
			Competitive (10)	.89	culture (30)	$H_{6a,6b}$
			Perfectionistic (10)	.87		

Note: Each measure dimension in column 6 is the summation of subscales in column 4

The ten corresponding response scores for each subscale are summed to obtain the subscale score. Table 4 presents the reliability statistics for the subscales and shows the make-up of the dimensions used in hypothesis testing.

The 12 subscales describe a cluster of dimensions that promote higher-order satisfaction needs (achievement, self-actualizing, and humanistic-encouraging) versus lower-order security needs (dependence, avoidance, and oppositional). The 12 subscales also distinguish a culture that is task-orientated (perfectionistic, competitive, power) versus a culture that is people-orientated (affiliative, approval, conventional).

These patterns of behavioural norms reflect expectations by which members are encouraged "to interact with *people* and approach *tasks* in ways that will help them to meet their higher-order *satisfaction* needs" and distinguish cultures in which members "interact

with *people* in ways that will not threaten their own *security*" or "approach *tasks* in a

forceful way to protect their status and security" (Human Synergistics, 2003, p.3). A

sample question measuring a higher-order need is "To what extent are people expected or

implicitly required to work for a sense of accomplishment?" A sample item used to

distinguish a security need is "To what extent are people unsure whether they are allocating

their time properly?" Task-oriented cultures tend to place relatively little value on people

and a sample measure is "To what extent are people expected to compete rather than

cooperate?" People-oriented culture treats members with respect regardless of background

and is captured with questions like "To what extent are opportunities for training and

advancement fair and equitable?"

Table 5

WES Subscales, Dimensions and Reliability Statistics (N=162)

Construct From Figure 1	Measure	Number of items	Measure subscales (number of items)	Subscale Reliability Alpha	Measure dimensions (number of items)	Applied in hypothesis
Social Climate	Work Environment Scale (WES)	90		.91		$H_{3a,3b}$ $H_{7a,7b}$
			Involvement (9)	.77	Relationship (27)	H_{4a}
			Peer Cohesion (9)	.65		H_{5a}
			Supervisor Support (9)	.74		H_{6a}
			Autonomy (9)	.63	Personal Growth or Goal Orientation (27)	H_{4b}
			Task orientation(9)	.67		H_{5b}
			Work Pressure (9)	.67		H_{6b}
			Clarity (9)	.63	System Maintenance /Change (36)	
			Control (9)	.37		
			Innovation (9)	.78		
			Physical Comfort (9)	.64		

Note: Each measure dimension in column 6 is the summation of subscales in column 4

Work Environment Scale (Moos, 1974, 2008). The Work Environment Scale

(WES) is a 90 item, true-false questionnaire comprising 10 subscales which assess

perceptions of the social environment of work (e.g. Involvement, Peer Cohesion, Supervisor Support, Autonomy, Task Orientation, Work Pressure, Clarity, Control, Innovation and Physical Comfort). The item responses are scored 0 or 1 using the WES key card. Table 5 presents the reliability statistics for the subscales and shows the make-up of the dimensions used in hypothesis testing.

The nine corresponding response scores for each subscale are summed to obtain the subscale score. These 10 subscales are divided into three sets – the Relationship Dimension, the Personal Growth or Goal Orientation Dimension and the System Maintenance/Change Dimension. The Relationship Dimension assesses "how committed employees are to their jobs, how friendly employees are, how supportive they are of each other, and how supportive managers are of employees" (Moos, 1974, 2008, p.20). The Personal Growth or Goal Orientation Dimension assesses "independence, getting the job done, and job demands" (Moos, 1974, 2008, p.21). The System Maintenance/Change Dimension focuses on "the work setting's emphasis on rules and policies and on variety and innovation" (Moos, 1974, 2008, p.20). Reliability analysis for this study was .91 for the scale; however, the range for the subscales presented in Table 5 was lower than that reported by Moos.

Leadership Orientation Survey (Bolman & Deal, 1991). The Leadership Orientation Survey (LOS) is a 32 item instrument with a five point response scale distinguishing how often each behaviour is displayed (1 = never to 5 = always). The instrument measures eight subscales of leadership (Supportive, Participative, Analytic, Organized, Powerful, Adroit, Inspirational and Charismatic) with each subscale containing four items. The response scores from the corresponding items are summed to obtain the

scores for the four leadership frames proposed by Bolman and Deal. The reliability for the scale in this study was .96. Table 6 presents the reliability statistics for the subscales and shows the make-up of the dimensions. The summed Leadership score was used in hypothesis testing. Table 6 presents the reliability statistics for the subscales and shows the make-up of the dimensions used in hypothesis testing.

Table 6

LOS Subscales, Dimensions and Reliability Statistics (N= 162)

Construct From Figure 1	Measure	Items in measure	Measure subscales (number of items)	Subscale Reliability Alpha	Measure dimensions (number of items)	Applied in hypothesis
Leadership	Leadership Orientation Scale (LOS)	32		.96		$H_{7a, 7b}$ $H_{8a, 8b}$
			Analytic (4)	.90	Structural Frame	
			Organized (4)	.85	(8)	
			Supportive (4)	.90	Human resource	
			Participative (4)	.86	Frame (8)	
			Powerful (4)	.87	Political Frame (8)	
			Adroit (4)	.87		
			Inspirational (4)	.91	Symbolic Frame	
			Charismatic (4)	.89	(8)	

Note: Each measure dimension in column 6 is the summation of subscales in column 4

The Structural Frame portrays the organization as a hierarchical system with clearly defined jobs, established procedures and processes and pre-determined chains of command. The Human Resource Frame is more likely to use participatory decision-making and attempts to align organizational needs and human aspirations. The Political Frame emphasizes that decisions are made through processes of bargaining, influencing and coalition building. The challenge is to balance the interests of other stakeholders with the needs of the organization. The Symbolic Frame sees the organization as a cultural system

of shared meaning that is created from within and helps the organization fulfill its vision. Leadership frames are used in a variety of instances in the workplace, for example to solve problems or interpret events by influencing the type of questions asked or information collected. Bolman and Deal (1997) suggest that the successful, effective leader is guided by all four frames and the greater the use of multiple frames the more constructive the leadership style.

Criterion Measures

During the negotiations with the initial organization which intended to host this study access was granted to company records for annual accident rates and categories of absence rates across the proposed six sites that the company planned to survey. This did not materialize therefore, the outcomes measured to infer a healthy workplace were limited to the self-reported perceptions of organizational health policies and practices, and occupational bond which is a composite variable of measuring organizational fit, organizational affiliation, and job satisfaction.

Organization Health Practices scale (McHugh, 2007). The Organization Health Practices (OHP) scale is a 31 item questionnaire containing 5 subscales relating to dimensions of work-wellbeing, work-safety, early intervention and medical-leave process and knowledge. The items were self-scored on a 5-point Likert type scale. The OHP is a newly developed scale and its initial administration yielded cronbach's alpha ranging from .96 to .84 across the constructs. A description of the development of the OHP is provided in Study 1. For this study the reliability statistics for the composites are presented in Table 7.

Table 7

Organizational Health Practice scale, Construct Composites and Reliability Statistics

Construct From Figure 1	Construct composites (number of items)	Composite Reliability Alpha	Applied in hypothesis
Organizational Health Practice (OHP)		.93	$H_{1a}, H_{2a}, H_{3a}, H_{7b}$ H_{8a}
	Work Wellness (9)	.94	
	Work Safety (8)	.93	
	Early Intervention (8)	.82	
	Medical-leave Process (3)	.90	
	Medical-leave Knowledge (3)	.90	

Note: OHP scores are the summation of subscales in column 2

Occupational bond is a latent construct measured as a composite of organizational fit, organizational affiliation, and job satisfaction. Reliability statistics for the composites are presented in Table 8.

Organizational 'fit' was a self-reported measure of how well the individual perceived their fit as a member of the organization. For example, the statement "does your job require you to think and behave differently than would otherwise be the case?" was rated on a five-point scale (1= disagree; 5= agree) to identify organizational 'fit'. Seven statements were used to explore this variable.

Organizational affiliation was a self-reported, five-point measure (1= disagree; 5= agree) that tapped into how much an individual identified with their organization. Meyer, Stanley, Herscovitch, and Topolnytsky (2002) concluded that positive work experiences are associated with increased affiliation with the organization. Six items were used to probe this variable. An example of an item was "I would recommend this organization to someone like myself as a good place to work".

Job satisfaction refers to an individual's global feeling about their job (Spector, 1997). Five items assessed job satisfaction. For example the level of agreement with the statement "Overall, I am satisfied with the kind of work I do" was rated on a five-point scale from Disagree (1) to Agree (5).

Table 8

Occupational Bond, Construct Composites and Reliability Statistics (N= 162)

Construct From Figure 1	Construct composites (number of items)	Composite Reliability Alpha	Applied in hypothesis
Occupational Bond		.89	H_{1b}, H_{2b},
	Organizational Fit (7)	.66	H_{3b}, H_{7a},
	Organizational Affliation (6)	.84	
	Job Satisfaction (5)	.85	H_{8b}

Note: OHP scores are the summation of subscales in column 2

Procedures

Ethics approval for this study was received from the Ethics Committee at the University of Northern British Columbia. Each organization issued a Statement of Support for the research prior to the commencement of data collection. The method of distribution varied depending upon the level of access granted to the researcher in the four sites.

Site A. This site is a distribution centre on a 24 hour operation and data was collected from individuals on each of the three shift rotations. Simultaneous team briefs are held for the various work units at different locations on the shop-floor at the start-up of each shift. The first ten minutes of the brief was allocated to the researcher for introductions, recruitment and distribution of surveys. The researcher was assigned the largest of the six teams working the day and afternoon shifts while the team leads briefed all other work units on behalf of the researcher. The night shift operates with fewer workers so it was feasible

to gather the full complement of workers at one location for survey distribution. The researcher was on site for eight days.

The four surveys were distributed in two rounds. On round 1 the participants received a numbered envelope containing two questionnaires, an information sheet, and a consent form. When the questionnaires were completed the participant substituted their envelopes for round 2 questionnaires. The order of the questionnaires was counter balanced to avoid response bias. Of the 120 packs distributed, 89 individuals completed and returned round 1 and 83 completed and returned round 2. However, 7 of the packs did not have a signed consent form and one respondent did not have 3 years service, leaving a total of 75 suitable packs that were brought forward for further analyses. This represents a response rate of 62%.

Site B. Site B is a soft drinks manufacturer operating two shift rotations. For security and safety reasons the manager of the site preferred to distribute the questionnaires himself. The researcher had no access to the workers or control of distribution. As a result no rapport was established between the workers and the researcher. Of the 60 survey packs prepared for the site only 26 were completed reflecting a response rate of 43%.

Site C. Site C operates on a three shift cycle and handles the distribution logistics for Site A. Of the 60 employees eligible for the study 38 completed surveys packs representing a response rate of 63%. Procedures were slightly different than in the other sites. Here the site manager provided an office with seating arranged at a desk for three employees and the researcher. The researcher was onsite during the overlapping hour between the day and afternoon shifts. The team leads organized and released three employees each day to meet with the researcher and complete the surveys. Night shift

workers were emailed the surveys and had the option to print and complete during their night shift duties. All employees who participated in the research were paid an hour's overtime. All four surveys were completed in one sitting (35-45 minutes) and the surveys were counterbalanced to avoid response bias. No two participants worked on the same survey during the sitting. The researcher spent eight days on site.

Site D. This site is a higher education college with 6 campuses in the Midlands. The researcher was permitted access to the refectory of 1 campus to set up a booth during the week prior to the start-up of the September semester. The College released an emailed notice of attendance to all staff and posted announcements on notice boards around the college. Of the 62 survey packs distributed from the booth, 22 individuals returned completed surveys. This represents a response rate of 35%.

Analyses and Hypotheses

The research sample size for this study was estimated using multiple regression analyses and three predictors (culture, climate, and leadership) requiring a total of 76 participants when power = .80, α=.05 and medium effect size, i.e. f^2. = .15 (Cohen, 1992). A total of 162 employees participated in the study; 75 from Site A, 26 from Site B, 39 from Site C and 22 from Site D. Cohen's power study demonstrates the sample size in this study is adequate, such that, there is a greater than 4 out of 5 chance of finding significant results when the hypotheses effects are actually there.

This research is guided by one broad premise that organizational culture, climate and leadership style are predictive of a healthy workplace. The general model was presented earlier as *Figure 1*. I argue that the constructs of culture, leadership and climate are the primary internal processes that influence the development of a healthy workplace.

The theoretical framework identified from the literature is that climate, as a proximal working environment, is an overt expression of culture – a distal working environment-linked together by leadership style.
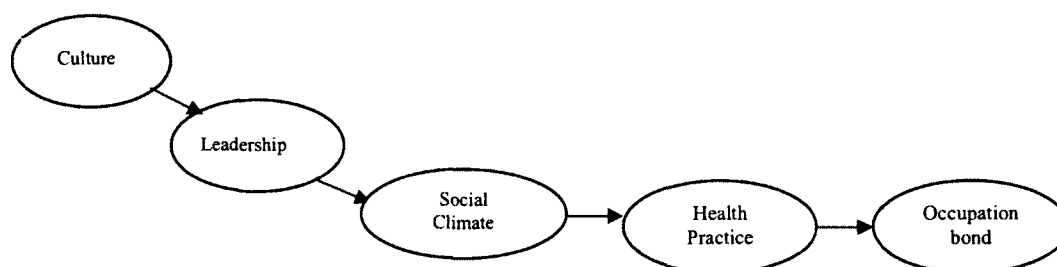
Figure 1a. General model for a healthy workplace

While it is recognized that culture and climate co-exist in the reality of the workplace, these two concepts are not normally measured within the same study. Therefore, the literature offers no a priori expectation as to which of the two, culture or climate, is more influential than the other. Nor indeed, can the direction (proximal to distal or distal to proximal) of the influence be deduced from the literature. To test the general hypothesis, therefore, combinations of subscales are used to further probe the influence of culture, leadership style, and climate on healthy workplaces.

Hypothesis 1: Organizational culture perceived to meet higher-order satisfaction needs is positively associated with health practices and occupational bond, both indicators of a healthy workplace.

Hypothesis 2: Task-oriented culture is negatively associated with health practices and occupational bond, both indicators of a healthy workplace.

Hypothesis 3: Social climate is positively associated with health practices and occupational bond, both indicators of a healthy workplace.

Hypothesis 4: Perceptions of people-oriented culture are positively associated with the relationship and growth dimensions of social climate.

Hypothesis 5: The relationship and growth dimensions of social climate are predictors of employees' perceptions of higher-order satisfaction needs.

Hypothesis 6: Perceptions of a task-oriented culture are negatively associated with the relationship and growth dimensions of climate.

Hypothesis 7: Social climate is a mediating variable between leadership and occupational bond; and between leadership and health practices.

Hypothesis 8: Leadership is positively associated with health practices and occupational bond, both indicators of a healthy workplace.

Results

Data Analyses

Initial inspection of the data indicated there were no outliers among the data, however, 3 cases with missing data on the OCI survey were identified. Means were used to replace missing data rather than remove cases from further analyses. The criterion variables showed some skewness ranging from -.09 to -.3 for leadership. No transformation was performed on leadership as the outlier identified by Cook's Distance was on a very small scale (0.01). The outcome variable occupational bond was negatively skewed at -.6. Square root and log transformations over compensated, increasing the skewness to .8 and -1.16 respectively. No transformations were performed.

Correlation analysis was conducted to test the hypotheses looking at the strength of the association among variables using SPSS version 18. Sequential regression tested the general model to determine the optimal combination of variables to predict health practices and organizational bond.

Descriptive statistics and correlations. For ease of reading the means, standard deviations and zero-order correlations for only the variables used in the hypotheses are shown in Table 9. The labeling and ordering of variables in Table 9 is consistent with Appendix A which presents a more detailed table of the zero-order correlations for all of the variables and subscales. The independent variables are presented first in the table and appendix and then the dependent variables. To differentiate between scales and subscales the major scales are assigned a letter (e.g. A. Culture, B. Leadership) and the subscales/dimensions are numbered (e.g. 1. Higher-order culture; 9. Relationship dimension).

Table 9

Descriptive Statistics and Zero-order Correlations among Scales used in Hypotheses 1 to 8. (N=162)

Variable	Mean (SD)	SE	A	1	2	3	B	C	9	10	D	E
A. Culture	340.25 (59.61)	4.68	1.0									
1. H-Order	98.90 (23.64)	1.86	.67**	1.0								
2. People	90.17 (16.60)	1.30	.91**	.59**	1.0							
3. Task	74.51 (19.94)	1.57	.85**	.31**	.68**	1.0						
B. Leadership	101.27 (30.00)	2.36	.28**	.53**	.29**	.04	1.0					
C. Social Climate	52.16 (13.59)	1.07	.24**	.61**	.24**	.00	.63**	1.0				
9. Relation	15.85 (6.20)	0.49	.16*	.58**	.17*	-.10	.63**	.91**	1.0			
10. Growth	16.38 (4.14)	0.32	.28**	.50**	.25**	.12	.48**	.81**	.62**	1.0		
D. Health Practice	120.13 (19.88)	1.56	.22**	.49**	.26**	-.04	.44**	.54**	.54**	.32**	1.0	
E. Occ- bond	66.92 (12.14)	0.95	.26**	.56**	.31**	-.02	.45**	.58**	.56**	.38**	.60**	1.0

**Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed).

SD = Standard Deviation
SE = Standard Error

H-Order = Higher Order Satisfaction needs
People = People-oriented culture
Task = Task-oriented culture

Relation = Relationship Dimension of climate
Growth = Personal Growth/Goal orientation Dimension of climate

Health Practice = Occupational Health Practice

Occ-bond = Occupational Bond

Overall, the findings of the correlation analysis support the premise proposed in this study that culture, leadership and climate are significant factors in the context of the workplace. Positive perceptions of workplace culture, climate and leadership are associated with positive perceptions of both occupational health practices and occupational bond as presented in Table 9. More interesting however is that the relationships suggest that the perception of the proximal environment is more highly associated with the outcomes than the perception of the distal environment, i.e., the proximal context of climate is more relevant than the distal context of culture. Using Cohen's (1992) guide of small, medium or large effect ($r = 0.10$; 0.30 or $.50$ respectively), the magnitude of the relations presented in Table 9 suggests a strong movement from proximal to distal in that the magnitude of the relationship diminishes the more distant it is. The perceptions of climate ($r = .54$, $p<.01$) have a stronger influence on perceptions of organizational health practices than perceptions of leadership ($r = .44$, $p<.01$) or perceptions of culture ($r = .22$, $p<.01$). Similarly, perceptions of climate ($r = .58$, $p<.01$) have a stronger influence on occupational bond than perceptions of leadership ($r = .45$, $p<.01$) or perceptions of culture ($r = .26$, $p<.01$).

Moreover, what Table 9 also demonstrates is that the workplace needs to be contextualized to be better understood. This is particularly salient when looking at the differential influence the task-oriented subscale has on perceptions in the workplace when compared to the remaining independent variables. For example, Table 9 and Appendix A show that the subscale task-oriented culture has a dampening effect on perceptions of all variable subscales and a significant negative effect on perceptions of the job satisfaction subscale of occupational bond (see Appendix A). Similarly, Appendix A shows the significant negative influence of the security-needs subscale on dimensions of climate and

perceptions of job satisfaction, job affiliation, work safety and early intervention. Both the task-oriented and security-needs dimensions of culture, if overly emphasized in organizations, have negative effects on the workforce (Cooke & Lafferty, 1989). By contrast, the humanistic dimensions of culture such as higher-order needs have a significant positive influence on perceptions across the constructs and subscales. In an applied setting this suggests that the inherent negative aspects of working life can be tolerated and speaks to Jaffe's (1995) definition of healthy workplaces balancing the needs of employer and employee to obtain mutual goals.

Correlation Hypotheses Testing. A summary of the correlation hypotheses testing is presented in Table 10, along with the significance levels as referred to in the note to that table.

Hypothesis 1 states that organizational culture that is perceived to meet higher-order satisfaction needs is positively associated with health practice and occupational bond, both indicators of a healthy workplace. This hypothesis was supported. Higher-order satisfaction need was significantly and positively correlated with health practice ($r = .488$, $p < .01$) and occupational bond ($r = .559$, $p < .01$).

Hypothesis 2 states that task-oriented culture is negatively associated with health practice and occupational bond, both indicators of a healthy workplace. No significant relationship was found between the subscale task-oriented culture and the constructs of health policies and practices ($r = -.035$, $p > .05$) and occupational bond ($r = -.024$, $p > .05$). Hypothesis 3 states there is a positive relationship between social climate and (a) health practices and (b) occupational bond, both indicators of a healthy workplace. This hypothesis

was supported. Social climate was significantly and positively associated with health

practices ($r = .540$, $p<.01$) and occupational bond ($r = .575$, $p<.01$).

Table 10

Summary of Correlation Hypotheses

Hypotheses	Supported	Correlation Coefficient	Variance Explained
1. Organizational culture perceived to meet higher-order satisfaction needs is positively associated with (a) health practices and (b) occupational bond.	1(a) yes	.49** $p<.01$	24%
	1(b) yes	.56** $p<.01$	31%
2. Task-oriented culture is negatively associated with (a) health practices and	2(a) no	-.04 $p>.05$	0
(b) occupational bond	2(b) no	-.02 $p>.05$	0
3. Social climate is positively related to (a) health practices and (b) occupational bond	3(a) yes	.54** $p<.01$	29%
	3(b) yes	.58** $p<.01$	33%
4. Perceptions of people-oriented culture are positively associated with (a) the relationship dimension and (b) the growth dimension of social climate.	4(a) yes	.17* $p<.05$	3%
	4(b) yes	.25** $p<.01$	6%
6. Perceptions of a task-oriented culture are negatively associated with (a) the relationship dimension and (b) the growth dimension of climate.	6(a) no	-.10 $p>.05$	1%
	6(b) no	.12 $p>.05$	1%
8. Leadership is positively associated with (a) health practices and (b) occupational bond.	8(a) yes	.42** $p<.01$	18%
	8(b) yes	.45** $p<.01$	20%

**Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed).

Hypothesis 4 states that perceptions of a people-oriented culture are positively

associated with (a) the relationship dimension and (b) the growth dimension of social

climate. Testing hypothesis 4(a) and 4(b) showed that perceptions of people-oriented culture

was significantly associated with the relationship dimension of social climate ($r = .169$) and

the growth dimension of social climate (r = .247). Although the association was not very strong this hypothesis was supported.

Hypothesis 6 states that perceptions of a task-oriented culture are negatively associated with (a) the relationship dimension and (b) the growth dimension of climate. Testing hypothesis (a) showed perceptions of task-oriented culture to be negatively associated with the relationship dimension of climate (r = -.097, p>.05), however, this association did not achieve significance. Nor was hypothesis (b) supported. The association between task-oriented culture and growth dimension of climate was also non-significant (r = .125, p>.05).

Hypothesis 8 states that leadership is positively associated with (a) health practices and (b) occupational bond. This hypothesis was supported. Leadership was significantly and positively correlated with health practice (r =.442, p<.01) and occupational bond (r =.452, p<.01), both indicators of a healthy workplace.

Regression Hypotheses Testing. A summary of the hypotheses for regression analysis is presented in Table 11.

Table 11

Summary of Regression Hypotheses

Hypotheses	Supported	
5. (a)The relationship and (b) growth dimensions of climate are predictors of employees' perceptions of higher-order satisfaction needs.	5(a) yes 5(b) yes	See Table 12 See Table 12
7(a). Social climate is a mediating variable between leadership and occupational bond.	7(a) yes	See Table 13
7(b). Social climate is a mediating variable between leadership and health practices.	7(b) yes	See Table 14

Thus far the correlation analyses support the theory that the constructs of culture, climate and leadership are associated with health practices and occupational bond in the workplace. Table 10 shows that these associations are often quite substantial. Positive cultures (i.e., culture that values the individual, promotes skill development and supports staff) and facilitative climates (i.e., high in peer cohesion, involvement and autonomy, for example) are associated with workers positive perceptions of health practices and occupational bond. Moreover, the magnitude of the associations suggests that the causal ordering is from the proximal level of climate to the distal level of culture. To test the causal ordering implied in this statement regression analysis was used to evaluate the competency of social climate to predict culture. Hypotheses 5(a) and (b) test aspects of this implied causal ordering from proximal to distal by looking at the subscales of climate as predictors of culture's higher order satisfaction needs

Hypothesis 5 states that the (a) relationship and (b) growth dimensions of climate are predictors of employees' perceptions of higher-order satisfaction needs as an aspect of culture. Table 12 shows that this hypothesis was supported.

Table 12

Summary of Regression Analysis for Hypotheses 5(a) and 5(b) (N=162)

					Change Statistics				
Step	R	R Square	Adjusted R Square	SE Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.577[a]	.333	.329	19.372	.333	79.798	1	160	.000
2	.604[b]	.365	.357	18.957	.032	8.091	1	159	.005

a. Predictors: (Constant), Relationship Dimension
b. Predictors: (Constant), Relationship Dimension, Growth Dimension
Criterion variable: Higher-order satisfaction needs

Using sequential regression, entering the relationship dimension on step 1 and the growth dimension on step 2, the R^2 value indicated that the relationship dimension accounted

for more than a third of the variability in predicting higher-order satisfaction needs. Conceptually, the growth dimension of climate is also significant and added R^2 change of .032 (or 3% additional variance accounted for) to the prediction of higher-order satisfaction needs. Therefore, climate as significant predictor of culture substantiate the causal ordering from the proximal level of climate to the distal level of culture.

A more conclusive test of this causal ordering is to look at whether climate is a mediating variable in the workplace between (a) leadership and occupational bond and (b) between leadership and health practices. Baron and Kenny (1986) indicate a third variable (in this instance climate) functions as a mediator when a previously significant relation between the independent variable (leadership) and dependent variable (occupational bond or health practices) is no longer significant. "To test for mediation, one should estimate the three following regression equations: first, regressing the mediator on the independent variable; second, regressing the dependent variable on the independent variable; and third, regressing the dependent variable on both the independent variable and on the mediator" (Baron & Kenny, 1986, p.1177).

Following this procedure, analyses 1 through to 3 are presented in Table 13. Analysis 1 regresses climate, the mediating variable onto leadership, the independent variable which is a significant relationship ($p<.001$). Analysis 2 shows occupational bond regressed onto leadership which is also a significant relationship ($p<.001$). Analysis 3 shows how climate removes the effect of leadership to non- significance ($p>.001$) thereby demonstrating a mediating effect. Although leadership is singularly significant and accounted for 20% of the variance in occupational bond, adding climate into the equation improves variance explained

34%. This finding is consistent with Baron and Kenny (1986) and is evidence that social climate mediates between leadership and occupational bond.

Table 13

Regression Analysis: Climate as a Mediator between Leadership and Occupational Bond

Analysis	Unstandardized Coefficients		Standardized Coefficients	R			95.0% Confidence Interval	
	B	SE	Beta	Square	t	Sig.	Lower Bound	Upper Bound
1 (Constant)	23.19	.293			7.91	.000	17.40	28.98
Leadership[a]	.286	.028	.631	.40	10.30	.000	.231	.341
2 (Constant)	48.41	3.01			16.06	.000	42.46	54.36
Leadership[b]	.183	.029	.452	.20	6.40	.000	.126	.239
3 (Constant)	38.41	3.24			11.87	.000	32.02	44.81
Leadership	.059	.034	.147	.20	1.77	.079	-.007	.126
Climate[c]	.431	.074	.483	.34	5.83	.000	.285	.577

a. Dependent Variable: Climate

b. Dependent Variable: Occupational Bond

c. Dependent Variable: Occupational Bond

Similarly, hypothesis 7(b) supported social climate as a mediator between leadership and health practices. The summary of the regression analysis is presented in Table 14 which was also conducted following Baron and Kenny's procedure. Analysis 1 is unchanged – Leadership and Climate are strongly associated and account for 40% of the variance. Additionally when health practice is regressed onto Leadership in analysis 2 the relationship is significant and accounts for 20% of the variance. Analysis 3 demonstrates that climate is a more dominant influence in the workplace over leadership. In other words, an understanding of the type of social climate in the workplace is a better predictor of the type of health practices than is an understanding of the type of leadership.

As seen in Table 14 the lower bound confidence interval for leadership is zero. Despite a borderline p value of .05 there was sufficient evidence to conclude that climate is a mediating variable between leadership and health practices (Tabachnick & Fiddell, 2001).

Table 14

Regression Analysis: Climate as a mediator between Leadership and Health Practices

Analysis	Unstandardized Coefficients		Standardized Coefficients				95% Confidence Interval	
	B	SE	Beta	R^2	t	Sig.	Lower Bound	Upper Bound
1 (Constant)	23.19	2.93			7.91	.00	17.40	29.98
Leadership[a]	.286	.028	.631	.40	10.30	.00	.231	.341
2 (Constant)	90.47	4.96			18.23	.00	80.67	100.27
Leadership[b]	.293	.047	.442	.20	6.23	.00	.200	.396
3 (Constant)	75.77	5.44			13.92	.00	65.02	86.52
Leadership	.112	.056	.168	.20	1.98	.05	.000	.223
Climate[c]	.634	.124	.433	.31	5.094	.00	.388	.880

a. Dependent Variable: Climate

b. Dependent Variable: Health Practice

c. Dependent Variable: Health Practice

General Model for a Healthy Workplace. The general model developed from the theory and diagrammatically presented earlier in Figure 1, was used as a preliminary guide for this study. The model assumes a distal to proximal ordering of the principal variables – culture, leadership and climate. Regression analyses were used to test this speculative direction of causal ordering inferred from the general model. Moving systematically through the model and adding the next most proximal variable, the results presented in Table 15 oppose this directional inference.

Table 15

Hierarchical Regression Coefficients for General Model, Figure 1

Analyses[a]		Unstandardized Coefficients		Standardized Coefficients				95% Confidence interval	
		B	SE	Beta	R^2	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	49.06	5.37			9.13	.000	38.44	59.67
	Culture	.052	.016	.258	.066	3.37	.001	.022	.083
2	(Constant)	40.06	5.17			7.75	.000	29.85	50.26
	Culture	.029	.015	.144	.066	1.98	.049	000	.059
	Leadership	.167	.029	.412	.223	5.66	.000	.109	.225
3	(Constant)	32.34	4.91			6.58	.000	22.62	42.04
	Culture	.022	.014	.109	.066	1.64	.104	-.005	.049
	Leadership	.050	.034	.124	.223	1.49	.138	-.016	.117
	Climate	.420	.074	.470	.355	5.68	.000	.274	.566
4	(Constant)	16.07	5.42			2.96	.004	5.35	26.77
	Culture	.016	.013	.081	.066	1.31	.192	-.008	.041
	Leadership	.026	.031	.065	.223	0.84	.402	-.036	.088
	Climate	.274	.073	.306	.355	3.74	.000	.129	.418
	Health Practice	.236	.043	.386	.457	5.44	.000	.150	.321

a. Dependent Variable: Occupational Bond in analysis, 1, 2, 3, and 4

For example, when entered singularly in analysis 1, culture has a significant impact on occupational bond. However, as the analyses move systematically from distal to proximal, the distal factor of culture is reduced to non-significance. Analysis 2 shows leadership becomes a more significant variable than culture. Similarly, analysis 3 shows the significant impact of climate in the workplace such that climate absorbs all the variance from leadership and culture variables which are no longer significant.

What the results of the regression analyses demonstrate is that each of the predictor variables entered in the analyses was highly significant. Moreover, each of the four variables contributed significantly to the prediction of occupational bond.

However, analysis 4 of the regression supports that perceptions of climate and organization health practices are stronger predictors of occupational bond than perceptions of culture and leadership. These results are consistent with a causal ordering of variables from proximal to distal. Although this causal inference must be tested and confirmed in future research with stronger research methods, these results have very practical application for organizations concerned about the health of their workers. On the basis of the results I will be proposing a revised model in the next section.

Discussion

The hypotheses and theory development for this study were summarized earlier in Figure 1. In that diagram the internal working environment is represented in a simple pathway. At a distal level culture reflects the widely shared beliefs, attitudes and norms that shape behavior, leadership is an influencing process and social climate is the proximal atmosphere surrounding employees, all of which influence the health of the workplace and occupational bond. Since the analyses conducted establish a counter direction to the causal ordering, a revised causal model is proposed. The new model is proposed in Figure 2.
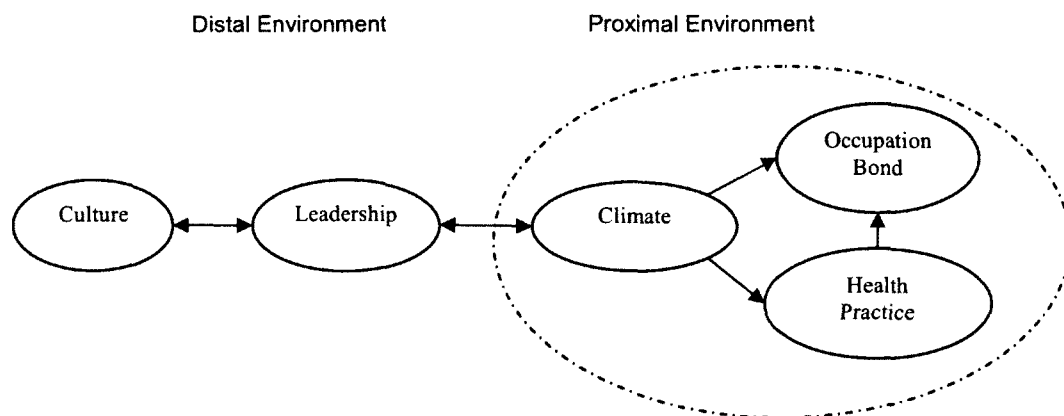
Figure 2. Revised model for a healthy workplace

This model continues to present a view of the broad range of variables at play in the workplace. Previous studies attest to the importance of smaller sets of these variables; however the concluding outcomes do not capture the complexity of the workplace. This study is the first to test a more comprehensive model, and the outcome emphasizes the differential impact of the many components of a working environment that act as facilitators or barriers which should be considered when advancing a healthy workplace. Of particular practical relevance to the development of a healthy workplace is that the revised

comprehensive model identifies the proximal working environment as having a stronger influence over workers' perceptions than the distal working environment. The regression analyses reveal that social climate is a mediating variable between leadership and occupational bond and between leadership and health practices. Furthermore, when occupational bond was regressed on all the variables, social climate and health practices diminished the effects of culture and leadership to non-significance. This suggests that the immediate context of climate has greater relevance to the worker on the shop floor and is a better indicator of healthy practices and occupational bond than leadership or culture. This is attested to by the work of Thompson and Prottas (2005). Within the organizations they examined, the availability of a formal family-support benefits programme was not singularly sufficient to retain members but when coupled with a working environment that had favourable perceptions toward working women, the availability of the programme was instrumental in reducing work-family conflict and absenteeism and improving job satisfaction and commitment. Zohar's (1980) research attests further to the relevance of climate in that he suggested directly improving climate had a greater impact on the workplace than targeting organizational culture. Similarly, Cree and Kelloway (1997) found that the immediate environment had greater impact on employee perceptions of accident exposure in the workplace such that the perceived attitudes of significant others towards safety predicted risk perceptions that in turn predicted willingness to participate in health and safety programmes.

Clearly, the emerging literature is acknowledging that it is co-workers who are more directly affecting behavior than supervisors or managers thus making the proximal environment more pertinent than distal environments (Turner, Chmiel, Hershcovis, & Walls,

2010). The present study bolsters the position that worker perceptions can foster or deter management goals and outcomes (Shoemaker, Robin & Robin, 1992). The implication for management is that it needs to be aware of the proximal influences within the workplace when advancing a healthy workplace. As a case in point, Kelloway and Barling (2010) suggest leadership development as a primary level intervention to improve occupational health in the workplace. Likewise, Schein (2004) suggests that managing organizational culture is the route to corporate effectiveness. However, the findings from the present study suggest these strategies may be too far removed from workers on the shop-floor and that leader driven interventions may have limited success. Interestingly, Sy (2010) looked at the distance between leader and worker in terms of the quality of the working relationship by exploring leaders' implicit assumptions about workers. When extending on McGregor's (1960) position that Theory X leaders (set of negative beliefs that workers are inherently lazy) have different assumptions about the attributes of workers than do Theory Y leaders (set of positive beliefs that workers are self-motivated to work), Sy found that these preconceived notions impact the quality of leaders' working relationship with workers which in turn impact workers' cognitions, affect, and perceptions of the workplace. The scope of the present study did not allow for such probing into quality of relationships, and indeed, as the perspectives obtained in this study are limited to workers on the shop floor this is an area that could be usefully explored in future research.

Currently the literature identifies collaborative interventions as an effective route to success when rank and file employee participation is enlisted (Aust &Duckie, 2004). Indeed, the need for collaboration between levels of an organization is long acknowledged in Munsterberg's *Psychology and Industrial Efficiency* (1913) – with Glew and colleagues

thereafter observing that superficial motives for collaboration lead to unauthentic participation programmes with limited impact (Glew, O'Leary-Kelly, Griffin & Van Fleet, 1995). The present study indicates that to progress the work environment to health, members' perceptions of the culture, social climate and leadership of the workplace are pertinent factors to be considered. Furthermore, this study suggests that because the immediate social climate presents as a more direct path to influencing the behaviour of workers on the shop floor, it may be more appropriate to ingrain a healthy workplace as a way of thinking - an organizational philosophy - rather than as an adjunct programme delivered by management.

Additionally, this study demonstrates that a healthy workplace can also tolerate negativity. Jaffe (1995) indicates a healthy workplace is achievable by balancing business needs with meeting member higher-order needs. For example, the results of this study show a significant negative relationship between a security-oriented culture and the several dimensions of occupational bond, leadership, social climate and health practices. Similarly, a task-oriented culture showed a dampening effect on perceptions of the workplace such that the greater the threat to one's job security and livelihood the lower the perception of job satisfaction. Both task and security orientations are components of culture that if over-emphasized are indicators of negative health outcomes for employees. Kotter and Heskett (1992) depict a task-oriented culture as placing a higher value on production at the expense of workers' health, motivation and co-operation. McGregor (1960) describes a security-oriented culture as based on the assumptions of Theory X where a high degree of rules, procedures and orders are relied upon to control the workforce. There is strong evidence supporting the link between these types of work environments and negative impacts on

workers' behavior and perceptions of their health, safety and job satisfaction. Vardi (2001), for example, found an increase in intentional misconduct violating organizational rules the poorer the working environment. Similarly, Agervold and Andersen (2006) found a positive relationship between a poor social climate at work, workplace violence and the incidence of problems such as psychological fatigue and burnout affecting employee health.

Consistent with this literature this study did show a significant decline in job satisfaction with increasing task- and security-oriented culture, however, the positive aspect of meeting higher-order needs had a significantly greater impact on workers' job satisfaction. Similarly, meeting higher-order needs had a greater positive impact on workers' perceptions of leadership, social climate and health practices than the task or security-oriented culture. What this suggests is that organizations can leverage and enhance what is good to dampen what is inherently necessary but bad while maintaining positive member perception about the workplace. A healthy workplace is a balance between meeting higher-order needs and productivity in order to maintain a strong occupational bond, and a respect for the leadership, workers and practices of the organization. Accordingly, this meets Jaffe's (1995) basic premise that the more organizations commit to and support human needs for safety, personal growth, involvement, and meaning, the healthier the organization.

While acknowledging the limitations of sample size and the limitation of single source data, what this study does provide is a point-in-time description of the constructs of culture, leadership and social climate that were significant drivers of a healthy workplace. The outcome reveals that an organization that is able to balance the higher-order needs of its employees with the organization's business goals is on a positive pathway to health. What worked well for these organizations was a culture that was perceived to have a greater

emphasis on higher-order, people-centred needs than lower-order security and task-oriented needs. The dominant components of culture that were emphasized in this sample of organizations encourage open communication, good co-operation and effective co-ordination of activities such that members understand how their work affects others, understand their role in the entire production or service process and are meaningfully rewarded for their efforts. These aspects of culture are demonstrated throughout the literature as having a positive impact on employees' attitudes towards their job.

In conjunction with meeting higher order needs, the predominant leadership style that was adopted in these organizations reflects the structural and human resource frames of Bolman and Deal's (1991) conceptualization of effective leadership. The structural frame emphasizes goals and efficiencies while the human resource frame focuses attention on human needs. Bolman and Deal posit the use of four frames – structural, human resource, political and symbolic frames – for a balanced view on which leaders effectively base judgements and assumptions of situations or problems. However, Bolman and Deal also recognize that while all four frames are important, the salience of the frames varies by context and the use of all four frames is exceptional rather than common with the symbolic frame being the most infrequently used. Consequently, Bolman and Deal differentiate between effective managers who commonly use the structural and human resource frames and less commonly the political frames and effective leaders who use all four. The perception amongst workers examined in this study show a common use by their leaders of the structural and human resource frames and less common use of the political frame. This is consistent with the findings of Bolman and Deal. The results may be expressive of effective management which works well in the context of these organizations studied and for the level

of leader assessed in that most participants indicated they ranked their team leads on the scales. Accordingly then it should be noted that context is also needed when assessing effective leadership as one or all styles are not prescriptive for the development of a healthy workplace.

Similarly, context is a salient ingredient of climate. Although the purpose of this study was to look at the relationship between the constructs at the aggregate level and not at the individual level of sites, the qualitative difference between sites was noted. Three of the sites involved in this research were food production and distribution centres with rapid turn-around cycles. From necessity the concentration was on the system dimension and controlling the flow of work to reach tight deadlines. What has developed in these organizations to offset the work pressure is a supportive social climate in which clarity was strongly valued (in that details of assigned tasks were clearly explained) and strong peer cohesion was encouraged among workers. Despite the work pressure, the positivity of the social climate was significantly related to occupational bond. Intentional or not these organizations had in place the elements such as task clarity, peer cohesion and social support, which are commonly used by practitioners to counter negative stress in the workplace. By contrast, there was a significant difference between site D and the other sites. Perceptions of social climate and leadership were not strongly endorsed. Budget cuts and restructuring were ongoing within this organization. Interestingly, the anecdotes provided to the researcher whilst onsite suggested failure of management to communicate openly with members, poor supervisory support, and frustration at the reallocation of the staff meeting room to storage use. The effects of the negativity of climate on behavior and attitudes within this organization were reflected in the survey responses. Whether intentional or not this site was

reinforcing the negativity of employees and countering the strategies for developing a healthy workplace by maintaining poor communication, minimizing the opportunity for peer cohesion and lowering the perception of occupational bond. Again, it is a limitation of this study that only single source data were used. It was the original intention to correlate the survey results with the organization's absence records to document the effects of a negative working environment such as this on absentee rates. Unfortunately, access to this type of data did not materialize. Clearly this is an avenue for continued research.

In considering a healthy workplace Jaffe (1995) argues that such a workplace is a balance between productivity and the quality and health of working life. This study extends Jaffe's holistic approach of protecting, supporting and promoting the physical and psychological health and well-being of the members working in the organization by encompassing the organization's health practices and policies such that the healthy workplace not only protects worker employability, a healthy workplace includes the organization's duty of care to facilitate and accommodate workers who require rehabilitative assistance to maintain or return to employment. Using the OHP scale, the present study successfully differentiated work environments that are more supportive of health sustaining practices and rehabilitative assistance. For example, the hypotheses examined both positive and negative aspects of culture and the relationship to health practice. The results indicate that workers who perceive the workplace culture as satisfying higher-order needs are more supportive of individuals who require rehabilitative assistance. By contrast workers who perceive a more security-oriented culture (e.g. more dependence), show less support for individuals who require rehabilitative assistance. These findings suggest that despite formal policies, the value placed on health practices is derived from the cultural norms of the

workplace. What can be extracted from these findings is that health policies and practices may not be valued equally across organizational cultures as evidenced by the differences perceived between people-oriented and security-oriented cultures. These findings parallel the findings from the safety literature. The literature proposes that on the occasions when safety and production are not equally valued, safety is compromised to the detriment of member's wellbeing to meet production demands (Zohar, 1980). The implication from this study is that despite formal policies, support for individuals with health issues may also be compromised to the detriment of member's wellbeing in order to meet production demands in security-oriented cultures. Comparable to the Thompson and Prottas (2005) study in which the uptake of formal family support policies was dependent on member perceptions, attitudes, and support, the uptake of rehabilitative policies may be censured to the detriment of employee wellbeing with documented outcomes such as impaired quality of life, reduced work ability or premature withdrawal from the workforce (Armon, Melamed, Shirom, & Shapira, 2010; Cote, van der Velde, Cassidy, Carroll, Hogg-Johansson, & Peloso, 2008).

In such situations Zohar (2002) as an example, places the emphasis on leadership to encourage more favourable attitudes in the workplace. However the workplace is a complex, inter-related entity and recent studies somewhat challenge the priority of leadership. Indeed, the latest studies are suggesting that the workers are relationally closer and more directly affected by the work practices of their co-workers in their immediate environment than by leaders (Turner, Chmiel, Hershcovis, & Walls, 2010). Moreover, the findings of the present study successfully show that social climate is a mediating variable between leadership and occupational bond and between leadership and health practices. The hypotheses further substantiate that cultural norms of meeting higher order needs, and cultivating a person- and

growth-focused climate is positively associated with perceptions of occupational bond which in this study is a composite variable of organizational fit, organizational affiliation and job satisfaction. As anticipated the findings show a dampening effect, which reached significance for some subscales, between task-oriented culture, relationship and growth dimensions of climate and perceptions of health practices and occupational bond.

Consequently, this firmly places the notion of organizational health practices in the wider context of distal and proximal influences within the workplace that may act as barriers or facilitators to the promotion of a healthy workplace. Context for example, is visible in the research findings of Arnold and colleagues (2007) whereby transformational leadership (typically conceptualized in four dimensions of idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration) exerted a positive influence on the well-being of workers when mediated by meaningful work. What the findings of this current study suggest is that leadership, like culture, is embedded in a working environment and the fractionalization of the working environment may compromise research findings. For example, when framed in the larger context of the working environment this study showed that climate mediated the influence of leadership on occupational bond. A conceivable explanation can be extracted from Schein (1985) whereby he differentiates between leadership roles and managing administrator roles. Workers on the shop floor may be more exposed to the managing administrator roles of leadership than leadership roles – in terms of transformational style leadership – that may be manifested at a higher level in the organization. The Leadership Orientation Survey used to measure the four frames of leadership (structural, human resource, political and symbolic) weighed in favour of the structural and human resource frames suggesting that the participants viewed leadership

more in terms of managing administrators. The immediate context of rapid production cycles was more relevant to the work-a-day lives of the workers on the shop floor therefore the system dimension and co-worker cohesion were salient elements of the social climate. This is consistent with emerging research. For example Turner et al. (2010) explored co-worker support for safety as a more salient force for safety behavior. Of the three sources of support investigated (co-workers, managers or supervisors) co-workers proved to be the more influential force for safety behaviours under demanding work conditions than managers or supervisors. Consequently, Turner and colleagues make the recommendation that workers should also have a voice in management training which is typically limited to the supervisory levels and above.

Overall this study builds on clarifying the constituents of an 'internal working environment' that is expressed in the definition of healthy workplaces. The influence of culture, leadership and climate is embedded in the workplace; therefore they are not singularly sufficient for understanding the context of that workplace. For example, in a study reported by Sprigg, Jackson and Parker (2000) perceptions of work characteristics such as influence over work, and cooperation showed positive changes in job satisfaction with the introduction of teamwork but only in the context of high interdependence between teams and not in the context of low interdependence between teams. This highlights the importance of understanding the context of the workplace as interventions are not prescriptive or uniformly effective but dependent on context (Semmer, 2002).

Limitations. Notwithstanding the substantive findings in this study, a number of limitations need to be considered when interpreting the results. First, because of the applied nature of the study I had limited control over distribution of the survey in some sites which

may suggest the findings are susceptible to non-response bias. However, to my advantage, the worker or trade union representatives from some of the sites requested full distribution to all members. Also to my advantage my response rates vary from 35 to 63% across the four sites. Generally, survey response rates are often as low as 30%, and a response rate of 50% is often considered acceptable (Coughlan, Cronin, & Ryan, 2009). Moreover, power for the study was adequate in that 76 participants were required to detect medium effect or 108 for small effect. After eliminating partially completed surveys, the actual sample size was 162. The sample size was adequate to conduct meaningful analyses culminating in a revised model – albeit provisional, the revised model awaits stronger research methods such as structural equation modeling that can test the implied causal inferences.

Second, although qualitative differences were noted between sites, with the exception of some leadership subscales there were no differences between sites in the independent and dependent variables that would have biasing or confounding effects on the conclusions drawn in this study. Moreover, the primary focus of the study was to establish the existence of the relationship between the concepts themselves e.g., organizational culture and climate, as measured by their impact on individual perceptions, as well as the substantive relationship between these variables. All the measures were designed to capture the individual perceptions of these concepts and given that the workers are in the best position to report on their own circumstances a self-report approach was the most suitable for the exploratory nature of this study (Spector, 2006). The variances in the independent and dependent variables in the sample obtained were sufficient for the substantive analyses undertaken. The practical implication is that exploring site differences were not material to this study which was to establish support for the associations between the constructs of culture, climate and

leadership. Future research however could delve into, not only site differences but differences between the different levels within an organization to view experiences of individuals within the same group – a view that would lend itself best to a mixed methodology, no doubt.

Thirdly, there needs to be awareness that gender bias (75% male respondents), role bias (only 21% of the sample had supervisory/managerial duties), age bias (mean age 36-45 years), or even tenure bias (mean years of service 6-10 years) might be introduced into the process of measurement. For example, Frame, Roberto, Schwab, and Harris, (2010) found male and female members viewed different competency dimensions as important for their job. They also found that members in higher level jobs, (regardless of gender) placed more importance on agentic behaviors than members in lower level positions, and people in lower level jobs place more importance on communal behaviors than do those in higher level positions. Their findings suggest that differences in perspectives are not necessarily delineated by gender but are more complex and also reflect job role and organizational level. However, gender difference, as such, is not material to the focus of this study. This study analyzes the causal relationships between the constructs in terms of the structural determinants of healthy workplaces and contributes to our understanding by specifying more precise assumptions about the relationship between culture, climate and leadership. Nevertheless, on conducting ANOVA's as an exploratory analysis not reported in the dissertation, no significant gender difference was revealed in the perceptions of culture, climate or leadership in this study.

Finally as already noted, only single source data i.e., self reported survey responses from organizational participants were collected which has the potential for common method

variance (CMV). The typical concern of CMV is the potential to inflate effect sizes in substantive research beyond what might be seen if multiple methods were used. The practicalities of this applied research did not permit access to Human Resource reports as originally intended. However, it is desirable to expect future research projects will have better accessibility to multi-method evidence. For the purposes of this study I will heed Doty and Glick's (1998) words that while common method variance may be a concern in research it does not necessarily invalidate single-method research findings.

Conclusion and Future direction

Acknowledging that the concept of a healthy workplace lacks a precise definition this study set out to determine the influence of the internal working environment of culture, climate and leadership on perceptions of occupational bond (a composite variable of organizational fit, job satisfaction and organizational affiliation) and organizational health practices and policies which were used as indicators of a healthy workplace. What this study affirms is that the positivity of the working environment bears an important relationship to employees' perceptions of occupational bond and health practices. Moreover, climate was shown to mediate the relationship between leadership and occupational bond and between leadership and health practices and policies.

While one swallow does not a summer make, this study does contribute additional evidence to the emerging literature on workplace health. The findings question the rightfulness of the prevailing fractional view when examining the variables that exert influence in the workplace. What is generally emerging from the literature is an understanding that the internal working environment is a dynamic process that unfolds over time in an embedded context; not a simple, static entity. However, approaching the development of a healthy workplace from this understanding poses a challenge to the conceptualization of and measurement of a healthy workplace. Without doubt this is one of the limitations of this study in that cross-sectional, single method, single sourced data was used. Dewe and Trenberth (2004) draw attention to this issue, suggesting that much of the existent research implies that the nature of the workplace is insular. However, future research "must begin to think in transactional-process terms when it comes to understanding the workplace" and gain comfort in applying alternative methods suggesting "methological

pluralism" to extend our understanding of the influences in the workplace (Dewe & Trenberth, 2004, p155). While this was not a possibility in this study, it is something to consider in an applied setting when capturing the dynamic complexity of the workplace and its impact on the cognitions, affect and behavior of workers.

Finally, the culture related research typically assumes a trickle-down effect such that culture influences leadership which influences climate. For example Carr and colleagues (2003) describe culture as a frame of reference that guides and directs behavior. By contrast, Guldenmund (2000) posits that employees behave according to the expectations derived from the climate and leadership that then characterize the culture. This raises questions that have yet to be tackled. For example, does the proximal working context of climate exert more influence than the distal working environment of culture and what impact does that have for strategies implementing a healthy working environment? This has future implications for both research and practice. Considerable work is necessary to understand the complexities of the factors that impact a health workplace. A multidisciplinary approach from organization, human resource, health and business bodies of knowledge would have the advantage of cross-fertilization to generate new knowledge and practice in healthy workplaces. However, that is all future grist to the research mill.

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Appendix A

Zero-order correlations among study subscales

Table A.1

Zero-order Correlations for All Survey Scales

	A	1	2	3	4	B	5	6	7	8	C	9	10	11
A. Culture	1.0													
1. Higher-order Needs	.67**	1.0												
2. People-oriented	.91**	.59**	1.0											
3. Task-oriented	.85**	.32**	.68**	1.0										
4. Security Needs	.71**	.03	.64**	.73**	1.0									
B. Leadership	.28**	.53**	.29**	.04	-.09	1.0								
5. Structural Frame	.23**	.53**	.24**	-.10	-.13	.92**	1.0							
6. Resource Frame	.25**	.47**	.27**	.05	-.09	.94**	.79**	1.0						
7. Political Frame	.26**	.49**	.27**	.04	-.08	.96**	.85**	.87**	1.0					
8. Symbolic Frame	.30**	.51**	.31**	.07	-.05	.97**	.83**	.90**	.91**	1.0				
C. Social Climate	.24**	.61**	.24**	0	-.23**	.63**	.60**	.63**	.57**	.60**	1.0			
9. Relationship	.16*	.58**	.17*	-.10	-.32**	.63**	.58**	.65**	.56**	.61**	.91**	1.0		
10. Growth dimension	.28**	.50**	.25**	.12	-.11	.48**	.49**	.44**	.44**	.45**	.81**	.62**	1.0	
11. System dimension	.23**	.51**	.21**	.02	-.15*	.51**	.48**	.51**	.48**	.49**	.88**	.70**	.58**	1.0
D. Health Practice	.22**	.49**	.26**	-.04	-.13	.42**	.44**	.43**	.39**	.41**	.54**	.54**	.32**	.51**
12. Work Wellness	.24**	.24**	.25**	.13	.10	.23**	.22**	.24**	.18*	.22**	.20**	.23**	.04	.22**
13. Work Safety	.09	.42**	.14	-.15	-.24**	.40**	.40**	.38**	.37**	.37**	.47**	.46**	.29**	.45**
14. Early Intervention	.12	.39**	.15	-.08	-.17*	.32**	.34**	.31**	.30**	.27**	.48**	.46**	.36**	.43**
15. Med-leave Process	.18*	.44**	.20**	-.05	-.14	.40**	.40**	.38**	.38**	.37**	.51**	.49**	.35**	.47**
16. Med-leave Knowledge	.13	.33**	.17*	-.05	-.12	.27**	.26**	.26**	.25**	.26**	.40**	.38**	.28**	.36**
E. Occupational Bond	.26**	.56**	.31**	-.02	-.15	.45**	.43**	.43**	.40**	.44**	.58**	.56**	.38**	.53**
17. Job satisfaction	.10	.45**	.14	-.16*	-.26**	.39**	.38**	.38**	.32**	.38**	.52**	.53**	.31**	.48**
18. Job 'fit'	.41**	.54**	.42**	.19*	.04	.47**	.41**	.45**	.43**	.48**	.52**	.48**	.38**	.47**
19. Job affiliation	.16*	.47**	.23**	-.12	-.19*	.32**	.33**	.30**	.28**	.30**	.47**	.47**	.30**	.44**

**Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed).

Table A.1 *continued*

Zero-order Correlations for All Survey Scales

	D	12	13	14	15	16	E	17	18	19
A. Culture										
1. Higher-order Needs										
2. People-oriented										
3. Task-oriented										
4. Security Needs										
B. Leadership										
5. Structural Frame										
6. Resource Frame										
7. Political Frame										
8. Symbolic Frame										
C. Social Climate										
9. Relationship										
10. Growth dimension										
11. System dimension										
D. Health Practice	1.0									
12. Work Wellness	.67**	1.0								
13. Work Safety	.78**	.28**	1.0							
14. Early Intervention	.74**	.22**	.52**	1.0						
15. Med-leave Process	.71**	.20*	.57**	.59**	1.0					
16. Med-leave Knowledge	.64**	.22**	.40**	.51**	.57**	1.0				
E. Occupational Bond	.60**	.30**	.51**	.44**	.54**	.44**	1.0			
17. Job satisfaction	.59**	.29**	.54**	.43**	.52**	.41**	.90**	1.0		
18. Job 'fit'	.50**	.33**	.37**	.31**	.43**	.40**	.84**	.62**	1.0	
19. Job affiliation	.47**	.16*	.43**	.43**	.46**	.33**	.88**	.76**	.56**	1.0

**Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed).

Appendix B

Descriptive Statistics for Culture, Leadership and Climate

Table B.1

Descriptive Statistics for Organizational Culture – OCI Scale

	N	Minimum	Maximum	Sum	Mean	S.Error	Std. Deviation
Achievement	162	12	48	5344	32.99	.630	8.022
Self-actualizing	162	10	48	5105	31.51	.645	8.206
Humanistic	162	12	50	5573	34.40	.724	9.217
Satisfaction Needs	162	37	144	16022	98.90	1.858	23.643
Affiliative	162	13	50	5752	35.51	.679	8.646
Approval	162	10	42	4051	25.01	.558	7.098
Conventional	162	13	48	4804	29.65	.583	7.426
People Orientation	162	44	130	14607	90.17	1.305	16.605
Dependent	162	13	47	4920	30.37	.529	6.732
Avoidance	162	11	42	3502	21.62	.583	7.426
Oppositional	162	12	39	4002	24.70	.430	5.479
Security Needs	162	44	119	12424	76.69	1.285	16.355
Power	162	10	43	3745	23.12	.607	7.720
Competitive	162	10	46	3650	22.53	.636	8.091
Perfectionistic	162	11	50	4675	28.86	.579	7.367
Task Orientation	162	38	130	12070	74.51	1.567	19.941

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Table B.2

Descriptive Statistics for Leadership – LOS Scale

	N	Minimum	Maximum	Sum	Mean	S. Error	Std. Deviation
Analytic	162	4	20	2158	13.32	.325	4.138
Organized	162	4	20	2188	13.51	.312	3.977
Structural Frame	162	9	40	4350	26.85	.605	7.702
Supportive	162	4	20	2107	13.01	.328	4.171
Participative	162	4	20	2067	12.76	.326	4.149
Human Resource Frame	162	8	40	4173	25.76	.631	8.029
Powerful	162	4	20	2076	12.81	.309	3.938
Adroit	162	4	20	2009	12.40	.318	4.053
Political Frame	162	8	40	4085	25.22	.607	7.729
Inspirational	162	4	20	1958	12.09	.346	4.407
Charismatic	162	4	19	1829	11.29	.319	4.057
Symbolic Frame	162	8	39	3787	23.38	.647	8.240

Table B.3

Descriptive Statistics for Social Climate-Workplace Environment Scale

	N	Minimum	Maximum	Sum	Mean	S. Error	Std. Deviation
Involvement	162	0	9	840	5.19	.201	2.559
Peer Cohesion	162	1	9	941	5.81	.163	2.078
Supervisor Support	162	0	9	786	4.85	.195	2.478
Relationship Dimension	162	1	27	2567	15.85	.487	6.201
Autonomy	162	1	9	778	4.80	.168	2.141
Task Orientation	162	1	9	1033	6.38	.164	2.082
Work Pressure	162	1	9	842	5.20	.166	2.111
Growth Dimension	162	5	24	2653	16.38	.325	4.140
Clarity	162	1	9	871	5.38	.158	2.016
Control	162	2	9	973	6.01	.120	1.526
Innovation	162	0	9	606	3.74	.204	2.601
Comfort	162	0	9	780	4.81	.167	2.121
System Dimension	162	8	32	3230	19.94	.409	5.211

Table B.4

Descriptive Statistics for Organizational Health Practice Scale

	N	Minimum	Maximum	Sum	Mean	S. Error	Std. Deviation
Health Practice	162	72	155	19461	120.13	1.56	19.88
Work Wellness	162	9	45	5262	32.48	.67	8.72
Work Safety	162	8	40	5352	33.04	.55	7.05
Early Intervention	162	17	40	5368	33.14	.42	5.30
Med-leave Process	162	3	15	1786	11.02	.26	3.29
Med-leave knowledge	162	3	15	1693	10.46	.28	3.54

Table B.5

Descriptive Statistics for Occupational Bond

	N	Minimum	Maximum	Sum	Mean	S. Error	Std. Deviation
Occupational Bond	162	32	88	10841	66.92	.95	12.14
Job satisfaction	162	5	25	3199	19.75	.36	4.55
Job 'fit'	162	12	35	3667	22.64	.39	4.96
Job affiliation	162	8	30	3975	24.54	.35	4.40

Appendix C

Sample Questions from the Surveys used

The Organizational Health Practice Scale:

Please read each of the following statements and indicate (by circling) your level of agreement. Please provide your answer for _each_ statement.

Disagree	Somewhat Disagree	Don't Know	Somewhat Agree	Agree
1	2	3	4	5

1. **In my workplace I believe -**

   a. Employees returning from sick-leave with medical restrictions
   can be provided modified work shifts or schedules.   1   2   3   4   5

   b. Employees returning from sick-leave with medical restrictions
   can be provided other duties while they continue recovery.   1   2   3   4   5

   c. Employees returning from sick-leave with medical restrictions
   can be provided assistive devices/tools to help them do their job.   1   2   3   4   5

   d. There is support from supervisors for employees who need
   job modifications after their sick-leave.   1   2   3   4   5

The Leadership Orientation Scale
(printed with permission from Dr. Bolman, 2008)

Please read each of the following statements and indicate (by circling) your level of agreement. Please provide your answer for _each_ statement.

Never	Occasionally	Sometimes	Often	Always
1	2	3	4	5

Leader Behaviours

1. Thinks very clearly and logically   1 2 3 4 5

2. Shows high levels of support and concern for others   1 2 3 4 5

3. Shows exceptional ability to mobilize people and resources   1 2 3 4 5
   to get things done

4. Inspires others to do their best   1 2 3 4 5

5. Strongly emphasizes careful planning and clear time lines   1 2 3 4 5

The Workplace Environment Scale®
(printed under license from Dr. Moos, Mind Garden Inc., 2009)

Please answer all the statements. If you think the statement is *True* or mostly *True* of your work environment, mark a T (true) in the box. If you think the statement is *False* or mostly *False* of your work environment, mark an F (false) in the box.

Work Across ⟶

1. The work is really challenging. ☐

2. People go out of their way to help a new employee feel comfortable. ☐

3. Supervisors tend to talk down to employees. ☐

4. Few employees have any important responsibilities. ☐

5. People pay a lot of attention to getting work done. ☐

6. There is constant pressure to keep working. ☐

The Organizational Culture Inventory®
(printed under license from Human Synergistics, 2009)

Please read each of the following statements and indicate (by circling) the extent to which each of the behaviours listed is expected. Please provide your answer for _each_ statement.

Not at all extent	To a slight extent	To a moderate extent	To a great extent	To a very great
1	2	3	4	5

To what extent are people expected or implicitly required to ...?

1. point out flaws	1	2	3	4	5
2. show concern for the needs of others	1	2	3	4	5
3. involve others in decisions affecting them	1	2	3	4	5
4. resolve conflicts constructively	1	2	3	4	5
5. be supportive of others	1	2	3	4	5