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**STRESSORS, SUPPORT FOR INNOVATION, OPENNESS TO EXPERIENCE
AND CONSCIENTIOUSNESS AS PREDICTORS OF DEPERSONALIZATION
AND PERSONAL ACCOMPLISHMENT AMONG
CANADIAN SCHOOL PSYCHOLOGISTS**

A Thesis in

School Psychology

by

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ABSTRACT

Professional stress and burnout can be substantial issues for school psychologists. Beehr's (1994) model of stress was applied to a national sample of Canadian school psychologists in the investigation of stressors, levels of burnout, and the moderator variables of conscientiousness, openness of experience, and climate for innovation. The present study identified a four-factor solution of the School Psychology Stress Inventory (Wise, 1985) using principal axis factoring with varimax rotation, and themes emerging from the present four-factor solution are consistent with previous research. Although studies of stress have been conducted with samples of school psychologists, research has not examined the moderator of climate for innovation. Hierarchical regression determined the degree to which scores of the School Psychology Stress Inventory (Wise, 1985), NEO-Five Factor Inventory Form S (Costa & McCrae, 1992), and Climate for Innovation Measure (Scott & Bruce, 1994) added to the prediction of personal accomplishment or depersonalization as measured by the Maslach Burnout Inventory (Maslach & Jackson, 1986). The models predicting the criterion of depersonalization explained, at maximum, 22% of the variance and the models predicting personal accomplishment predicted, at maximum, 17% of the variance. When factor scores for stress were entered into the models, an increase in variance explained in the prediction of depersonalization and personal accomplishment was evident (28.9% and 25.4%, respectively). Implications of these Canadian findings are discussed in terms of the theoretical model, the constraints of school psychologists' roles in various systems, and implications for practice.

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Stressors, Climate for Innovation, Openness to Experience and Conscientiousness as
Predictors of Depersonalization and Personal Accomplishment
Among Canadian School Psychologists

Introduction

The issues of stress and burnout in areas such as nursing, teaching, and mental health professionals have received considerable attention in the literature (Jackson, Schwab, & Schuler, 1986). High psychological stress and burnout at work has been reported by 39% of Canadian teaching and health professionals (Centrale des syndicats du Québec, 2004). To a more limited degree, stress as well as burnout among school psychologists have also been examined (e.g., Forte, 2002; Kaplan & Wishner, 1999; Kleiber & Enzmann, 1990; Wylie, 2003). The examination of both the areas of stress and burnout are important as the terms are not synonymous and because stress may or may not lead to burnout.

The examination of stress among samples of school psychologists from the United States (Hueberty & Huebner, 1988; Huebner, 1992, 1993a, 1993b; Reiner & Hartshorne, 1982; Wise, 1985), the United Kingdom (Burden, 1988); Australia (Burden, 1988), and Norway (Ostlyngen, Storjord, Stellander, & Mar, 2003) have been conducted. Results have illustrated that internationally, school psychologists report similar levels of stress (Burden, 1988). However, the rankings of stressful events differ by country. For instance, British and Australian school psychologists ranked the notification of unsatisfactory job performance, threat of legal action, and incompetent supervisors as more stressful than did the American sample (Burden, 1988).

The experience of burnout has also been studied among school psychologists, and the link between burnout and attrition from the field has been demonstrated (Huebner, 1993a, Hueberty & Huebner, 1988). Burnout has been associated with health issues, impaired emotional status, and interpersonal relationship difficulties (Kahill, 1988) and several studies have examined the variables of stress and/or of burnout among school psychologists (Huebner & Mills, 1997; Huebner 1992; 1993a; 1993b; Wise, 1985). Other researchers have added personality variables (e.g., Sandoval, 1993; Wylie, 2003) and environmental variables (e.g., Beehr, 1994) to their analyses. However, studies of school psychologists have not been based upon any theoretical models conceptualizing how stress and burnout are related.

Beehr's (1994) model of stress provides a theoretical structure delineating the relationship between the experience of stressors and of burnout (see Figure 1). The model purports that variables affecting the health of the individual can lead to symptoms of individual strain, also known as burnout (Beehr, 1994). According to Beehr (1994), environmental and personality variables can moderate the relationship between the variables that create strain (i.e., stressors) and the experience of strain (i.e., burnout). Beehr (1994) argued that identifying relevant personality and environmental variables is an area for potential research. Critical in this line of thought is the interactional roles personality and environmental variables play in the relationship among stressors and the experience of strain or burnout.

One approach to explore personality variables is to examine them using the five factor model of personality (John, 1989, 1990). Research has widely supported the five factor model (FFM) comprised of Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience (John, 1989, 1990). These five factors have

appeared consistently in factor analyses of ratings across samples, factor extractions, and rotation methods (Goldberg, 1993; Wiggins & Trapnell, 1997). This framework of personality is useful to understand personality features (Goldberg, 1993). Research on the experience of burnout, specifically the component of emotional exhaustion, has indicated associations with neuroticism, as such behaviors are consistent with low emotional stability (Huebner & Mills, 1994; Johnson, 1982; Wylie, 2003). Conscientiousness (Huebner & Mills, 1994; Wylie, 2003) and openness to experience (Zellars, Hochwater Perrewe, Hoffman, & Ford, 2004) have also been linked to components of burnout. Furthermore, these two variables have been associated with creative behavior (Costa & McCrae, 1992; Feist, 1998; King, McKee-Walker, & Broyles, 1996; McCrae, 1987; McCrae & Costa, 1989) and therefore may have consequent associations with innovative behavior.

One domain of potential research with regard to environmental variables is the climate for innovation present in the workplace. The ability to innovate was originally proposed by Dwyer (2001) as a method to reduce the high attrition rates of school psychologists and to continue to expand the role of the school psychologist. The ability to innovate resonates with the arguments proposed by Sheridan and Gutkin (2000) and by Ysseldyke et al. (1997) to expand the roles of school psychologists so that they are not limited to assessment. Furthermore, the ability to innovate may be needed in the other roles of the school psychologist. For instance, the roles of consultation and of conducting interventions may benefit or even require the ability to innovate.

An employee's ability to innovate is logically and necessarily dependent upon the work environment's support for innovation. In schools, the work environment is greatly influenced by district administration (e.g., district administrators and personnel) as well

as district policies and their implementation. However, the mechanism by which a school environment can allow or limit the various degrees of innovation by the school psychologist and the consequences of this on the levels of stress and burnout has never been examined in the school psychology literature.

The majority of studies examining stress and burnout among school psychologists have been conducted in the United States (Hueberty & Huebner, 1988; Huebner 1992, 1993a, 1993b; Reiner & Hartshorne, 1982; Wise, 1985). According to the Canadian Association of School Psychology, as well as the existing literature (Oakland, Faulkner, & Annan, 2005; Saklofske et al. 2000), the roles and functions of school psychologists in Canada are consistent with the roles and functions of school psychologists in the United States. However, stressors and burnout have not been examined among Canadian school psychologists.

Oakland et al. (2005) argued that Canada is quite similar to the United States in that the governments are democratic, English is primarily used, the economy and public school system are well developed, the profession of psychology is well established, and Western values are predominant. However, legislative differences regarding education for students with disabilities are more pronounced and extensive in the United States. Consequently, the working conditions and stressors of school psychologists in Canada may vary, and the rankings of stressful events and levels of burnout may differ from those found for American samples.

The purpose of this study is to examine stress and burnout as rated by a national sample of Canadian school psychologists using the School Psychology and Stress Inventory (SPSI; Wise, 1985) and the Maslach Burnout Inventory (MBI; Maslach & Jackson, 1986) consistent with Beehr's (1994) model of stress. In addition, the influences

of personality variables of conscientiousness and openness to experience, as rated by the NEO Five Factor Inventory scale (NEO-FFI; Costa & McCrae, 1992) and the climate for innovation, as rated by the Climate for Innovation Measure (CIM; Scott & Bruce, 1994) will be explored. Furthermore, the factor structure of the School Psychology and Stress Inventory (SPSI; Wise, 1985) will be examined with the national sample.

Beehr's (1994) model allows for a theoretical link between the experience of stressors and burnout. Although previous research has examined stress and burnout among school psychologists, as well as the role of personality characteristics (e.g., Huebner & Mills, 1997; Wylie, 2003), no theoretical foundation for the examination of these variables and their interactions exist. The climate for innovation has not previously been examined as a variable affecting in the relationship between stress and burnout. Moreover, an examination of the impact of stress and burnout among school psychologists in Canada has not been presented in the literature to date nor has the factor structure of the SPSI been completed with this population.

Conceptualizations of Stress

Newton (1989) argued that stress has little conceptual and operational clarity, consequently confusion in the literature exists. Ironically, when Seyle introduced the concept of stress in the 1950's, he first conceptualized it as a process caused by external or internal demands. Unfortunately, because his English language proficiency was not yet firmly established, Seyle misused the term *stress* and later confessed that he should have used the term *strain* instead (Jex, Beehr, & Roberts, 1992). The confusion regarding the meaning of stress in the literature and the interpretation of stress by participants and by researchers continue today.

In the literature, stress has been conceptualized as a: (a) response; (b) stimulus; or (c) stimulus-response relationship (Jex et al., 1992). As a response to external demands, stress has been defined as “the wear and tear caused by life” (Selye, 1956, p. viii). The construct was expanded to include any response of the body made to any demand placed upon the body (Seyle, 1974). Stress is not necessarily always debilitating. Stress can be proactive, assisting an individual to be most efficient to meet the demands posed (Seyle, 1956). However, according to Seyle’s General Adaptation Syndrome, stress can be negative when there is an imbalance between coping skills and resources of the individual and the external demands of the environment (Seyle, 1956). Once this imbalance is present, the consequences may be harmful for the person experiencing it.

The stimulus conceptualizations of stress have examined the effects that external objects, events, and/or forces have on the individual. Lazarus and Cohen (1977) categorized these external events into three categories: cataclysmic stressors (e.g., tornadoes, hurricanes), stressors that challenge one’s adaptive capabilities (e.g., divorce, death), and constant stressors (e.g., noise, paperwork, traffic). Although the third group of stressors may not seem as severe as the first two categories, Lazarus (1966) argued that because of its consistency, the third group is highly correlated with occupational difficulties.

The stimulus-response conceptualizations of stress have also been referred to as the transactional models of stress. Specifically, these theories examine the interaction of stress with one’s internal resources. One may posit that all individuals are exposed to the same levels of stress throughout various periods of their lives. The key difference is the internal resources that one has available to cope with these demands at different periods in time. In his theory of the stress appraisal process, Lazarus (1966) argued that internal

resources include one's perceptions, interpretations, and coping mechanisms. Other theories describe stress as an inability of a person's resources to meet the demands of the environment. Harrison (1978) described stress as when one's skills and abilities are not sufficient to meet perceived or actual demands of the environment. Fimiam and Blanton (1987) similarly described stress as when one's cognitive and affective patterns are insufficient to address external demands.

A consistent meaning of the term stress has been elusive both to researchers and to survey respondents, furthering the argument that the conceptualization of stress is difficult. In a survey of the literature, 41% of articles surveyed employed the meaning of the term stress as stimulus conditions, 22% as responses, 25% as stimulus-reaction, and 14% were unclear (Jex et al., 1992). With regard to the general public, this confusion can alter the responses by participants in research studies. The public may interpret the word stress in the survey with their own bias, such as equating it to a stressor, and not necessarily consistent with the construct that the researchers intended. Jex et al. (1992) argued that researchers may not necessarily be assured that their interpretation of stress matches the respondent's interpretation of stress. This is a methodological concern and one recommendation is to place the intended definition of stress in the survey or to remove the term stress entirely, if possible (Jex et al., 1992).

Organizational Models of Stress

Theories of work-related stress allow for the unique variables found in the work setting to be examined. Several proposed organizational models of stress exist including the person-environmental fit theory (Harrison, 1978), the job demand–job control model (Karasek, 1979), and the effort–reward imbalance model (Siegrist, 1998) among others. These models of organizational stress examine various degrees of an interaction between

one's individual disposition or needs with the conditions of the work environment. Of particular interest to this study is Beehr's (1994) model of stress.

Beehr's (1994) model of stress essentially posits that variables within the work environment or specific job stressors cause strain in the individual as depicted in Figure 1. According to this model "any characteristic of the work that affects health adversely would be a stressor" (p. 13). According to Beehr (1994), the "human consequence" of these variables is individual strain and he further noted that this strain is often regarded as burnout in the human services professions (p. 13). Individual differences can be accounted for because the impact of work stressors on the strain experienced is moderated by environmental and personal variables (Beehr, 1994).

Beehr's model can be applied to the field of school psychology because of its adaptability. Unlike other models of stress, the various work conditions experienced by school psychologists, such as deadlines, incompetent supervisors, and travel requirements are considered stressors in Beehr's model. Furthermore, the model allows for the change of environmental conditions from one geographic location to the next. For instance, the environmental stressors in rural school districts differ from those in urban schools and are not necessarily the same across different regions (Hosp & Reschly, 2002).

Furthermore, Beehr's model allows for a theoretical link between the experience of stressors and burnout. Although previous research has examined stress and burnout among school psychologists (e.g., Huebner & Mills, 1997; Wylie, 2003), no theoretical foundation for the examination of these variables was advanced with this unique professional group.

Figure 1. Beehr's model of occupational stress

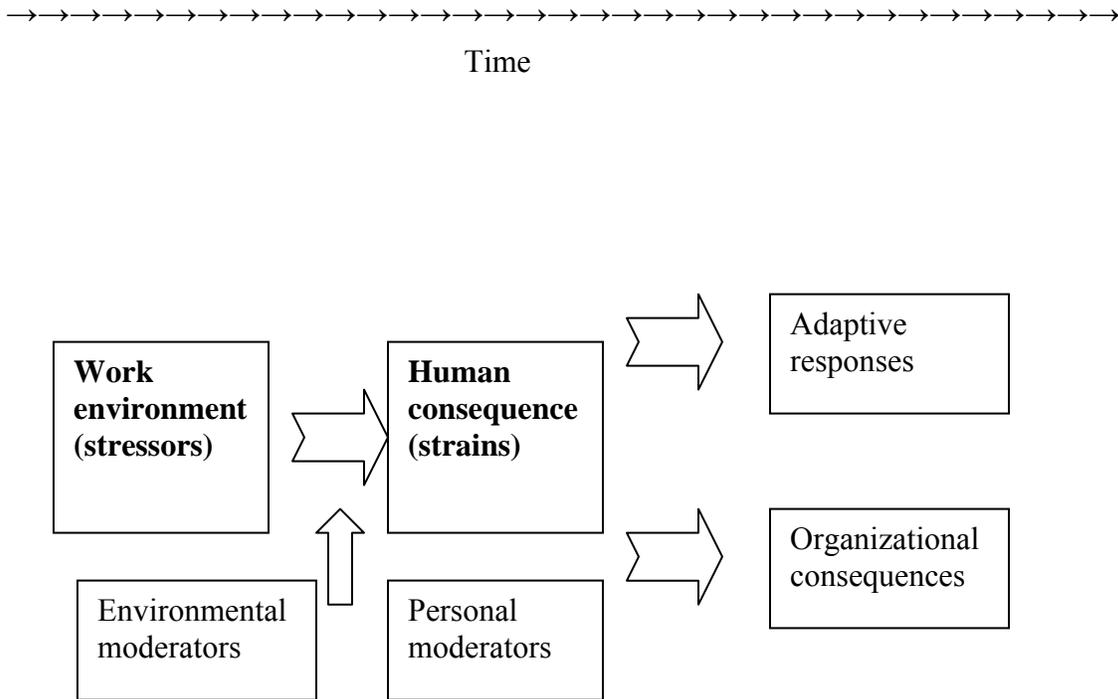


Figure 1. Beehr's model of stress. The core relationship is the work environment (stressors) to the human consequences (strains). Moderators include both environmental and personal variables.

From "Psychological stress in the workplace" by T. A. Beehr, 1994, p. 13. Copyright 1994 by Routledge. Adapted with permission of the author.

Stressors among School Psychologists

The experience of stress has been examined among several human service professionals (e.g., nurses, teachers, doctors). The external demands of the environment have been examined through the use of rating scales designed to measure the rankings of stressfulness of work demands. Holmes and Rahe (1967) initiated the use of such a scale to examine the stressful events that occurred in the lives of individuals. Specifically for school psychologists, Wise (1985) created the School Psychologists and Stress Inventory (SPSI; Wise, 1985). This survey work has been replicated with American, Australian, and British school psychologists (Burden, 1988; Huebner, 1992).

The examination of stress among school psychologists was initiated by Wise (1985), who developed a survey based on responses of 534 school psychologists across the United States. Nine aspects of stress were found: (a) Interpersonal Conflict (conferences or staffing with resistant teachers, working with uncooperative administrators); (b) High Risk to Self and Others (crisis situations, child abuse cases, teachers' strikes); (c) Obstacles to Efficient Job Performance (inflexible supervisors, inadequate secretarial help, feeling caught between a child's needs and administrative constraints); (d) Public Speaking (in-service workshops, parent groups, public speaking engagements); (e) Time Management (not enough time, backlog of reports or referrals); (f) Keeping the District Legal (due process, compliance issues); (g) Hassles (carrying materials between schools in inclement weather, driving); (h) Professional Enrichment (inability to keep up with the literature in the field); and (i) Insufficient Recognition of Work. Notably, survey results indicated that female school psychologists reported more stress when there was a case involving risk to self than males whereas younger school

psychologists reported experiencing more stress in public speaking engagements and when coping with daily hassles (Wise, 1985).

Huebner and Mills (1997) used the Wise (1985) survey with modified instructions. Rather than rating the expected level of stress they would experience, school psychologists were asked to rate the actual level of stress experienced in situations. Two other key differences to the original Wise study are to be noted: school psychologists were surveyed in October and in May, and only school psychologists in North Carolina were sampled. Higher levels of overall stress were reported in May than in the October sampling, indicating that the experience of stress may increase at the end of the year (Huebner & Mills, 1997). The authors reported considerable overlap with the Wise (1985) study but some differences were found as well. In the Huebner and Mills (1997) study, organizational issues and everyday hassles were rated as most stressful, whereas results from Wise's (1985) study revealed that notification of poor performance and high profile cases (i.e., suicide, child abuse) induced the most stress. Thus, while some events would be stressful if they occurred, the most stress resulted from the everyday, ordinary hassles that actually occurred.

On the SPSI, Huebner and Mills (1997) completed an oblique rotation to allow for correlated factors and only eight factors emerged with eigenvalues of more than one. Another way in which these studies differed was that the Hassles factor in Wise's study was renamed the Travel Conditions and the High Risk to Self and Others factor was split and renamed High Risk to Self and High Risk to Others. Wise's items for the factor Keeping District Legal was loaded upon the High Risk to Other's factor. The item for Wise's Professional Enrichment factor was loaded under the Personnel factor. Consequently, the eight factors of the SPSI in the Huebner and Mills (1997) study were

the following: (a) Interpersonal Conflict; (b) High Risk to Self; (c) Time Management; (d) Travel Conditions; (e) Programmatic Obstacles to Delivering Effective Services; (f) High Risk to Others; (g) Public Speaking; and (h) Personnel.

Wise's (1985) and Huebner and Mills' (1997) studies share similar strengths and weaknesses. The strengths consist of the general replication of findings with school psychologists both within one state and nationally. In addition, both studies illustrate that stressors are not necessarily synonymous with crisis situations and that everyday stressors such as hassles or organizational conditions have an effect. Unfortunately, neither study used *best practice* in applying factor analysis procedures (Fabrigar, Wegener, MacCallum, & Strahan, 1999).

A second weakness apparent in both studies is the use of *stress* in the survey and the inherent methodological problem with this term. Wise's definition of stress was consistent with a disruption-based definition, such that the stressfulness of an event is measured in terms of how greatly the event disrupts one's life. Huebner and Mills (1997) maintained the same definition.

The use of the term *stress* in the survey was also found in the examination of stressors experienced among practitioners in school psychology and graduate faculty members responsible for training practitioners (Kaplan & Wishner, 1999). One hundred and sixty one graduate trainers of school psychologists and practitioners in New York State were mailed a survey similar to the SPSI. Both the trainers and the practitioners were in agreement with the majority (70%) of the top ten stressful events. The following items were included as both stressors to the practitioners and the trainers: the backlog of assessments and assessment demands, limited resources for families and students, too little time for non-assessment activities, paperwork, limited alternatives to placement in

special education, and the pressure to place a student with difficulties in special education. The main difference between the trainers and the practitioners was evident in the number of stressors the two groups rated as moderate to moderately high. The trainers placed 70% of items in this category whereas the practitioners only placed 25% of the stressors in this category.

The type and level of occupational stressors in school psychologists has also been examined in countries other than the United States. Burden (1988) examined stress using the SPSI for school psychologists in England and Australia. Both groups reported more stress overall than Wise's (1985) sample in the United States. Differences noted included that all groups regarded unsatisfactory job performance as stressful. In addition, the psychologists in England and in Australia reported incompetent supervisors and threat of legal action as more stressful than the American sample had in Wise's (1985) study. The backlog of reports was seen as more stressful to American school psychologists than either the Australian or English samples. Unfortunately, the small sample size ($N = 54$) limits the representativeness of the study. Burden (1988) noted that at the time of data collection, the Australian sample were subject to work difficulties with their supervisor that may have influenced the results. In addition, Burden did not state whether a legal timeline for report completion was present as exists in the United States, thereby providing a possible explanation to the stress experienced by American school psychologists. The demographic variables associated with stress were also of interest. Wise (1985) completed a series of one-way analyses of variance for each of the nine factor scores to assess differences based on demographic variables. Effects were found for gender, age, number of districts served, number of years in one's position, and salary.

Moderating Variables

Personality Variables

According to Beehr (1994), one's personality and the environmental variables moderate the relationship among stressors and the experience of strain. Personality characteristics are presumed to be stable traits of the individual. The Big Five personality factors, also known as the five factor model (FFM) of personality, first appeared in the 1960's and re-emerged in the 1980s, and has generally been accepted in the literature (John, 1989, 1990). The FFM summarizes a broad group of personality attributes. Factor I: Surgency (Extraversion) examines the areas of sociability, assertiveness, and friendliness and has been described as an "energetic approach to the social and material world and included traits such as sociability, activity, assertiveness, and positive emotionality" (John & Srivastava, 1999, p. 121). Factor II: Agreeableness describes an individual who is eager to help others without ulterior motives and is altruistic. Factor III: Conscientiousness describes an individual who has self-control and can plan, organize and direct activities towards clear goals (John & Srivastava, 1999). Factor IV: Emotional Stability (Neuroticism) examines individuals who are low in neuroticism (John & Srivastava, 1999), which refers to having a preponderance of negative emotions such as anxiety, anger, and sadness. Factor V: Openness to Experience or Culture/ Intellect can apply to someone who is intellectually curious, attentive to inner feelings, and imaginative. Individuals who score high on Factor V are open to new ideas (Goldberg, 1993).

Although these five factors do not encompass all of the facets of personality, they "represent the highest hierarchical level of trait description" (McCrae & John, 1992, p. 190). These five factors have appeared consistently in the factor analyses of ratings

across samples, factor extractions, and rotation methods (Goldberg, 1993; Wiggins & Trapnell, 1997). Furthermore, this theory of personality is convergent with other models of personality including Jung's theory and Eysenck's two-factor model as cited in McCrae & Costa (1985; 1989). Due to the theory's comprehensiveness and generalizability (Goldberg, 1993), this type of personality framework is useful for understanding personality features. Although not all personality elements are included, such as a locus of control, this is the most comprehensive framework for understanding personality to date (Goldberg & Saucier, 1995). Furthermore, studies that have focused on individual traits as compared to comprehensive models of personality have been inconclusive (McCrae & John, 1992).

The factors of Conscientiousness and Openness to Experience are of particular interest to this research study. These two factors have been associated with creativity (Costa & McCrae, 1992; Feist, 1998; McCrae, 1987; McCrae & Costa, 1989) and with components of burnout (Zellars et al., 2004). In addition, based on this research, arguments may be made for hypothetical relations with innovation. Notably, the factors of Neuroticism and Agreeableness are considered to be more significant contributors to the prediction of burnout as compared to Conscientiousness and Openness to Experience (e.g., Burke, Brief, & George, 1993); however, their relationship with creativity is lacking.

Openness to Experience has the most empirical support with creativity (Feist, 1998). The characteristics of openness and flexibility allow for the cognitive style of being receptive to alternate ideas, finding novel solutions to problems, and appreciate novelty (Feist; King et al., 1996). Possible reasons for this association with creativity have included better performance on creative tasks, cognitive skills associated with facets

of creativity, and past experience reinforcing skills (McCrae, 1987). However, Feist (1998) presented the argument that disciplined motivation is necessary to guarantee the *expression* of the idea that has been generated. To compare, innovation, as will be discussed later, consists of the implementation of ideas (Kanter, 1988) that are a result of creativity, defined as the generation of ideas (Mumford & Gustafson, 1988). As innovation requires creativity, the construct of openness to experience should theoretically be related to the construct of innovation as well.

Unlike the relationship between Openness to Experience and creativity, the role of Conscientiousness and creativity has been described as a “dilemma” (King, et al., 1996, p. 191). The elements of conscientiousness describe individuals who are controlled, careful, cautious, responsible, and persevering, for instance (Feist, 1998) and are contrary to the qualities that resonate with creativity (King et al., 1996). However, with respect to the generation of and the implementation of ideas, the value of conscientiousness is seen as productivity is necessary for achievement (King et al.) and is required for the ability to innovate.

In a meta-analysis, Feist (1998) confirmed that creativity and openness to experience and conscientiousness are strongly related to creativity. Creative artists compared to nonartists have greater effect sizes on the Openness to Experience scales ($d = .47$) and smaller effects sizes on Conscientiousness ($d = -.49$) scales. However, scientists who are rated to be less creative, have median effect sizes on Conscientiousness ($d = .30$) and on Openness to Experience ($d = .31$). Feist differentiated different levels of creativity in the scientist and this differentiation was also evident in King et al. (1996). In a series of setwise hierarchical multiple regressions, King et al. (1996) demonstrated that openness to experience mediated the relationship between creative ability and creative

accomplishment. Individuals with high openness to experience particularly had a positive association between creative ability and accomplishments. More importantly, a further distinction was made by King et al. (1998) that was not addressed by Feist (1998), with low levels of creativity, there was a positive association between conscientiousness and creative accomplishments. With high and medium levels of creativity, conscientiousness was negatively associated with creative accomplishments and may be due to the higher standards may reduce number of accomplishments.

Given the need to examine aspects of the environment and its determination of behavior, George and Zhou (2001) further examined how openness to experience and conscientiousness interact with the environment to support or discourage creativity in a sample of employees of a manufacturing company ($N = 149$). However, as George and Zhou (2001) defined creativity as the expression and implementation of ideas, innovation was actually examined in their study. The variables in the environment were the following: positive and negative feedback; algorithmic or heuristic tasks; high or low levels of close monitoring; and high and low levels of inaccurate communication. In a series of setwise hierarchical multiple regressions, creative behavior, or innovation, was found to be the highest when individuals with high openness to experience received conditions that were supportive of creativity, namely positive feedback and heuristic tasks. Individuals with high levels of conscientiousness in environments where there are high levels of close monitoring and high levels of inaccurate information exhibited reduced levels of creative behaviors, namely innovation, as these individuals tend to conform with environmental expectations.

The personality variables of conscientiousness and openness to experience have been studied, although to a limited degree, as playing a role in the experience of stress

and burnout in school psychologists. Using a sample of 81 Arizona certified school psychologists who completed the SPSI, the MBI, and the NEO-FFI (Form S), Wylie (2003) examined the relationship between burnout, stress, personality, and demographic variables. The participants included 60 females and 21 males with a mean age of 44.5 years ($SD = 9.59$), and approximately 25% had a master's degree and 75.3% had a master's degree plus other degrees. Fifty-three percent of participants reported conducting more than fifty evaluations per year, and the majority of the participants (80.2%) worked in elementary schools. Individuals who ranked high on conscientiousness and are punctual, self-disciplined, ambitious, and persevere reported low levels of depersonalization (Wylie, 2003). In addition, school psychologists who rated themselves low on the Conscientiousness scale also rated themselves high on the Personal Accomplishment scale of the MBI. Other results demonstrated that there were no significant correlations between age, number of degrees obtained, grade assignment, evaluation, and burnout.

Personality variables and their role in components of burnout of school psychologists have been examined. Huebner and Mills (1994) examined burnout and personality variables among 90 school psychologists in South Carolina. Using the NEO-FFI and the MBI, three of the five personality factors (Agreeableness, Extraversion, and Conscientiousness) predicted burnout. As compared to demographic variables (student ratio, highest graduate degree obtained, number of schools served, gender, age, and number of psychologists) and the role satisfaction measures (discrepancy from actual to ideal time spent in assessment, consultation, research, and clerical tasks), personality variables uniquely contributed to the prediction of burnout.

Sandoval (1993) further examined the relationship between burnout, as measured by the MBI, and personality characteristics. Fifty participants out of 100 randomly recruited school psychologist members of the California Association of School Psychologists completed the MBI and the California Personality Inventory (CPI; Gough, 1987). Individuals who were well adjusted, free of neuroticism, moderate, and mature experienced lower levels of burnout. However, small sample sizes, volunteer bias, and the use of self-reports limit the results of this study, as well as the previous studies examined (e.g., Huebner & Mills, 1994; Wylie, 2003).

To conclude, ample evidence supports the inclusion of the FFM personality variables of openness to experience and conscientiousness in the examination of stress and burnout. Furthermore, the literature demonstrates support for examining the various interactions of these personality variables as per their relationship with creativity and innovation.

Environmental Variables

Current school psychological practices do not necessarily match the envisioned and ideal role identified at the Thayer Conference of 1954 (Gutkin & Conoley, 1990; Sheridan & Gutkin, 2000). Sheridan and Gutkin (2000) argued that the quality of the current delivery of school psychology services is limited by variables namely, adhering to the medical model of diagnosing the child, dispersing information primarily through reports and brief meetings, and having policy and legislation dictate and create the role of school psychologists.

Current estimates of school psychologists' time expenditures reveal that, on average, approximately 50 to 55% of their time is spent in the assessment role (Reschly, 2000). The remaining time is devoted to direct intervention, problem-solving

consultation, systems/organizational consultation, applied research, and program evaluation (Reschly, 2000). These findings support previous studies indicating that assessment was the primary function of school psychologists (e.g., Cheramie & Sutter, 1993; Smith, 1984).

The assessment role of the school psychologist is an important one. Norm-referenced measures provides families and teachers with information regarding the levels at which students are functioning (Reynolds & Kamphaus, 1990). Individually administered measures are employed in order to identify students with difficulties, such as learning disabilities and mental retardation (Hyman & Kaplinski, 1994; Wilson & Reschly, 1996). Findings from these measures can “open the gate” to special education services (Fagan & Wise, 2000, p. 28). In addition, the assessment role assumed by a school psychologist has been mandated by the American and Canadian legislature which compels school districts to hire school psychologists (Hyman & Kaplinski, 1994).

However, school psychologists have recognized that they can take on a greater role than simply that of an assessor in order to satisfy both the school’s and the students’ needs (Koch, 2001). Ysseldyke et al. (1997) argued that school psychologists are the “front-line workers” (p. 3) for school reform and recommended an expansion of the role of the school psychologist beyond assessor. The National Association of School Psychologists recently published *School Psychology: A Blueprint for Training and Practice III*, identifying eight competencies and areas of leadership for school psychologists, including systematized service delivery that encompasses “home/school/community collaboration and structure, organization, and climate” (p. 18) and well as “diversity awareness and sensitive service delivery” (p. 16; Ysseldyke et al., 2006).

Many school psychologists report a desire to broaden their role beyond assessment services. Bardon (1994) reported that it would be unnecessary for school psychologists to give up their assessment role -- instead the definition of assessment may need to become broader to incorporate direct service. Levinson (1990) found that school psychologists who have less control over the definition of their role, mainly due to policies in the school district, report more unhappiness with their profession. As the role of the school psychologist broadens, higher levels of satisfaction are reported (Huebner, 1993b) and increases in the psychologists' influence in the school are noted (Jerrell, 1984).

The climate for innovation. In a response to the current status of school psychology, Dwyer (2001) called for an increased ability of school psychologists to innovate so that they may play a more effective role in school reform. The ability to innovate resonates with the arguments proposed by Sheridan and Gutkin (2000) and by Ysseldyke et al. (1997, 2006) to change the role of school psychologists in current practice from that of an assessor to a voice in school and policy reform. Furthermore, Ellis (2005) provides a theoretical model so that innovations can be evaluated in terms of being research-based. The ability to innovate also encompasses the willingness and the foresight to go beyond the traditional and prescribed boundaries of one's role in school psychology. However, research has illustrated that the role of the school psychologist is often dependent upon the discretion of the policies and procedures and/or of the discretion of the school district administration (Jerrell, 1984; Levinson, 1990).

The construct of the climate for innovation has been recognized in the fields of business and management for the past thirty-five years. Innovation has been studied in the fields of business, sociology, and organizational psychology (Anderson & West,

1998). Reviews of this area have been extensive (e.g., Kanter, 1983; Rousseau, 1988; West & Farr, 1990). An innovative climate refers to the “degree to which organization members perceived an organizational climate as supportive of innovation” that would ultimately effect an individual’s innovative behavior (Scott & Bruce, 1994, p. 592). The term innovation has been difficult to define as it has been confused with the construct of creativity. Scott and Bruce (1994) argued that creativity involves creating new ideas (Mumford & Gustafson, 1988), whereas innovation involves the implementation of these ideas (Kanter, 1988). Kanter (1988) described innovation as a multi-stage process. The first step is recognition of the problem and the generation of ideas or solutions to the problem. In the second stage, support for the solution is obtained and a supportive network for the solution is built. In the third stage, a tangible representation of the innovation is created that can be shared with others and used productively.

An organization that supports innovation among its employees has several characteristics: an orientation towards creativity and innovation (Scott & Bruce, 1994), support for the independence of its employees (Kanter, 1983), allowance of diversity of employees (Siegal & Kaemmerer, 1978), and supplies (e.g., resources, time and equipment; Angle, 1989). These characteristics must not only be present but must be perceived by employees as being present (Scott & Bruce, 1994).

To measure the perceptions of employees, the Climate for Innovation Measure (CIM) was first developed in 1978 to examine the perceptions of support for creativity and tolerance of differences (Siegal & Kaemmerer, 1978). Scott and Bruce (1994) updated the scale so as to produce two factors: Support for Innovation and Supply of Resources. The first factor includes the extent to which an organization is open to change,

open to diversity, and supportive of innovative ideas. The second factor examines the adequacy of the resources in the organization (i.e., funds, time, and equipment).

Definition and Conceptualization of Burnout

Several definitions of burnout exist (e.g., Lazarus, 1990; Pines & Aronson, 1988). Unfortunately, these add to the confusion of the operational definition. The term burnout was originally conceptualized by Freudenberger (1974) to describe the symptoms of strain exhibited by employees in human services. Similarly, the definitions for burnout are numerous, as fifteen definitions were cited by Maslach (1982).

Some definitions of burnout cite exhaustion as a key component. Jackson, Schwab, and Schuler (1986) described burnout as a “state of emotional exhaustion caused by excessive psychological and emotional demands made on people helping people” (p. 630). Freudenberger (1980) argued that the exhaustion was caused by the depletion of resources used to fulfill unrealistic expectations. In other definitions, exhaustion is indirectly implied. Cherniss (1980) argued that the process of burnout stems from a growing sense of helplessness. According to Cordes and Dougherty (2003), however, the distinction between burnout and stress is not clearly evident in the literature.

A multidimensional definition of burnout that has had a profound influence in the literature is by Maslach and Jackson (1986). According to their conceptualization, burnout is a syndrome composed of three components: emotional exhaustion, depersonalization, and low personal accomplishment. Emotional exhaustion is caused by excessive psychological and emotional demands made on people helping people and is a critical component of burnout. Depersonalization describes the tendency to no longer perceive clients or patients as individual people but to be dehumanized and deserving of their difficulties (Jackson et al., 1986; Maslach, 1978). Feelings of low personal

accomplishment stem from research on learned helplessness (Abramson, Seligman, & Teasdale, 1978) where efforts of repeatedly failing at a goal eventually produce symptoms of stress, depression, and finally hopelessness (Maslach & Jackson, 1981).

These three components of burnout are related but are “conceptually distinct dimensions” (Huebner & Mills, 1997, p. 104). The relationship among these three components and their role in the definition of burnout has been a source of controversy (Cordes & Dougherty, 2003). Some authors have argued that emotional exhaustion is critical in the process of burnout. Many definitions describe emotional exhaustion as the critical and only component of burnout (Fimian & Blanton, 1987; Golembiewski & Munzenrider, 1986; Jackson et al., 1986; Pine & Aronson, 1988). Other researchers have argued the role of depersonalization in relationship to emotional exhaustion. Leiter (1988) argued that emotional exhaustion was the key factor leading to depersonalization. Yadama and Drake (1995) have argued that depersonalization is the behavioural manifestation of emotional exhaustion, which is primarily mental in nature. However, the conceptualization of burnout as being composed as three conceptually distinct dimensions is generally accepted in the literature (Maslach, Schaufeli, & Leiter, 2001) and is empirically supported by correlational patterns with key variables, such as role conflict, autonomy, and ambiguity (Cordes & Dougherty, 2003).

The Measurement of Burnout

Maslach and Jackson’s (1986) conceptualization of burnout has been operationalized through the development of the Maslach Burnout Inventory (MBI; Maslach & Jackson, 1986). Although other surveys have been used (Reiner & Hartshore, 1982), investigations into and evidence of the psychometric properties of these surveys have not been as comprehensive as the MBI. Maslach and Jackson’s (1981) definition of

burnout as a “syndrome of emotional exhaustion and cynicism that occurs frequently among individuals who do ‘people-work’ of some kind” (p. 299) has been adopted by researchers and the MBI has become the standard tool to assess burnout (Huebner, 1993b; Wylie, 2003).

Convergent validity has been established with the MBI. Significant correlations of MBI scores have occurred with co-workers’ descriptions of employee’s reactions to clients, spouse’s description of employee’s behaviour at home, caseload sizes, and amount of time spent in direct contact with patients (Maslach & Jackson, 1981). In a meta-analysis of research applying the MBI during the period from 1982 to 1994, Lee and Ashforth (1996) examined 61 studies. These studies had samples sizes ranging from 34 to 906 individuals primarily in human service organizations, such as nurses and teachers. The intent of the Lee and Ashforth (1996) meta-analysis was to investigate how demand, available resources, reinforcement contingencies, and behavioral attitudinal correlates were related to emotional exhaustion, depersonalization, and reduced personal accomplishment. The variables were categorized as demands, are identified as the significant predictors of burnout (Cordes & Dougherty, 2003), and included role ambiguity, role conflict, stressful events, and heavy workload. Social support, opportunities of control, participation in decision-making, and autonomy were correlates of resources.

According to the Lee and Ashforth (1996) study, the role of emotional exhaustion in burnout was significant. The correlations of demand and of resources were more strongly associated with emotional exhaustion than with depersonalization and reduced personal accomplishment. Reviews of the literature (Cordes & Dougherty, 2003) have noted that the specific variable of role conflict is associated with emotional exhaustion

and it varies with personal accomplishment and depersonalization, whereas role ambiguity is associated with personal accomplishment. Lee and Ashforth (1996) concluded that emotional exhaustion had a direct relationship with demands and supports and was associated with the correlate of turnover intentions ($r = .44$) and with organizational commitment ($r = -.43$). Depersonalization had a negative correlation with organizational commitment ($r = -.42$) and with job satisfaction ($r = -.44$). While these findings are intriguing, Lee and Ashforth (1996) highlighted three limitations of their analysis. The sequential ordering of the variables was not examined, and some correlates were not included in the study such as demographic and personality attributes. In addition, the correlation between the five demand correlates and emotional exhaustion may have been inflated as three items of the emotional exhaustion scale of the MBI directly measure stress reaction.

The role of emotional exhaustion, as highlighted in the Lee and Ashforth (1996) study, and the role of neuroticism with both emotional exhaustion as well as the other components of burnout, have been a source of debate in the literature. The impact of emotional exhaustion on the experience of burnout has indicated strong associations with neuroticism, as such behaviors are consistent with low emotional stability (Bakker et al., 2006; Huebner & Mills, 1994; Johnson, 1982; Wylie, 2003). Currently, the relationship between neuroticism, also referred to as negative affectivity, and the components of burnout, specifically emotional exhaustion, are unclear and warrant additional research (Burke, Brief, & George, 2004). Problematic to research, the inclusion of neuroticism has been demonstrated to inflate the correlation between stressors and strains and deflate the contribution of other variables (e.g., Brief, 1988, Burke, Brief, & George, 2004).

Recent research indicates that new predictors in the domain of emotional labor contribute to stress and burnout, and further refine the understanding of burnout dimensions (Brotheridge & Grandey, 2002) beyond those explored by Lee and Ashforth (1996). Brotheridge and Grandey (2003) identified that *surface-level* emotional labor (e.g., faking emotions) significantly predicted depersonalization, whereas *deep acting* (e.g., displaying emotions to meet expectations) predicted personal accomplishment. The authors posited that inasmuch as employees were aware of displaying unauthentic emotions, they were detached from work. On the contrary, deep acting increased employees' sense of self-efficacy.

Burnout among School Psychologists

Several studies examining the effects of burnout on school psychologists have been conducted. One study by Huberty and Huebner (1988) surveyed 234 members of the National Association of School Psychologists (NASP) using the MBI. High scores of burnout were correlated with the school psychologists' lack of clarity in role definitions, uncontrollable time pressures from external sources, and pressures placed by the school psychologists themselves. More than one-third of the sample had high Emotional Exhaustion and more than quarter rated themselves with low Personal Accomplishment. The variables that were significantly related to both Emotional Exhaustion and Personal Accomplishment were lack of resources, incompetent supervisors, lack of contact with colleagues, and the feeling of being caught between the needs of the student and the administration.

In regression models, the frequency and intensity of emotional exhaustion models were statistically significant. Specifically, job and role definitions, time pressures, external pressures, and internal pressures, and age contributed significantly in predicting

Emotional Exhaustion. In addition, hours spent in assessment were negatively related to Personal Accomplishment while hours in intervention were positively related to Personal Accomplishment. Hours related to in-service activities were negatively related to Emotional Exhaustion. An increased time in activities not related to traditional assessment decreased the likelihood of burnout.

Huebner (1992) sampled 139 NASP member school psychologists using the MBI, the SPSI, and a demographic questionnaire. More than one-third of the sample met the criterion for high Emotional Exhaustion and more than one-quarter met the criterion of reduced Personal Accomplishment. Ten percent of the sample met the requirements of the high Depersonalization. The greatest contributor to the Emotional Exhaustion and the Depersonalization factor scores were the stressors related to the lack of resources. Specifically, these included unavailability of testing material, inadequate secretarial help, incompetent supervisors, and being caught between the needs of students and administrative constraints.

Examining the relationship between stress and burnout, Huebner (1993b) utilized the SPSI and the MBI with a sample of 179 American NASP members. There was a significant relationship between stress and burnout with 25% of the sample reporting high Emotional Exhaustion, 3% reporting high Depersonalization, and 12% reporting reduced Personal Accomplishment. Huebner's previous study (1992) found that the burnout levels were higher, with the levels being 33%, 10%, and 25% respectively, hypothesizing that burnout levels may be higher in the spring than in the fall. Nevertheless, a significant correlation between stress and burnout remained. Huebner (1993b) further investigated the sample's rankings of job functions as related to the indices of burnout. As the rankings for perceived competence and perceived importance of assessment activities

increased, the burnout indices of Emotional Exhaustion and Depersonalization decreased. Personal Accomplishment ratings increased as activities not related to assessment increased in importance.

The current study proposes to examine the prediction of burnout indices among a sample of Canadian school psychologists, with some key similarities and differences with previous research conducted in the field. The role of personality will be examined in the study (Huebner & Mills, 1994; Sandoval, 1993; Wylie, 2003). However, due to the methodological problems that neuroticism may pose (Brief, 1988, Burke, Brief, & George, 2004) and its strong association with emotional exhaustion (Cordes & Dougherty, 1993), both neuroticism and emotional exhaustion will be excluded. Although this will limit the interpretation of the exploratory findings as emotional exhaustion is a central component to burnout (Fimian & Blanton, 1987; Jackson et al., 1986), it will facilitate exploration of the two remaining yet equally important aspects of burnout (Maslack, Schaufeli, & Leiter, 2001), namely depersonalization and personal accomplishment.

The selected components may also clarify the relationship among the personality variables of openness to experience and conscientiousness vis a vis the role of innovation. Little is understood about this relationship as research is limited to a few studies (e.g. George & Zhou, 2001). Innovation was found to be the highest when individuals with high openness to experience were in a creatively supportive environment (George & Zhou, 2001). Furthermore, King et al. (1996) demonstrated that openness to experience mediated the relationship between creative ability and creative accomplishment. With low levels of creativity, a positive association between conscientiousness and creative accomplishments was found in prior studies, and with both high and medium levels of

creativity, conscientiousness was negatively associated with creative accomplishments (King et al., 1996). Individuals with high levels of conscientiousness in environments where there were high levels of close monitoring and high levels of inaccurate information exhibited reduced levels of creative behaviors, namely innovation, as these individuals tend to conform with environmental expectations (George & Zhou, 2001).

The current study examines the role of stress and its interaction with the variables of personality and climate for innovation as it pertains to the predictive capabilities of indices of burnout. The current study explores how individuals with high or low levels of openness to experience and/or high or low levels of conscientiousness may interact with different levels of climates of innovation and with stress levels, and how these interactions may partially explain the prediction of burnout.

In the field of school psychology, measurement of stressors has been operationalized by the SPSI (Wise, 1985). The SPSI has been used as the primary measure in the field (Burden, 1988; Huebner, 1993; Huebner & Mills, 1997; Wylie, 2003); however, it is recognized that the SPSI may not address the other predictors of burnout, such as role ambiguity or surface level emotional labor, as individual and established constructs. This study will consequently be limited to the stressors defined in the SPSI. Omission of such variables was also done in consideration of an adequate response rate, as an increase in the number of questions in the mail-based survey had the potential to reduce the response rate.

School Psychology in Canada

School psychology in Canada has struggled for a professional identity as strong as it is in the United States (Saklofske et al., 2000). Compared to the United States, the history of school psychology in Canada is ambiguous due to legislative, geographical,

and cultural factors (Saklofske et al., 2000). The history of Canadian school psychology is difficult to describe in a wholistic manner as the area of education is provincially administered and, consequently, school psychology in Canada has been described to have several unique histories (Saklofske et al., 2000).

In the United States, the foundation of the school psychology clinic by Lightner Witmer of the University of Pennsylvania in 1896 set the cornerstone of the field of school psychology (Oakland et al., 2005). In Canada, although initial developments in the field occurred as early on as 1920's, the school psychology profession emerged later in the 1950's (Perkins, 1990; Saklofske & Grainger 1990). In 1919, psychological services were established in Ontario in an effort to identify children with mental retardation and to provide interventions (Perkins, 1990). In the 1920's, school boards in Manitoba hired specialists in testing (Perkins, 1990). During the Second World War, a school board in Winnipeg, Manitoba created a child guidance clinic to serve its students (Saklofske et al., 2000).

Canada's geography and history determine the service provision in the field of school psychology. According to Van Loon and Whittington (1987), Canada is the world's third largest geographic area. The country has 30 million people living throughout 10 provinces, the North West Territories, the Yukon, and Nunavut (Van Loon & Whittington, 1987). Canada was founded by the British and French, and English and French are Canada's official languages. French-speaking populations primarily exist in Quebec, with smaller communities in New Brunswick and Manitoba (Van Loon & Whittington, 1987).

As described by Van Loon and Whittington (1987), the regional disparities in Canada reflect unique cultural, economic, and political environments: Central to the

nation is the economically prosperous province of Ontario, in which the federal capital of Ottawa is found. To the east of Ontario lies the province of Quebec, inhabited by the greatest concentration of *Francophones* (individuals whose first language is French) in the country. In the north of the country are the regions of the Northwest Territories, the Yukon, and Nunavut and are populated by the Inuit, a population that continues to suffer from poverty (Van Loon & Whittington, 1987). In the eastern part of the country are the Atlantic provinces of the Maritimes -- Prince Edward Island, New Brunswick, Nova Scotia, and Newfoundland. The rates of unemployment in these provinces are the highest in the country (Van Loon & Whittington, 1987). The western-most province is British Columbia, which borders the Pacific Ocean. To the east of British Columbia, the Canadian provinces of Alberta, Saskatchewan, and Manitoba, referred to as the Prairies, are found and are considered to be as economically prosperous (Van Loon & Whittington, 1987).

The current status of school psychology in Canada has not reached the same level of development as the profession in the United States. Originally, Canadian school psychologists had no specific training in school psychology and primarily had backgrounds in clinical psychology and/or education (Saklofske et al., 2000). Furthermore, Canadian professional associations have not proposed regulations for accreditation nor have they developed a program review. Consequently, the models proposed by the American Psychological Association (APA) and NASP have been influential. Unfortunately, only 7 out of 90 Canadian universities offer school psychology training and only 2 of these school psychology programs hold APA accreditation (Oakland et al., 2005).

In the United States, the practice of school psychology is heavily influenced by federal legislation (Oakland et al., 2005; Reschly, 2000), such as the Individuals with Disabilities Education Improvement Act (2004), the Rehabilitation Act (1973), Family Education Rights and Privacy Act (1974), and the No Child Left Behind Act (2002). In Canada, federal legislation for education is only covered via the Canadian Charter of Rights and Freedoms (1982). The Charter protects an individual's right to an education and prohibits discrimination due to a disability (Zinga, Bennett, Good, & Kumpf, 2005). All provinces and the three territories have compulsory education laws that support inclusion, individual education plan programming for special needs, parent involvement for assessment and placement, and appeal of special education decisions (Zinga et al., 2005).

However, provinces differ in how special education is addressed. Not only do the disability categories differ across provinces, but certain concepts and procedures such as least restrictive environment and manifestation determination, known in United States, may be nonexistent in some provinces. Furthermore, special education practices and procedural implementation are determined by provincial legislation so practice varies substantially across the country (Oakland et al., 2005).

Roles and Functions of School Psychologists in Canada

The current roles of school psychologists in Canada are similar to those of school psychologists in the United States. Services tend to concentrate upon assessment, intervention programs, and less direct delivery of services (Oakland et al., 2005). Furthermore, school psychologists in Canada believe consultation, prevention, crisis intervention, program development and evaluation, and parent/teacher education are also services that address the needs of students (Saklofske et al., 2000). Oakland et al. (2005)

reported that school psychologists propose six delivery systems: individual psycho-educational evaluations, direct interventions, indirect interventions, research and evaluation, and prevention service.

As there are differences in job descriptions and priorities across areas, these factors, as described by Saklofske and Janzen (1990):

continue to dictate the role of school psychologists are related primarily to the characteristics and needs of the school population. These factors include the number of psychologists, employed in a particular district, the extent of their case load, the psychologist student ratio, an individual's training and professional orientation, rural versus urban settings, the priorities established at local levels, and the overall 'credibility' of the psychological team and the profession within each of the provinces. (p. 331)

Consequently, it can be argued that school psychologists in different geographical areas may experience different levels of stressors as these stressors change. The role of Canadian school psychologists is consistent with a practice model where assessment, direct service delivery, and the development and implementation of preventative programs are essential components (Dumont, 1989). Although the participants in this study will be from Canada, the roles and functions of school psychologists are consistent with those in the United States.

Oakland et al. (2005) argued that Canada is quite similar with the United States in that the governments are democratic, English is primarily used, the economy and public school system are well developed, the profession of psychology is well established, and Western values are predominant. Given the differences in legislation and the consequent differences in employment duties with Canadian school psychologist, while the roles are

consistent among school psychologists of Canada and of the United States, the rankings of stressful events and levels of burnout in Canadian school psychologists is of interest.

Purpose of the Study

The purpose of this study is to examine the factor structure of the SPSI (Wise, 1985) with a sample of Canadian school psychologists. In addition, this study will examine the application of Beehr's model of stress, using the SPSI (Wise, 1985), and two criteria of burnout, specifically depersonalization and personal accomplishment from the MBI (Maslach & Jackson, 1986). The influences of the personality variables of conscientiousness and openness of experience, as measured by the NEO-FFI scale (Costa & McCrae, 1992), and the climate for innovation as measured by the CIM (Scott & Bruce, 1994) will be explored as these variables may moderate the experience of stressors and of strain.

Research Questions Regarding Measurement

1. What is the underlying factor structure of the SPSI and the relationship of the items on the SPSI and its factors with the sample of Canadian school psychologists.
2. Can the SPSI factors be reliably measured?
3. Can the personality characteristics of Openness to Experience and Conscientiousness, the climate for innovation, and experienced stress and burnout (Personal Accomplishment and Depersonalization) be reliably measured by the NEO-FFI, CIM, SPSI, and MBI, respectively, among Canadian school psychologists?

*Research Questions Regarding the Prediction of the Burnout Criterion of
Depersonalization*

4. Is the prediction of Depersonalization enhanced by including the two-way interactions of the variables of Stress, Climate for Innovation, and Openness to Experience over and above a model that already includes three main effects and controls for demographics, specifically gender, marital status, years of employment, school psychologist-student ratio and percentage of time on assessment.
5. Is the prediction of Depersonalization enhanced by including the two-way interactions of the variables of Stress, Climate for Innovation, and Conscientiousness over and above a model that already includes three main effects and controls for demographics, specifically gender, marital status, years of employment, school psychologist-student ratio and percentage of time on assessment.

*Research Questions Regarding the Prediction of the Burnout Criterion of Personal
Accomplishment*

6. Is the prediction of Personal Accomplishment enhanced by including the interactions of the variables of Stress, Climate for Innovation, and Openness to Experience over and above a model that already includes three main effects and controls for demographics, specifically gender, marital status, years of employment, school psychologist-student ratio and percentage of time on assessment.
7. Is the prediction of Personal Accomplishment enhanced by including the interactions of the variables of Stress, Climate for Innovation, and

Conscientiousness over and above a model that already includes three main effects and controls for demographics, specifically gender, marital status, years of employment school psychologist-student ratio and percentage of time on assessment.

Method

Participants

A sample of school psychologists by geographic region within Canada was used in this investigation, as this target population has not been examined in the literature. Of the 548 potential participants who received mailed research packets, 149 (27.2%) returned completed and eligible surveys. Of the surveys returned, 16 (2.9 %) returned incomplete surveys in which over 20% of each questionnaire was missing in a non-random manner and met the standard for case deletion in which a minimum of 10% of the instrument was missing (Hair, Black, Babin, Anderson, & Tatham, 2006). Of the participants, 18 (3.3%) were ineligible for participation as they did not meet eligibility criteria. Eligibility was defined as being employed by and working in a Canadian school district and practicing as a school psychologist or a “psychologist in education” at least part-time during the school year. Return rates varied by region from 0.9% to 35.2% for the Northern Territories and Central Canada, respectively.

The sample distribution did not comport with the 2003 Canadian Census (Statistic Canada Census, 2001) distribution of the Canadian population as evidenced by Table 1. For example, school psychologists from the Prairies, the Northern Territories, and from the Eastern provinces are over-represented whereas school psychologists from Western and Central Canada are underrepresented.

To assess the extent of volunteer bias, the percentage of respondents and nonrespondents were investigated by their distribution across region and across affiliation. As seen in Table 2, variability in response rates is evident across geographic region and affiliation. An analysis of the extent of volunteer bias as per demographic

characteristics (e.g., gender) could not be completed due to the request of anonymity by some provincial associations.

Participants' demographic characteristics are summarized in Tables 3 and 4. Of particular mention is that the majority of respondents who have a degree in educational psychology. Unlike the United States, educational psychology graduate programs in Canada prepare graduates for the practice of psychology in the schools under the title of educational psychology. The majority of participants reported that they work in a setting combination with a socio-economic strata which included 46.8% for low income to upper middle class, 24.1% for low income to middle class; 12.7% for low income to upper middle class; 1.3% for both low income to lower middle class and middle class to upper middle class combinations; 4% for all ranges in middle class, and 10% unidentified combinations. Of the 149 participants, 28% reported a combination of community settings. Combinations ranged from 40% for 42.5% for urban/ rural, respectively, and 12.5% for urban/suburban combinations. Of the sample, 8% reported work settings other than the elementary and secondary school settings which consisted of alternative schools.

Table 1

Proportion of Sample in Survey Compared to Proportion of Population of Canada by Region

Region	Sample		
	Sample (<i>n</i>)	%	% of national distribution
Western	18	12.0%	13.0%
Prairies	50	33.6%	16.7%
Central	57	38.3%	66.0%
Eastern	22	14.8%	4.5%
Territories	2	1.3%	0.3%
Total	149	100.0%	100.0 %

Note. Sample number does not include respondents who did not return surveys, returned incomplete surveys, or who were deemed to be ineligible to participate.

Table 2

Proportion of Respondents in Sample in Survey Compared to Proportion of Nonrespondents of Survey by Region and Group Affiliation

	Respondents	Non-respondents
Region		
Western	3.3%	19.3%
Prairies	9.1%	21.9%
Central	10.4%	24.8%
Eastern	4.0%	4.0%
Territories	0.4%	0.4%
Affiliation		
CASP	5.5%	9.5%
Province	8.8%	35.6%
District	13.5%	25.9%

Note. CASP = Canadian Association of School Psychologists; Province = provincial association; District = participating school districts.

Table 3

Demographic Characteristics of Participants in Sample

Characteristic	<i>n</i>	%
Gender		
Male	38	25.5
Female	111	74.5
Ethnicity		
White	138	92.6
Black	4	2.7
Hispanic	0	0
Other	7	4.7
Marital Status		
Single	21	14.1
Married	110	73.8
Divorced/Separated	17	11.4
Widowed	1	0.7
Education in Psychology		
School	51	34.2
Educational	57	38.3
Clinical	30	20.1
Other	11	7.4
Highest Degree		
Master's	105	70.5
Doctorate	41	27.5
Post-doctorate	3	2.0
Work setting		
Elementary	17	11.4
Secondary	2	1.3
Combination	122	81.9
Other	8	5.4
Community Setting		
Urban	58	38.9
Rural	35	23.5
Suburban	15	10.1
Combination	41	27.5
Private Work		
Yes	49	32.9
No	100	67.1

(table continues)

Table 3 (continued)

Demographic Characteristics of Participants in Sample

Characteristic	<i>n</i>	%
Number of Schools		
1	3	2.0
2	4	2.7
3	11	7.4
4	15	10.1
5 or more	116	77.9
Number of School Districts		
1	140	94.0
2	6	4.0
3	2	1.3
4	1	0.7
SES of clients		
Low income-poverty	11	7.4
Lower middle class	29	19.5
Middle class	24	16.1
Upper Middle	0	0
Combination	84	56.4
Missing	1	0.7
Number of Students*		
Less than 1000	10	6.7
1000 and 1500	23	15.4
1501 and 2000	18	12.1
2001 and 2500	24	16.1
2501 and 3000	27	18.1
3001 and more	47	31.5
Annual Salary		
\$26–35,999	3	2.0
\$36-45,999	5	3.4
\$46-55,999	16	10.7
\$56-65,999	27	18.1
Over \$65,999	96	64.4
Missing	2	1.3

* includes 2% imputed data points

Table 4

Descriptive Statistics of Participants in Sample

Characteristic	<i>n</i>	Minimum	Maximum	<i>M</i>	<i>SD</i>
Age*	149	26	73	46.79	9.87
Years in practice*	149	0	33	11.41	8.10
% of time in assessment	149	0	95%	53.61%	23.60
% of time in consultation	149	5%	90%	28.66%	17.00
% of time in interventions	149	0	60%	11.02%	10.69
% of time in crisis intervention	149	0	35%	5.18%	6.17

* imputed data

*Measures**School Psychology Stress Inventory (SPSI; Wise, 1985)*

The SPSI is a 35-item self-report measure that was intended to provide information regarding the specific stressors that impact school psychologists (see Appendix A). One additional item asks for a rating of the overall job stress. School psychologists rate each item, such as “conducting parent groups” or “report writing”, on a Likert-scale from 1 (*Least stressful*) to 9 (*Most stressful*) based on their experience of (or anticipated reaction to) each stressor. The scale also contains a demographic questionnaire, which was modified from the original survey for this sample (see Appendix B).

The SPSI was developed using a sample of 534 American school psychologist members of NASP. Demographic variables were described in Wise (1985), but there was no comparison of the demographics of the sample to the known characteristics of the NASP membership. The most stressful event rated by the sample was “notification of unsatisfactory job performance” ($M = 7.1$) with the least stressful event being “spending time driving between schools” ($M = 2.4$). Wise (1985) reported that 17 of the 35 items had means that were within the moderately stressful range, defined as having mean ratings above 5.0.

A principal axis factor analysis without iteration was completed on the SPSI using quartimax rotation and retaining nine factors with an eigenvalue threshold of 1.0 (Wise, 1985). Principal axis factor analysis is a factor extraction technique of common factor analysis, an analysis that allows for the examination of the shared variance and acknowledges random error in the analysis (Tabachnick & Fidell, 2001). Unlike common factor analysis, principal components analysis reduces data from measured variables into the linear combinations of variables retaining as much as information possible from the original variables (Fabrigar et al., 1999). Generally, common factor analysis is preferred over principal components as the former produces more accurate solutions (Fabrigar et al., 1999; Snook & Gorsuch, 1989) and acknowledges sampling error and measurement unreliability (Gorsuch, 1990).

Two of the most common factor extraction techniques of common factor analysis are principal axis and maximum likelihood (ML) factoring (Tabachnick & Fidell, 2001), the former used in the Wise (1985) study. Principal axis factoring extracts factors that account for the maximum variance in variables that are observed and the first communality estimates are included in the diagonal of the matrix. Therefore, as the first

factor having the highest squared correlations between the variables and the factor is extracted, it accounts for the greatest amount of variance (Floyd & Widaman, 1995). ML factoring, however, uses the correlation matrix to identify a set of factors that would explain as much of the population variance as possible (Tabachnick & Fidell, 2001). The ML approach is the preferred model-fitting procedure due to the allowance of the computation of goodness of fit indexes (Fabrigar et al., 1999). Although ML is not preferred when the assumption of multivariate normality is severely violated as the procedure is less sensitive, when a Heywood case or a lack of convergence exist (Fabrigar et al., 1999), and when the recovery of weak factors are needed (Briggs & MacCallum, 2004). It is unknown whether the assumption of normality was fulfilled with the data from Wise (1985); although principal axis factoring is robust to violations of normality.

The determination of factor retention and the choice of the method for extraction require a balance between parsimony and of plausibility of the number of factors chosen to account for the data (Fabrigar et al., 1999). The debate regarding various extraction methods is centered around the issue of underextraction and of over-extraction and how the distortion of results may result (Fabrigar et al., 1999). Several procedures for factor retention have been proposed and include the Kaiser-Guttman rule (Kaiser, 1960), the visual scree test (Cattell, 1966), parallel analysis (Horn, 1965), and the Minimum Average Partial method (MAP; Velicer, 1976). Because the levels of accuracy differ across methods, multiple methods are recommended to be used in factor retention as well as the examination of theory and relevant research (Fabrigar et al., 1999). Wise (1985) only employed the Kaiser-Guttman rule which stipulates that the eigenvalues that are greater than 1 in the correlation matrix are equivalent to the number of factors that need

to be retained (Kaiser, 1960). The approach has been criticized as being arbitrary and creating an overestimate of factors retained (Fabrigar et al., 1999; Zwick & Velicer, 1982).

Factor rotation allows for a factor solution to become more interpretable as the mathematical relationship of the data is maintained (Tabachnick & Fidell, 2001). Two general types of rotation include orthogonal and oblique, the former prohibiting correlations among factors whereas the latter allowing it (Fabrigar et al., 1999).

For descriptive purposes, the following is a delineation of the factors, their respective component items, and percent of variance accounted in the Wise (1985) study. However, given the above mentioned deviations from best practices, the following results may not be the most appropriate solution: (a) Interpersonal Conflict (conferences or staffing with resistant teachers, teacher dissatisfaction with your recommendations, lack of consensus in a staffing, working with uncooperative principals and other administrators; 25.3%); (b) High Risk to Self and Others (working in a physically dangerous situations, notification of unsatisfactory job performance, potential suicide cases, threat of due process hearings, child abuse cases, impending teachers' strikes; 8.1%); (c) Obstacles to Efficient Job Performance (inflexible supervisors, inadequate secretarial help, lack of availability of appropriate assessment material; not enough time to perform job adequately, lack of contact with professional colleagues, feeling caught between a child's needs and administrative constraints; 5.4%); (d) Public Speaking (in-service workshops, conducting parent groups, public speaking engagements; 4.3%); (e) Time Management (not enough time, backlog of reports or referrals; 4.0%); (f) Keeping the District Legal (compliance issues; 3.8%); (g) Hassles (carrying materials between schools in inclement weather, driving between schools; 3.4%); (h) Professional

Enrichment (inability to keep up with the literature in the field; 3.2%); and (i) Insufficient Recognition of Work (2.9%).

In their examination of stress among 225 school psychologists in North Carolina, Huebner and Mills (1997) modified the initial instructions of the SPSI about actual levels of stress to include expected or anticipated levels of stress to accommodate stressors that participants may have never experienced (e.g., notice of poor job performance).

However, the factor retention procedure seemed to rely upon the Kaiser-Guttman rule of retaining factors with eigenvalues greater than 1. The factor analysis completed was not consistent with best practice, as described by Fabrigar et al., (1999).

The psychometric properties of the SPSI scores in Huebner and Mills (1997) included an overall internal consistency coefficient of .87 using Cronbach's (1951) coefficient alpha. A test-retest reliability coefficient for the overall SPSI score was not reported although the test-retest reliability coefficients were calculated for factor scores across a seven-month period.

Huebner and Mills (1997) examined the relationship between the factor scores and the demographic variables of age and years of experience. Correlational analyses indicated statistically significant negative correlations between the variable of age and Interpersonal Conflict (-.20), Time Management (-.18), and High Risk to Others (-.18). Years of experience was also negatively correlated with Interpersonal Conflict (-.15), Time Management (-.21), High Risk to Others (-.22), and Programmatic Obstacles (-.22).

Concerns with Wise's (1985) instructions on the SPSI were first recognized by Huebner and Mills (1997) who noted that some stressors in the survey were anticipated rather than experienced. Consequently, directions for the SPSI in their studies were

modified accordingly. Given the methodological concerns regarding the use of the word stress in surveys (Jex et al., 1992), some modifications to Wise's (1985) instructions were needed. Although the words stress and stressful could not readily be deleted from the survey, Jex et al., (1992) recommended that an option would be to provide a definition. Stress, as defined by Wise (1985), is a "disruptive effect a given event has upon a person's life" (p. 31). Consequently, the SPSI essentially queries the extent to which a specified event would disrupt one's life. This question is consistent with Beehr's (1994) definition of stress as a stimulus or "any characteristic of the work that affects health adversely would be a stressor" (p. 13). Thus, the instructions of the SPSI were modified to read as follows:

Please rate each of the items or events listed below as to the amount of stress associated with the event. The ratings should be between 1 and 9. The more disruptive the affect of a given event, the higher the rating. Please rate each item. Do not leave any blank spaces. If you have not experienced an item or event, please estimate the relative stress anticipated with such an event.

The Maslach Burnout Inventory (MBI, Maslach, Jackson, & Leiter, 1996)

The MBI is a multidimensional self-report scale of burnout. Three separate versions of the MBI are available. The Human Services Edition (MBI-HSS) is primarily designed for individuals who work in human services and health care, such as counsellors, psychologists, and social workers. Previous studies examining burnout in school psychologists have utilized this version (Huebner, 1993a; Huebner, 1993b; Reiner & Hartshore, 1982). The MBI-Educator's Survey (MBI-ES) examines burnout specifically for teachers, aides, and administrators. The MBI General Survey (MBI-GS) is specifically designed for individuals who do not have direct service contact, such as

computer technicians. The MBI-HSS edition is composed of 22 items that take approximately 10-15 minutes to complete (Maslach et al., 1996). It contains three factorially derived scales: Emotional Exhaustion (EE; 9 items), Depersonalization (DA; 5 items), and Personal Accomplishment (PA; 8 items; Maslach et al., 1996). Individuals are asked to rate each item (e.g., “How often do you feel tired after work?”) on a Likert scale from 0 (*Never*) to 6 (*Every day*). For purposes of this study, only the scales of Depersonalization and Personal Accomplishment were used.

An overall burnout score is not obtained and is in fact discouraged by the authors in favor of the three scales delineated above (Maslach & Jackson, 1986). Maslach et al. (1996) reported that the criterion for high burnout scores are the upper third of the normative distribution scale for EE and DP and the lower third of the PA scale. For the MBI, “burnout is conceptualized as a continuous variable, ranging from low to moderate to high degrees of experienced feeling. It is not viewed as a dichotomous variable, which is either present or absent” (Maslach & Jackson, 1986, p. 2). Individuals who are high on EE and DP and low on PA are apt to perceive themselves as experiencing burnout.

According to Maslach et al. (1996), normative information for the MBI-HSS and the MBI-ES was based upon responses from 11,067 participants, 730 of whom were mental health professionals. The internal consistency reliability estimates calculated using Cronbach’s alphas were .90 for EE, .79 for DP, and .71 for PA, which are satisfactory given Nunnally’s (1978) criterion. Test-retest reliability coefficients across two-to-four weeks’ time were .82, .60, and .80 for EE, DP, and PA, respectively. Across a three-month period, test-retest reliability coefficients for three months were .75, .64, and .62 for the same scales. Similar weighted mean reliability estimates for the factors have been reported in a meta-analysis (EE = .86, DE = .76, and PA = .77; Lee &

Ashforth, 1996). Thus the MBI's three subscale scores have demonstrated acceptable internal consistency although only the Emotional Exhaustion and Personal Accomplishment subscales have demonstrated acceptable short-term stability.

Evidence for construct validity may be demonstrated by the examination of convergent and discriminate validity (Campbell & Fiske, 1959; Nunnally, 1994). Convergent validity refers to two independent measures of an attribute being highly correlated with each other. Discriminate validity refers to measures examining different attributes producing lower correlations as well as the ability of an instrument to yield relevant group differences.

Evidence for convergent validity was reported for the MBI-HSS scores as reported by Maslach et al. (1996). One manner in which convergent validity was demonstrated by Maslach et al., (1996) was through the correlation with third party observations. A statistically significant correlation was found between the responses on the MBI-HSS of a sample of mental health workers ($N = 40$) and peer observations (Maslach et al., 1996). Correlations were found between the scores for Emotional Exhaustion and the peer observation of the appearance of fatigue ($r = .42$) and scores for Depersonalization and the peer observation of appearing emotionally drained ($r = .56$).

Discriminate validity was argued to be established by low correlations with burnout and measures of social desirability, depression, and of job satisfaction (Maslach et al., 1996). Regarding the discriminate validity with job satisfaction, correlations between the MBI – HSS and the Job Diagnostic Survey (Hackman & Oldhan, 1976), measuring of job satisfaction, were examined among a sample of social service and mental health workers ($N = 91$). A moderate negative correlation with Emotional

Exhaustion ($r = -.23$) and Depersonalization ($r = -.22$) and a positive correlation with Personal Accomplishment ($r = .17$) were found.

Construct validity may also be supported through confirmatory factor analyses (Nunnally, 1994) consistently replicating the three-factor model of the MBI-GS (Cordes, Dougherty, & Blum, 1997; Taris, Schreurs, & Schaufeli, 1999) and the MBI-HSS (Lee & Ashforth, 1990; Schaufeli & van Dierendonk, 1993). The literature has also reported the presence of a two-factor structure for the MBI-ED (Green, Walkey, & Taylor, 1991) and the MBI-HSS (Walkey & Green, 1992) in which a combined Emotional Exhaustion/Depersonalization factor emerged. However, this research is limited in comparison to support of three-factor model. With regard to the three-factor model, Lee and Ashforth (1990) sampled 200 public welfare agency employees, 70% of whom were women, and 90% of the sample having a college degree. A series of confirmatory factor analyses with LISREL examined indices of fit with the three factors (Emotional Exhaustion, Depersonalization, and Personal Accomplishment), two factors (Emotional Exhaustion/Depersonalization and Personal Accomplishment) and one factor (all indicators loading together). The three-factor model was determined to be the best fit with the data, the factor reliability estimates exceeding .80. Specifically concerning the population of interest of this study, Huberty and Huebner (1988) conducted validation research using the MBI-HSS with American school psychologists and applied confirmatory factor analysis to provide support for the three-factor structure.

Schaufeli and van Dierendonck (1993) in the examination of the MBI items determined item loading on factors other than the factors originally intended by Maslach et al. (1996). According to Schaufeli and van Dierendonck (1993), items 12 (“I feel very energetic”; Personal Accomplishment) and 16 (“Working with people directly puts too

much stress on me”; Emotional Exhaustion) loaded on Emotional Exhaustion and on Depersonalization, respectively. Beckstead (2002) recommended that future studies take into consideration these two responses by either having them cross load, remove them from the measure, or allow corrected error terms. However, in the context of validity, Nunnally (1994) argued that the item-level analysis as compared to the scale-level analysis is less important and can be misleading to researchers (p. 335). Furthermore, empirical replication of Schaufeli and van Dierendonck’s (1993) findings is lacking.

Climate for Innovation Measure (CIM; Scott & Bruce, 1994)

The CIM is a self-report, factorially based, 26-item measure examining the perceived work environment using a five-point Likert scale ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*). Questions include “This organization is open and responsive to change” and “There is adequate time available to pursue creative ideas here” (see Appendix C). The scale was based upon a climate for innovation measure by Siegel and Kaemmerer (1978). Originally the scale included three factor-based subtests: Support for Creativity, Tolerance of Differences, and Personal Commitment. Scott and Bruce (1994) modified the scale, removing the third factor and adding items that reflected available resources and rewards for innovation.

The CIM was submitted to engineers, scientists, and technicians of the research and development department of an American corporation ($N = 189$). The sample consisted of mainly males (92%) with a mean age of 41.6 years, the majority of whom had baccalaureate (61.6%) and graduate (41.6%) degrees. Factor analysis using principal components extraction with varimax rotation and factor retention methods being the Kaiser-Guttman rule and the visual scree test supported a two-factor structure. However, an oblique rotation as well as a variety of factor retention methods would have been

consistent with best practice stipulated by Fabrigar (1999). The first factor, Support for Innovation (31% of the variance), reflects the perception that the organization is open to change, supportive of new ideas of members, and tolerant of members' diversity is examined. The second factor, Resource Supply (15%), examines the perception that the extent of resources is seen as adequate in the organization.

Scott and Bruce (1994) found that the Support for Innovation factor was positively correlated with a scale assessing behavioral ratings of innovative behavior designed for purposes of the study ($r = .59$). However, the authors noted a lack of significant correlation between the Support for Innovation and the Resource Supply ($r = -.02$). Additionally, the authors concluded that the Resource Supply variable was not related to Support for Innovation in their proposed path model of innovative behavior. Consequently, for purposes of this study, only the variable of Support for Innovation will be included.

Evidence of sound psychometric properties for the CIM's scores is limited. Cronbach's alpha for the Support for Innovation subscale is .92, which is above the .70 criterion (Nunnally, 1978). However, aside from internal consistency coefficients, no other technical support for scores from this scale (e.g., normative data, validity evidence) is provided in the literature. While the psychometric evidence for this instrument's scores and the measurement of the construct of climate innovation is generally limited, the use of this instrument as an investigative tool is applicable for this study. Its use with the proposed Canadian sample however will be limited by the psychometric properties.

NEO-Five Factor Inventory Form S (NEO-FFI; Costa & McCrae, 1992)

The NEO-FFI is a pencil-and-paper measure of five domains of personality: Neuroticism, Conscientiousness, Extraversion, Agreeableness, and Openness to Experience. For purposes of the current study, only the variables of Conscientiousness and Openness to Experience will be included for reasons described previously. The NEO-FFI consists of five 12-item scales, completed within 10-15 minutes, and is a short version of the NEO Personality Inventory (NEO-PI). Each question poses a statement regarding a personality characteristic and is rated by the respondent on a five-point Likert scale from 1 (*Strongly disagree*) to 5 (*Strongly agree*).

The NEO-FFI was normed on a sample of 983 individuals from the United States from the 1986 administration of the NEO-PI. The normative data are a composite of two subsamples: (a) a group of 635 individuals who participated in the Augmented Longitudinal Study of Aging, and (b) individuals who were active in the longitudinal study but did not participate in the original data collection of the NEO-PI as well as recent recruits to the longitudinal study. The only demographic information reported was the gender of participants for the first subsample. Based upon the normative data, a factor analysis was completed on the 180 items obtained for the NEO-PI and five principal components emerged. The factors were then rotated using the validimax method to maximize convergent and divergent validity (Costa & McCrae, 1992). The NEO-FFI was created by taking the twelve items with the highest positive or negative loading on each of the five factors. Preliminary items were selected and items having loadings on more than one factor were subsequently eliminated.

The Cronbach's (1951) alpha internal consistency reliability coefficients for the factor scores on the NEO-FFI were computed on a second large sample ($N = 1,539$) not previously used in the item selection for the NEO-FFI. The NEO-FFI factor scores have demonstrated substantial internal consistency with coefficients as follows: Neuroticism (.92); Extraversion (.90); Openness to Experience (.91); Agreeableness (.77); and Conscientiousness (.87). Test-retest reliability analysis was not completed with the NEO-FFI.

Construct validity, as evidenced by convergent validity for the NEO-FFI scores, is demonstrated through correlations with the NEO-PI-R as reported by Costa and McCrae (1992). The correlations of the five factors of the NEO-FFI and the ratings of spouses ($N = 84$) ranged from .44 (Conscientiousness) to .65 (Openness to Experience). The correlations of the factors with peer ratings ranged from .33 (Conscientiousness) to .48 (Openness to Experience). As the NEO-FFI is a short version of the NEO-PI, psychometric properties of the instrument have not been as thoroughly examined as the NEO-PI. Specifically, Costa and McCrae (1992) provided divergent validity evidence only for the NEO-PI. Although the NEO-FFI scores' psychometric properties may theoretically mirror those reported for the NEO-PI, it cannot be assumed that the NEO-FFI scores have the same psychometric properties as those for the NEO-PI given that the NEO-FFI is an abbreviated scale (Costa & McCrae, 1992).

Demographic Questionnaire

The Demographic Questionnaire was based on the questionnaire in Wise's (1985) survey with accommodations made for the Canadian population (see Appendix B). Questions included participants' gender, marital status, age, type of community, socio-

economic status of clients served, number of schools worked in, number of years as a school psychologist, and their highest degree in psychology.

To accommodate differences within the sample, questions detailing respondents' background in psychology were included. For instance, individuals whose primary degree is in social psychology may be able to practice in the schools in some regions (e.g., Quebec). The province in which the participant is employed was also requested. The demographic questionnaire inquired whether (a) the participants worked at one or more school boards, (b) the participant worked in urban or rural areas, (c) the participant did private work in addition to working in the school district, and (d) the participant was a permanent employee of the district or a contract worker. Annual salaries have been adjusted from the Wise (1985) survey to range from under \$15,000 to over \$65,000 (Canadian funds) which was consistent with reports by Statistics Canada for salaries in education and in psychology (Statistics Canada Census, 2001).

Procedure

Sampling

A comprehensive sampling of school psychologists by geographic region within Canada was completed. Because potential bias based on membership in a national association exists, to best meet the sample size requirements and to provide a pool of participants that was not limited to national association membership (Huebner & Mills, 1997), sampling was completed on three levels: national, provincial, and regional. Each region of Canada was represented by the three levels of sampling. A pool of 548 potential participants was consequently obtained. Based upon previous literature, the anticipated return rate of the questionnaires was above 50% (Huebner, 1992; Huebner & Mills, 1997; Pierson-Hubeny & Archambault, 1987; Sandoval, 1993; Wise, 1985). However, the rate

of return of other mail surveys with school psychologists is small. In addition, the national membership of Canadian Association of School Psychologists is small ($N = 135$), with not all members meeting minimal qualifying criteria for the study. The return of surveys months after the initial mailing also had to be considered when having a pool of a large number of potential participants. Given the number of variables in proposed multiple regression analyses, the number of potential participants ($N = 548$), as well as anticipated return rate, the study was deemed to be exploratory given that the desired sample size as determined by the power analyses described by Cohen (1982) could not be fulfilled.

On a national level, the Canadian Association of School Psychologists (CASP) participated in the study. Members in each province in Canada who met the qualifying criteria were entered into the potential pool of participants. On a provincial level, each provincial association of school psychologists, if in existence, was approached by telephone and/or by email. The participating associations included the Canadian Association of School Psychologists (CASP), the Manitoba Association of School Psychologists (MASP) and the Saskatchewan Educational Psychologists Association (SEPA). With some associations, names could not be released to the researcher for reasons of confidential agreements between associations and their respective members. Consequently, stamped packets were mailed to the association's main office for random distribution. Representatives of the associations verified the survey distribution by email to the examiner. To avoid duplicate mailings, members of CASP were identified to the provincial association president(s) and were not given surveys by the provincial associations. With the remaining participating associations, names were provided to the researcher who then distributed the survey packets. In one instance, the provincial

association requested payment for its membership lists. Due to financial constrictions, this association was not included in the study; however, the province was represented by school psychologists obtained through CASP and local school districts.

On a regional level, in provinces where no provincial school psychology association existed, an internet search for school districts was conducted. Provincial department of education listings were contacted and/or telephone calls to the department of education were completed. For each school district, initial contact was made by telephone and/or by email with the district employee responsible for the school psychologists of each school district. Once permission was obtained, surveys were either mailed (a) to the district for distribution by the contact department of school psychology or (b) to the school psychologist by name directly, if identified to the examiner by the school district representative. One exception to this protocol was in a school district that prohibited on-site delivery of the survey packets; consequently, the examiner distributed the packets at a provincial conference held off school district premises. Further, when the researcher was advised to submit an application to the district's research department for ethical compliance investigation, that district was withdrawn from the study due to the lengthy process of this application to the school district and the time limitations of this research project. Due to this specific restriction, nine school districts were excluded from the study.

To be included as participant in the study, two criteria had to be met. First, participants needed to be employed by and work in a Canadian school district and second, they had to be employed and practicing as a school psychologist or a "psychologist in education" at least part-time during the school year. These criteria were listed on the envelope of the research packet. The returned surveys were reviewed for

appropriate content and inclusion criteria were verified by responses to survey questions. Surveys were also excluded from the research when survey instruments were not fully completed.

Once the organization membership lists were obtained, all school psychologists' names were categorized by geographic regions based upon the indicated address. When the names could not be obtained, the participants were identified by a numerical code. All school psychologists in each region were assigned a number and a random number generator was used to select the school psychologists who were to receive a mailed packet. The number of school psychologists selected by region was in proportion to the Canadian population. Any prospective participant with an incomplete or undeliverable address was omitted and replaced by another randomly selected individual. School psychologists selected from the potential participant pool were then mailed a research packet inviting participation in the study.

The research packets and measures were identified by an assigned identification number for use in tracking packet status only. Each research packet contained the following information: two cover letter/consent forms explaining purpose of the study (in English and in French; see Appendix F), approved by the Office for Research Protections at The Pennsylvania State University instructions for completing and returning the questionnaires (demographic survey, MBI-HSS, NEO-FFI, SPSI, and CIM), and a self-addressed stamped envelope. The MBI-HSS and the NEO-FFI were modified as per an agreement with their respective publishing companies. The modifications consisted of the instruments being typed into a general questionnaire and not identified by name. For incentive, the phrase "Canadian school psychologists: Have your voice heard" was printed in bold on the envelope.

Practicing school psychologists, or “psychologists in the schools”, were asked to participate if employed as a practitioner in the school setting at the time of the study (defined as within the past year, for more than six-month period). Non-practitioners were asked to return the survey and place “Not applicable” on the cover letter. Two to three weeks after the initial mailing a reminder postcard was mailed. Two weeks later, a follow-up telephone call was placed to those individuals who had not yet returned the research packet if a phone number was available. After four weeks, if the sample size for the geographic region could not be met, additional packets were distributed. While initially designed to use random sampling, the time range for returning packets (one week to four months), the low of return rates, the requirements for a minimum sample size to meet statistical power, and the deadline for this research, the entire pool of participants was eventually sampled.

Data collection began in October, 2006 and was divided into the following data collection phases. Phase 1 began in late October 2006 and consisted of the initial distribution of the packets to the school psychologists of the Maritime provinces (Prince Edward Island, Nova Scotia, New Brunswick, and Newfoundland and Labrador), the Northern territories, and one province of the region of Central Canada (Quebec). Phase 2 started in January, 2007 and consisted of the initial distribution of packets in the Prairies, Western Canada (British Columbia), and the remainder of Central Canada (Ontario). Data collection in all regions continued until the termination date of May, 2007.

Questionnaires were identified with corresponding number for identification, and no personally identifying information was included on the questionnaires. A log matching the identification number with the name of the participant, as obtained from the consent form, was kept in a separate file in secure conditions with the signed consent forms.

Factor Analyses

Factor analysis is a data-reduction technique which summarizes a pattern of correlations among a set of observed variables (Kline, 1994). These factors are formed by variables that are correlated with one another and are simultaneously relatively independent of the other observed variables (Tabachnick & Fidell, 2001). The correlation matrix is reduced to identify latent structures, or factors, that account for the correlations seen in the correlational matrix (Kline, 1994). In exploratory factor analysis, the intent is to identify the smallest number of constructs necessary to adequately reproduce the original correlation matrix (Kline). Factor analysis also purports to reduce the number of variables into smaller units of factors while retaining as much information as possible and theory testing about the nature of underlying processes.

Factor analysis is a multi-step statistical procedure. The procedures include choice of factor analytic approach, extraction method, factor retention, factor rotation, and factor interpretation. The understanding of each procedure is necessary to gage the interpretation of the findings of this study.

Models. Under the realm of exploratory factor analyses, two types of factor analyses are possible: common factor analysis (FA) and principal component analysis (PCA). In both models, the factors are not known prior to the analysis and both reduce a correlation matrix into a structure that can be interpreted. However, there exist fundamental differences specifically the inclusion and the role of error variance in the production of the factor solution (Snook & Gorsuch, 1989; Tabachnick & Fidell, 2001). PCA analyzes all the common, unique and error variance. Because error variance is included in the analysis, PCA is not appropriate when the intent is to examine the underlying latent structure of a construct (Gorsuch, 1997; Wegener & Fabrigar, 2000).

However, FA only examines the common variance as the assumption of FA is that the inclusion of error and unique variance will decrease the interpretability of the solution (Tabachnick & Fidell, 2001).

Extraction methods. Within FA, several methods of factor extraction exist, with the two most common being principal factors and maximum likelihood. Both methods extract factors that in combination can reproduce the original correlation matrix. With data sets that have large sample sizes and variables with similar communality estimates, solutions do not differ with various extraction methods (Tabachnick & Fidell, 2001).

The extraction method of principal factors (or principal axis factoring), the initial communality estimates are included in the diagonal of the correlation matrix (Tabachnick & Fidell, 2001). The estimates are derived through an iterative procedure which begins with squaring the multiple correlation with each variable as the starting point (Kline, 1994). The intent of this method is to extract the maximal orthogonal variance from the data set with each factor. This extraction method is commonly used for data sets that do not exhibit a normal distribution and that have small sample sizes (Fabrigar et al., 1999).

Factor Retention. The issue regarding how many factors to retain has been plagued by the instances of both the over-extraction and underextraction of factors. The key dilemma is to adequately fit the data while maintaining the parsimony of the choice of factors (Tabachnick & Fidell, 2001). Over-extraction has been considered to be harmless although the over-extraction of more than two factors results in the lack of identification of a common factor (Gorsuch, 1983). Factor underextraction is considered to be more serious because of the loss of information and that a successive amount of variance is extracted with each successive factor (Fava & Velicer, 1992).

A series of techniques exist that can be utilized to determine the appropriate number of factors to extract, and these techniques can be used alone or in combination: the Kaiser-Guttman unity-eigenvalue rule, the scree test, the parallel analysis criterion, the chi-square goodness-of-fit index, and theoretical convergence.

The unity-eigenvalue rule (Kaiser, 1960) implies that the factors with eigenvalues greater than one should be retained and is the most commonly used method of retention. The method has been criticized for overestimating the number of factors (Zwick & Velicer, 1986)

The scree test is based on the examination of the plot of eigenvalues (Zwick & Velicer, 1986). The eigenvalues are plotted and a straight line is fitted through the smaller values. The factors with the eigenvalues falling above the line are retained. Because the researcher interprets the number of factors to retain, the procedure has been found to be inconsistent and inaccurate (Zwick & Velicer, 1986).

Parallel analysis (Horn, 1965) is an adaptation of the population-based unity-eigenvalue rule and is another method used to determine factor retention (Zwick & Velicer, 1986). Comparisons are made between the observed sample eigenvalues and the eigenvalues for a randomly generated correlation matrix based on a sample of identical size. The eigenvalues obtained from the observed data should be larger than the eigenvalues obtained from the random data set for the number of factors consequently retained. Zwick and Velicer (1986) reported that parallel analysis performed better than both the scree test and the unity eigenvalue rule and concluded that the technique is consistently accurate.

Factor Rotation. Gorsuch (1997) indicated that the guiding principle for this stage in factor analysis is the attainment of simple structure -- the factor solution which is the

most “interpretable, psychologically meaningful, and replicable” as compared to all remaining solutions (Fabrigar et al., 1999, p. 281). Although other salient characteristics have been delineated (see Kline, 1994), the law of parsimony is critical in the attainment of a simple structure. Parsimony is inferred when factors have a few variables that have high factor loadings while other variables have small factor loadings. Furthermore, variables should tend to load on a single factor.

Rotation allows the number of variables that load on a factor to be minimized and can assist in obtaining a simple structure (Kline, 1994). The two types of rotations are orthogonal and oblique (Gorsuch, 1997). The primary difference is that orthogonal methods rotate the factors at 90 degree angles and therefore the factors are uncorrelated (Kline, 1994). Orthogonal rotations include varimax, quartimax, and equamax (Tabachnick & Fidell, 2001). Upon the suspicion of a correlation among factors, an oblique rotation is to be performed, such as direct oblimin (Tabachnick & Fidell, 2001).

No generally agreed upon method for factor rotation exists. Orthogonal rotations are often preferred because of the ease of interpretability as the factors are assumed to be uncorrelated with one another (Nunnally, 1978). However, since other variables are correlated with one another, oblique rotations provide information about the associations (Fabrigar et al., 1999). Various rotations with the same data set are suggested for exploratory purposes (Kline, 1994).

Factor Interpretation. The interpretation of factors implies an understanding of the variables that load upon the factor. Tabachnick and Fidell (2001) stipulate that variables that correlate above .32 are to be considered as a factor loading on that factor. Kline (1994) argued that structure coefficients below 0.3 are not interpretable, structure

coefficients between 0.3 and 0.6 are moderate and structure coefficients over 0.6 are high.

Data Analyses

Participants' demographic information was collected using a demographic questionnaire. Data were entered in SPSS and an independent coder verified all data points.

The raw scores of the MBI and the NEO-FFI were converted into *T* scores ($M = 50$, $SD = 10$) as per their respective administrative and scoring guidelines. The SPSI total score, comprised of the sum of all Likert ratings for the 35 questions, was converted to a *T* score using area conversion methods (Cohen & Cohen, 1983). The scores for the CIM were calculated by the summing the items' Likert ratings after reversing the valence when appropriate to accommodate oppositely phrased items, then the raw scores were converted into *T* scores. Interactions between variables were created by the multiplication of the individual variables (e.g., Openness to Experience multiplied by Stress). The transformation of the raw data into *T* scores centered all data and reduced the potential effects of multicollinearity (Cohen & Cohen, 1983).

To specifically address the research questions posed, the data analytic approaches of factor analyses, examining internal consistency reliability estimates, and hierarchical setwise multiple regression were applied:

1. Exploratory factor analysis with principal-axis factoring was conducted with the SPSI. Given that a priori decisions regarding factor analysis are recommended and the purpose is to investigate the factor structure of the SPSI with a new sample of school psychologists, the following decisions were applied. First, the method to determine factor retention would rely on parallel analysis supplemented by the scree plot. If the

results were inconsistent, over-extraction of factors was anticipated (Fabrigar et al., 1999). If indications of over-extraction were evident, such as factors with single items or low structure coefficients, the number of factors were reduced and the analysis repeated. As there is little evidence regarding the best rotation, orthogonal rotations were first completed followed by oblique rotations, and comparisons noted. Salient loadings were consistent with the recommendations of Tabachnick and Fidell (2001) in which all factor loadings above .32 were interpreted.

2. Internal consistency reliability estimates for each measure's scores and the factor scores of the SPSI were calculated using Cronbach's (1951) coefficient alpha, which examines the extent to which items in a test are related to one another. It was expected that reliability estimates for each measurement score would meet the minimal criteria of .70 (Nunnally, 1978).

3. Hierarchical multiple regression was applied to examine increments in the proportion of variance in the criterion that could be explained by the addition of new sets of predictor variables to those higher in the hierarchy (Cohen & Cohen, 1983). The unique contribution of each predictor set was determined by the variance accounted for by the given set beyond what has been accounted for by previous sets (Cohen & Cohen, 1983). The proportion of variance of all independent variables is partitioned incrementally (Pedhazur, 1997). Unlike stepwise multiple regressions in which the order of entry of the variables is empirically determined neither by theory nor examiner, hierarchical setwise regression allows for the specification of the order of entry of variables into the analysis (Pedhazur, 1997).

The two subscales of the MBI (Depersonalization and Personal Accomplishment) were individually held as the criterion in three separate hierarchical setwise multiple

regression analyses. The sets of predictor variables were entered as follows: demographics (gender, marital status, years of employment, student: school psychologist ratio, and percentage of time on assessment) were entered as control variables; the personality variable (either Openness to Experience or Conscientiousness), Climate for Innovation, and Stress were entered as the second set; and the third predictor set comprised the three interaction terms (Personality X Stress; Personality X Climate for Innovation; Climate for Innovation X Stress) to account for the proportion of variance due to the moderating effects of the independent variables (Baron & Kenny, 1986). For each component of burnout, the unique contribution of each set of variables was examined as the percent of variance explained as the other sets were statistically controlled, and the contribution of each variable was determined. R^2 was calculated to describe the percentage of proportion of variability in the dependent variable that is accounted for by the variability of the independent variables (Pedhazur, 1997).

Results

Factor Analyses

Appropriateness for Factor Analysis

Prior to conducting factor analysis, the SPSI data scores were examined to determine if factor analysis is appropriate. The examination of the degree to which the data is drawn from the general population is necessary.

Bartlett's test of sphericity. Bartlett's Test of Sphericity (Bartlett, 1954) is one method used for assessing the randomness of the data set. Results from this analysis indicated that the SPSI data scores were not random (Bartlett's $\chi^2 = 2430.01$ $df = 595$ $p < .001$) providing some evidence that the data are appropriate for factor analysis.

Skewness and kurtosis statistic. Skewness and kurtosis statistics were calculated for each item and are presented in Table 5. Skewness values above 2.0 and kurtosis values above 7.0 are indicative of abnormally distributed data (Fabrigar et al., 1999). Results in Table 5 demonstrate that all items were within reasonable skewness and kurtosis limits. An examination of scatterplots further supported the linearity and normal distribution of items. Furthermore, Tabachnick and Fidell (2001) noted that the squared multiple correlation (SMC) for each item be examined for multicollinearity and singularity. A SMC is the correlation all variables with that variable (Gorsuch, 2003). As no SMCs were near 1, multicollinearity was not evident.

Kaiser-Meyer-Okin test. The Kaiser-Meyer-Okin test (KMO; Kaiser, 1974) is used to indicate the degree to which each variable is predicted by, or correlated with, other variables. The KMO statistic ranges from 0.00 to 1.00, with values greater than .80 being considered "good" (Kline, 1994). The KMO for the current sample was .83, which meet Kline's (1994) standards.

Correlation matrix. The visual examination of the correlation matrix was used as evidence to determine the appropriateness of the data for factor analysis (Tabachnick & Fidell, 2001). Correlations above .3 are considered to facilitate the interpretation of constructs (Fabrigar et al., 1999). The correlation matrix is presented in Table 6 and evidences several intercorrelations above .30. As the SPSI is an instrument that addresses a great range of stressors of school psychologists, this may be reflected in the correlational matrix.

Factor Extraction

Principal axis factoring was also conducted with maximum likelihood extraction so as to compare the findings of the primary analysis. A four-factor solution was sufficiently supported by principal axis factoring with various rotated factor patterns, as will be discussed in the following sections. The four-factor solution was also sufficiently supported by the Maximum Likelihood extraction (Bartlett's $\chi^2 = 2430.01$ $df = 595$ $p < .001$).

Factor Retention

Initial communalities were calculated and are presented in Table 7. Variables with low communality (e.g., Screening/assessing bilingual children) were retained in the factor analyses. As evident in Table 7, the first eight factors have eigenvalues over 1 and account for a cumulative percentage of 61.66% of the variance. The scree plot suggested that up to eight factors can be retained. Next, the Monte Carlo PCA for Parallel Analysis (Watkins, 2000) was used to examine random eigenvalues generated across 200 replications. The program randomly generated values for the specified numbers of variables and observations and computed the corresponding eigenvalues. The values were then compared with the eigenvalues obtained from the Canadian sample's factor analysis

Table 5

Skewness and Kurtosis Statistics for School Psychology Stress Inventory Items

Stressor	Skewness	Kurtosis
Keeping up with literature	.30	-.84
Conferences with resistant teachers	-.36	-.47
Supervising intern	.29	-.73
Conducting in-services	.10	-1.05
Carrying test equipment around	.20	-1.11
Pressure to complete a number of assessments	-.72	-.54
Lack of availability of appropriate assessment materials	.33	-1.20
Report writing	-.35	-.58
Lack of consensus in a staffing	.13	-.93
Not enough time to perform job adequately	-.81	-.19
Impending teachers' strike	.79	-.67
Telling parents child has a disability	.06	-1.04
Working with uncooperative principals and other administrators	-.68	-.52
Public speaking engagements	-.07	-1.01
Potential suicide cases	-.84	-.44
Teacher dissatisfaction with recommendations	-.21	-1.02
Spending time driving between schools	.93	.02
Incompetent and/or inflexible supervisors	-.45	-1.35
Feeling caught between child's needs and administration	-.57	-.34
Inadequate secretarial help	.48	-.79
Lack of contact with professional colleagues	.33	-.63

(table continues)

Table 5 (continued)

Skewness and Kurtosis Statistics for School Psychology Stress Inventory Items

Stressor	Skewness	Kurtosis
Conducting parent groups	.65	-.39
Backlog of more than five reports	-.90	.31
Notification of unsatisfactory job performance	-.79	1.08
Threat of legal action	-1.16	-.31
Insufficient recognition of work	.11	-.95
Working in physically dangerous situation	-.27	-1.22
Backlog of more than 10 referrals	-.56	-.60
Lack of appropriate services for children	-.48	-.55
Child abuse cases	-.52	-.64
Being told you “have it easy” by teachers	.47	-.71
Conferences with resistant parents	-.24	-.73
Assessing bilingual children	.53	-.68
Keeping district legal	.28	-.89
Change in schools you serve	.03	-1.02

Note. $N = 149$.

Table 6
Correlation matrix table

	1	2	3	4	5	6	7	8	9	10	11	12	13.	14
1.	--	.04	.04	.11	.13	.21*	.17*	.20*	.08	.25**	.03	.03	-.03	.11
2.		--	.16*	.18*	.02	.10	.03	-.01	.24**	.22**	.18*	.44**	.50**	.21*
3.			--	.32**	.05	.07	.12	.14	.09	.20*	.16	.12	.28**	.16
4.				--	.03	.08	.12	.03	.07	.01	.31**	.30**	.22**	.78**
5.					--	.28**	.31**	.17*	.05	.29**	.07	.16	.22**	.09
6.						--	.30**	.30**	.10	.42**	.24**	.19*	.28**	.23**
7.							--	.20*	.13	.38**	.20*	.08	.13	.13
8.								--	.16*	.43**	.05	.08	-.03	-.08
9.									--	.32**	.15	.09	.29**	.07
10.										--	.25**	.22**	.27**	.09
11.											--	.39**	.43**	.35**
12.												--	.43**	.30**
13.													--	.31**
14.														--

(table continues)

Table 6 (Continued)
Correlation matrix table

	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1.	.11	-.05	.00	.09	-.08	.05	.19*	.20*	.05	.16	-.04	-.04	.06	.02
2.	.21*	.22**	.47**	.11	.20*	.29**	.07	.17*	.30**	.17*	.32**	.33**	.37**	.31**
3.	.16	.10	.27**	.13	.22**	.13	.19*	.05	.18*	.15	.29**	.29**	.09	.28**
4.	.78**	.35**	.39**	.10	.16	.16	.21**	.21**	.58**	.06	.29**	.25**	.14	.33**
5.	.09	.10	.08	.30**	.15	.20*	.35**	.25**	-.01	.21*	.08	.12	.32**	.08
6.	.23**	.19*	.24**	-.01	.31**	.31**	.12	.14	.25**	.44**	.27**	.29**	.32**	.22**
7.	.13	.05	.16*	.10	.24**	.24**	.19*	.32**	.05	.10	.04	.03	.23**	.11
8.	-.08	.07	.02	.05	.09	.16*	.13	.06	-.03	.42**	.05	-.01	.11	.08
9.	.07	.10	.23**	.17*	.33**	.29**	.17*	.15	.10	.14	.06	.05	.37**	.17*
10.	.09	.16*	.18*	.11	.32**	.45**	.27**	.36**	.09	.46**	.16	.16*	.32**	.20*
11.	.35**	.33**	.37**	.13	.46**	.40**	.23**	.15	.39**	.22**	.37**	.38**	.29**	.43**
12.	.30**	.45**	.47**	.15	.26**	.32**	.11	.27**	.38**	.26**	.40**	.34**	.31**	.48**
13.	.31**	.33**	.44**	.12*	.53**	.47**	.25**	.28**	.38**	.18*	.46**	.50**	.43**	.48**
14.	--	.37**	.36**	.09	.24**	.27**	.20*	.30**	.56**	.14	.31**	.30**	.20*	.31**
15.		--	.49**	.16	.34**	.34**	.13	.26**	.48**	.16*	.53**	.47**	.28**	.44**
16.			--	.22**	.45**	.38**	.20*	.22**	.35**	.17*	.60**	.54**	.48**	.55**
17.				--	.13	.14	.10	.21**	.12	.05	.13	.07	.29**	.11
18.					--	.53**	.33**	.26**	.23**	.24**	.48**	.46**	.56**	.43**
19.						--	.23**	.30**	.25**	.32**	.37**	.46**	.44**	.43**
20.							--	.40**	.20*	.15	.17*	.07	.21*	.16*
21.								--	.20*	.23**	.24**	.21**	.29**	.24**
22.									--	.21*	.32**	.32**	.19*	.37**
23.										--	.31**	.28**	.30**	.26**
24.											--	.89**	.46**	.71**
25.												--	.52**	.74**
26.													--	.56**
27.														--

(table continues)

Table 6 (Continued) *Correlation matrix table*

	28	29	30	31	32	33	34	35
1.	.06	.02	-.05	.08	.03	.15	.13	.09
2.	.15	.09	.27**	.32**	.61**	.27**	.26**	.30**
3.	.12	.07	.23**	.26**	.21*	.21**	.24**	.14
4.	.03	.01	.20*	.15	.32**	.24**	.15	.21*
5.	.19*	.28**	.12	.11	.04	.15	.08	.12
6.	.35**	.24**	.24**	.08	.25**	.17*	.26**	.21*
7.	.18*	.31**	.12	.17*	-.01	.21*	.11	.15
8.	.28**	.15	.06	.17*	.03	.14	.11	.14
9.	.10	.20*	.10	.32**	.18*	.15	.24**	.20*
10.	.38**	.38**	.27**	.23**	.23**	.16	.25**	.27**
11.	.14	.15	.28**	.20*	.34**	.35**	.37**	.37**
12.	.20*	.24**	.44**	.23**	.55**	.31**	.25**	.28**
13.	.15	.15	.30**	.39**	.51**	.31**	.38**	.29**
14.	.08	.08	.25**	.15	.31**	.28**	.20*	.16*
15.	.26**	.16	.56**	.36**	.44**	.33**	.25**	.24**
16.	.21*	.08	.46**	.45**	.58**	.40**	.32**	.37**
17.	.16*	.20*	.26**	.31**	.22**	.23**	.05	.29**
18.	.23**	.19*	.30**	.34**	.35**	.24**	.48**	.38**
19.	.28**	.41**	.33**	.26**	.42**	.29**	.27**	.35**
20.	.15	.16	.01	.13	.08	.22**	.27**	.17*
21.	.25**	.23**	.23**	.21*	.22**	.20*	.17*	.25**
22.	.09	.12	.38**	.24**	.48**	.33**	.26**	.22**
23.	.45**	.22**	.21*	.18*	.25**	.27**	.22**	.33**
24.	.25**	.18*	.56**	.33*	.48**	.38**	.38**	.37**
25.	.26**	.18*	.54**	.36**	.51**	.35**	.35**	.34**
26.	.35**	.31**	.44**	.48**	.50**	.27**	.40**	.41**
27.	.26**	.25**	.54**	.41**	.52**	.34**	.36**	.36**
28.	--	.30**	.17*	.20*	.22**	.19*	.25**	.26**
29.		--	.49**	.12	.19*	.25**	.22**	.03
30.			--	.40**	.53**	.31**	.31**	.19*

(table continues)

Table 6 (Continued) *Correlation matrix table*

	31	32	33	34	35
31.	--	.50**	.32**	.23**	.35**
32.		--	.35**	.30**	.38**
33.			--	.41**	.31**
34.				--	.30**
35.					--

- o Note. * $p < .05$, ** $p < .01$. 1. Keeping up with current literature; 2. Conferences or staffings with resistant teachers; 3. Supervising an intern or school psychology graduate student; 4. Conducting in-service workshops; 5. Carrying testing equipment around in unfavourable weather conditions; 6. Pressure to complete a set of number of cases (e.g., you must test at least 100 children a year); 7. Lack of availability of appropriate assessment materials; 9. Report writing; 10. Lack of consensus in a staffing; 11. Not enough time to perform job adequately; 12. Impending teachers' strike in your district; 13. Telling parents their child has a handicap/ disability; 14. Working with uncooperative principals and other administrators; 15. Public speaking engagements; 16. Potential suicide cases; 17. Teacher dissatisfaction with your recommendations; 18. Spending time driving between schools; 19. Incompetent and/or inflexible supervisors; 20. Feeling caught between child's needs and administrative constraints (i.e. trying to 'fit' a child into an existing program); 21. Inadequate secretarial help; 22. Lack of contact with professional colleagues; 23. Conducting parent groups; 24. A backlog of more than 5 reports to be written; 25. Notification of unsatisfactory job performance; 26. Threat of a due process hearing/of legal action; 27. Insufficient recognition of your work; 28. Working in physically dangerous situations (i.e. gang ruled high schools); 29. A backlog of more than 10 referrals; 30. A lack of appropriate services for children; 31. Child abuse cases; 31. Being told that you "have it easy" by classroom teachers; 32. Conferences or staffings with resistant parents; 33. Screening (*Assessing*) bilingual children; 34. Keeping your district "legal"; 35. A change in the schools or districts which you serve

Table 7

Initial Eigenvalues and Percentage of Variance for All Possible Factors

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.98	28.52	28.52	9.560	27.31	27.33
2	2.94	8.36	36.87	2.45	7.00	34.31
3	1.94	5.55	42.43	1.58	4.51	38.82
4	1.59	4.54	46.97	1.12	3.20	42.02
5	1.43	4.10	51.06	.99	2.84	44.85
6	1.37	3.93	54.99	.91	2.60	47.45
7	1.23	3.50	58.49	.76	2.07	49.53
8	1.11	3.17	61.66	.57	1.64	51.16
9	.98	2.81	64.47			
10	.96	2.75	67.22			
11	.93	2.66	69.88			
12	.90	2.57	72.46			
13	.84	2.40	74.86			
14	.78	2.24	77.09			
15	.76	2.17	79.26			
16	.68	1.96	81.21			
17	.64	1.82	83.03			
18	.58	1.65	84.68			
19	.55	1.58	86.27			
20	.55	1.57	87.84			
21	.50	1.43	89.26			
22	.46	1.31	90.57			
23	.44	1.26	91.83			
24	.41	1.18	93.00			
25	.35	1.01	94.01			
26	.31	.89	94.91			
27	.29	.83	95.73			
28	.28	.81	96.55			
29	.24	.67	97.22			
30	.22	.63	97.85			
31	.21	.61	98.46			
32	.18	.52	98.97			
33	.18	.51	99.48			
34	.12	.34	99.82			
35	.06	.18	100.00			

results. The parallel analysis criterion suggests that two factors should be retained as the random eigenvalue exceeded the observed eigenvalue for the third factor.

Consequently, as the results of the scree and the parallel analysis were discrepant, the data were over-extracted as recommended by Fabrigar et al. (1999) and various factor solutions were explored. If indications of over-extraction were evident, such as factors with single items or low structure coefficients, the number of factors was reduced and the analysis repeated and compared.

Rotation of Factor Solutions

Initially, varimax orthogonal rotation was completed as orthogonal rotations are easier to interpret (Nunnally, 1978). As per the recommendation by Fabrigar et al. (1999), the data were initially over-extracted and the factor solutions were examined for indications of over-extraction. The solutions were also examined for theoretical convergence, parsimony, and distribution of loadings.

The eight-, seven-, and five-factor solutions demonstrated signs of overextraction. Fabrigar et al. (1999) noted that when too many factors are extracted, the major factors may be accurately identified but additional factors may emerge with few or no items with salient loadings. This was evident with the eight-, seven-, and five-factor solutions as each solution contained at least one factor comprised of a single salient loading for which that item had another salient loading on another factor in the solution. Themes that were later to be found consistent in the four-factor structure emerged; however, the additional factors in these solutions demonstrated low salient loadings and/or lacked concise theoretical interpretability. Consequently, these solutions were excluded from consideration.

In comparison with the remaining solutions, the six-factor solution demonstrated a lack of theoretical convergence with two factors of the six-factor solution. These factors included a variety of items related to assessment and professional liability. Furthermore, one of the factors of this solution only had two salient loadings. The acceptance of this factor solution would have compromised interpretability and limited reproducibility.

The three-factor solution was examined and not supported. Two of the three factors of the three-factor solution were consistent with the four-factor solution; however, the remaining factor was a hybrid of two factors of the four-factor solution. Specifically, themes that addressed interpersonal strife and threats of liability were combined whereas in the four-factor solution, these factors were separate. Consequently, the theoretical meaningfulness was reduced and the comprehensiveness was compromised for parsimony.

The two-factor solution was supported as one factor accounted for over 50% of the variance and the two-factor solution would have met the criterion established by the parallel analysis. The solution was also supported by quartimax rotations with principal axis factoring and with maximum likelihood extraction that yielded substantially distinct factor solution and loadings. However, the two-factor solution was not selected for several reasons. The retention of two solutions may have run the risk of underextraction of factors (Fabrigar et al., 1999) and the two-factor solution was not replicated with the oblique rotation (Kline, 1994). In comparison with the remaining solutions, the two-factor solution was also not comprehensive or interpretable. One factor clearly addressed issues of assessment and the other factor addressed the multitude of other stressors for school psychologists. The range of interpretability for the latter factor was great as it

included several groups of stressors for school psychologists. Consequently the theoretical meaningfulness was reduced and was not practical.

The four-factor solution was found to be most theoretically consistent, most practical, most interpretable, and the solution that best balanced the need for parsimony with comprehensiveness (Fabrigar et al., 1999). Table 8 presents the factor structure coefficients for the four-factor solution using principal axis factoring with varimax rotation. Consistent with the recommendations of Tabachnick and Fidell (2001), salient loadings were considered to be at .32 or higher. Alternative methods of orthogonal rotation (e.g., equimax, quartimax) and oblique (e.g., promax) solutions were also completed to examine the consistency of the four-factor structure. The solution using principal axis factoring with varimax rotation was found to be reasonably similar to the principal axis factoring with equimax rotation. The comparison with the solution from the principal axis factoring with promax rotation also produced a reasonably consistent pattern coefficients and factor solution. Maximum likelihood extraction was also conducted with various rotations which yielded similar structure coefficients with the varimax and equimax rotations.

Interpretation of Factors

For the selected four-factor solution, the first factor is defined by stressors associated with potential liability and legal issues such as threats to professional status and integrity. The threat of a due process hearing/or legal action (item 25) and the notification of unsatisfactory job performance (item 24) have the highest loadings on this factor. Working in physically dangerous schools (item 27), keeping the district legal (item 34) and child abuse cases (item 30) add support to the interpretation of this factor. The stress surrounding potential suicide cases (item 15) also supports the interpretation of

this factor. The presence of other salient loadings, specifically telling parents their child has a disability (item 12) and assessing bilingual children (item 33) cloud the interpretation of this factor. In addition, the presence of other items, specifically teacher dissatisfaction with recommendation (item 16) and conferences with resistant parents (item 32) further cloud the interpretation of this factor as these items load saliently on other factors. The commonality of these four items however may be any legal repercussions from these events.

The second factor is comprised of stressors associated with assessment. Stress associated with not having enough time to perform job adequately (item 10) demonstrated the highest loading. Additional items that are included on this factor are carrying test equipment around in unfavourable weather conditions (item 5), pressure to complete a set number of cases (item 6), lack of availability of appropriate assessment material (item 7), and report writing (item 8). Stressors regarding backlog of reports (item 23) and of referrals (item 28) are also found. The lack of appropriate services for children (item 29) may also be associated with the assessment as the majority of time for school psychologists is on completing assessments and that an outcome of the assessment process is the eligibility to services. The loading of the variable of inadequate secretarial help (item 20) may also be associated with assessment, specifically since assessments require the processing of documentation for the assessment as well as the special education procedure. The variable regarding the lack of contact with professional colleagues (item 21) is difficult to interpret directly but may be a result of the assessment process (e.g., evaluation, scoring, report writing) and the time spent in this process as being individual. The loading of keeping up with the current literature (item 1) may also be linked with the lack of time due to assessment-related duties.

Table 8

Structure Coefficients for the Four-Factor Solution Using Principal Axis Factoring with Varimax Rotation

Variable	Factor			
	I	II	III	IV
1. Keeping up with literature	-0.14	0.32	0.03	0.17
2. Conferences with resistant teachers	0.34	-0.06	0.50	0.12
3. Supervising intern	0.22	0.10	0.16	0.21
4. Conducting in-services	0.19	0.02	0.59	0.84
5. Carrying test equipment around	-0.02	0.46	0.20	0.04
6. Pressure to complete a number of assessments	0.29	0.56	-0.02	0.10
7. Lack of availability of appropriate materials	-0.05	0.48	0.19	0.13
8. Report writing	0.02	0.54	-0.01	-0.06
9. Lack of consensus in a staffing	0.01	0.19	0.50	-0.00
10. Not enough time to perform job adequately	0.12	0.69	0.25	0.00
11. Impending teachers' strike	0.36	0.18	0.25	0.33
12. Telling parents child has a disability	0.47	0.10	0.26	0.27
13. Working with uncooperative principals/ administrators	0.42	0.09	0.54	0.21
14. Public speaking engagements	0.22	0.07	0.06	0.79
15. Potential suicide cases	0.56	0.08	0.13	0.32
16. Teacher dissatisfaction with recommendations	0.56	0.01	0.43	0.28
17. Spending time driving between schools	0.05	0.12	0.39	0.07
18. Incompetent and/or inflexible supervisors	0.41	0.26	0.46	0.09
19. Feeling caught between child's needs and administration	0.39	0.39	0.35	0.10
20. Inadequate secretarial help	-0.05	0.35	0.28	0.29
21. Lack of contact with professional colleagues	0.10	0.37	0.27	0.27

(table continues)

Table 8 (Continued)

Structure Coefficients for the Four-Factor Solution Using Principal Axis Factoring with Varimax Rotation

Variable	Factor			
	I	II	III	IV
22. Conducting parent groups	0.36	0.02	0.13	0.62
23. Backlog of more than five reports	0.30	0.56	0.02	0.03
24. Notification of unsatisfactory job performance	0.86	0.09	0.01	0.14
25. Threat of legal action	0.88	0.07	0.11	0.08
26. Insufficient recognition of work	0.45	0.29	0.54	-0.03
27. Working in physically dangerous situation	0.73	0.12	0.24	0.17
28. Backlog of more than 10 referrals	0.27	0.49	0.09	-0.04
29. Lack of appropriate services for children	0.23	0.48	0.12	-0.05
30. Child abuse cases	0.67	0.15	0.15	0.10
31. Being told you “have it easy” by teachers	0.33	0.09	0.53	0.05
32. Conferences with resistant parents	0.58	-0.01	0.46	0.22
33. Assessing bilingual children	0.32	0.21	0.27	0.27
34. Keeping district legal	0.34	0.24	0.30	0.14
35. Change in schools you serve	0.29	0.21	0.39	0.12

Note. Salient ($\geq .32$) loadings are in bold.

The third factor is marked by stressors associated with interpersonal strife or having, or the potential of having, conflict with others. Working with uncooperative principals/administrators (item 13) demonstrated the highest loading on the factor and the lack of consensus on a staffing (item 9) demonstrated the highest single loading on the factor. Conferences with resistant teachers (item 2), incompetent and/or inflexible supervisors (item 18), insufficient recognition of your work (item 26), and being told you “have it easy” by teachers (item 31) are also consistent with the theme of interpersonal strife. The items “A change in schools or districts which you serve” (item 35) and the

stressor “Spending time driving between schools” (item 17) on this factor are difficult to interpret.

The fourth factor is clearly marked a stress associated by public speaking. The item with the highest loading on this factor is conducting in-service workshops (item 4). The remaining items include public speaking engagements (item 14) and conducting parent groups (item 22).

Summary

Principal axis factoring with varimax rotations was applied to the data set. As the results of the scree and the parallel analysis were discrepant, the data were over-extracted as recommended by Fabrigar, et al. (1999) and various factor solutions from two through eight-factor solutions were explored. The eight-factor, seven-factor, and five-factor solutions demonstrated signs of over-extraction and were eliminated. A lack of theoretical convergence was evident with the six-factor solution. Reasonably consistent factor structure and loadings are seen with the four-factor solution and confirmed with maximum likelihood factor extraction and with various orthogonal and oblique rotations. The three-factor solution had less meaning as themes that addressed interpersonal strife and threats of liability were combined whereas in the four-factor solution, these factors were separate. Quartimax rotations with principal axis factoring or with maximum likelihood extraction however yielded substantially distinct factor solution and loadings and a two-factor solution was found. However, this solution was not retained as it may have run the risk of underextraction (Fabrigar et al., 1999) and the lack of replication with the oblique rotation (Kline, 1994). The two-factor solution was less interpretable in comparison to the four-factor solution.

A four-factor solution was selected. The first factor is associated with legal issues and the potential and/or actual harm to self and others and is labelled Liability. The second factor represents stressors associated with assessment and will be consequently referred to as Assessment. The third factor is titled Interpersonal Strife, and the fourth factor represents stressors linked with public speaking and is titled Public Speaking.

Reliability Estimates

Utilizing Cronbach's (1951) alpha, the internal consistency reliabilities of the measures were assessed (see Table 9). Using Nunnally's (1978) criterion, the internal consistencies of the SPSI, CIM, and the MBI Personal Accomplishment scale scores fulfilled acceptable standards of reliability with values greater than .70. Coefficient alphas for the MBI Depersonalization and NEO FFI Openness to Experience demonstrated marginally acceptable levels of internal consistency with alphas of .67 and .67. The coefficient alpha of .53 for Conscientiousness is low. However, for this exploratory research, the variable was included. Nunnally's (1978) criterion refers to the internal consistency estimates of individual scores. However, this study is examining decisions based upon multiple regression analyses, and thereby examining group mean scores, which are expected to be more reliable than individual scores (H. Suen, personal communication, September 27, 2007). Nevertheless, interpretations using these tests will be made cautiously.

Utilizing Cronbach's (1951) alpha, the internal consistency reliabilities of the measures were assessed. The internal consistencies of the four factors fulfill acceptable standards of reliability with values greater than .70 according to Nunnally's (1978) criterion. Coefficient alphas ranged from .78 for Assessment to .89 for Liability.

Table 9

Internal Consistency Reliability Estimates for Stress and Burnout Criteria

Measure	Coefficient alpha
School Psychology Stress Inventory	.92
Liability	.89
Assessment	.78
Interpersonal strife	.79
Public speaking	.84
Climate for Innovation	.93
Openness to Experience	.67
Conscientiousness	.53
Depersonalization	.67
Reduced Personal Accomplishment	.78

Interpersonal Strife and Public Speaking demonstrated acceptable levels of internal consistency with alphas of .79 and .84.

Exploratory Multiple Regression

Hierarchical setwise multiple regression was employed to determine the incremental percentage of variance by (a) demographic variables, (b) personality and innovation variables, and (c) their interactions on the individually held criteria of Depersonalization and Personal Accomplishment. Total raw score means and standard deviations are presented in Table 10. Bivariate correlations were computed among all variables and are reported in Table 11. Appendices D and E present the descriptive statistics for the SPSI stressors, as well as the qualitative stressors reported by participants in the study.

Preliminary data review was conducted prior to the application of hierarchical setwise multiple regression. An analysis of the data revealed 24 missing data points for the predictor and the criterion variables. As missing data comprised only 0.6% of the data set and followed no discernable pattern, it was determined that any solution for missing data would be sufficient (Tabachnick & Fidell, 2001). Regression imputation with random error included was completed with SPSS (version 15.0 for Windows) and the data points were examined to ensure that they were within acceptable response ranges. As an added precaution, analyses were also completed with the non-missing cases; no major differences were found in comparison with the regression analyses conducted with the imputed data points.

The data were examined for the presence of three types of outliers, namely influential points, high leverage points, and large residuals (Wilkinson, Blank, & Gruber, 1997). The values of Cook's *D* analyses, measuring influential points, were within acceptable limits. High leverage points did exist but these points did not have a high influence on the analyses. One studentized residual was greater than the standard 3.0 criterion and therefore considered large (Wilkinson et al., 1997). No theoretical explanation for this outlier was found. The removal of this outlier did not increase the overall significance of the models presented in the regression nor did the removal alter the slope parameter or the intercept value significantly. Consequently, the outlier remained in the analyses. The examination of box plots and graphs plotting the dependent variable against the predictor variables (Pedhazur, 1982) yielded outliers and extreme residuals consistent with the prior findings.

Fulfillment of the assumptions for multiple regression, namely collinearity, linearity, independence, equal variance, and normality was also examined. No concerns

of multicollinearity existed among the independent variables as tolerance values for independent variables were within acceptable limits. Pearson product-moment correlations permitted examination of pairwise correlations to detect collinearity (Wilkinson et al., 1997) and multicollinearity was not found upon this examination.

Examination of the scatterplots for residuals versus predicted values (Wilkinson et al., 1997) revealed linear relationships so the assumption of linearity was upheld. The examination of these scatterplots also indicated that the data did not violate this assumption of independence. In addition, the Durbin-Watson statistic was within acceptable limits of 1.4 to 2.6 (Wilkinson et al., 1997).

Inspection of the scatterplots of the residuals versus predicted values presented evidence that the variance was constant and homoscedastic (Pedhazur, 1997). However, the results for research questions 4 and 5 indicated a clear negative slope on the lower portion of the scatter in the plot of residuals versus predicted values. However, this did not indicate non-constant variance as it was only exhibited in the lower portion of the scatter which may have indicated the incompleteness of the model and suggested that other variables may have explained the relationship between the experience and stressors and the burnout criterion of depersonalization. The examination of the fulfillment of the assumptions of normality was completed through the analysis of the graphic box plots, means, standard deviations, skew, and kurtosis of the score distribution (Wilkinson et al., 1997). The Normal Probability Plot of the regression standardized residuals and a histogram of the residuals were also completed. Q-Q plots and scattergrams of the residuals against the predictors allowed for the further examination of the assumption of normality (Wilkinson et al., 1997). When Personal Accomplishment was held

Table 10

Means and Standard Deviations for Predictor and Criterion Variables

Variable	Raw Scores		Standard Scores	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Stress	177.07	41.22	50.00	10.00
Climate for Innovation	50.66	12.38	49.99	10.00
Openness to Experience	31.09	5.40	56.91	9.04
Conscientiousness	35.75	5.90	51.74	10.15
Depersonalization	3.79	3.68	50.00	10.01
Personal				
Accomplishment	37.99	5.91	49.99	10.00
Years as a School				
Psychologist	11.41	8.10	--	--
School Psychologist:				
Student Ratio	4.18	1.66	--	--
Percentage of Time Spent				
on Assessment	53.61	23.60		

as the criterion (specifically, research questions 6 and 7), the assumption of normality was satisfied by the acceptable random scatter of the residual plots, the histograms were normally distributed, and the Q-Q plots had an empirical curve close to the 45 degree line. The results when Depersonalization was held as the criterion (research questions 4 and 5) demonstrated some evidence for departure from normality. Although the scatterplot of the residuals against the predictors demonstrated a random scatter around zero, a negative slope pattern of the residuals

Table 11

Intercorrelations of Predictor and Criterion Variables

Measure	1	2	3	4	5	6	7	8
1. Depersonalization	--							
2. Personal Accomplishment	-.13	--						
3. Openness to Experience	-.01	.16	--					
4. Climate for Innovation	-.25*	.20**	.02	--				
5. Stress	.25*	-.26*	.06	-.25*	--			
6. Conscientiousness	-.09	.05	-.15	-.13	.10	--		
7. Years as a School Psychologist	.08	-.05	.05	.14	-.01	.13	-.07	
8. Percentage of Time on Assessments	-.23	-.11	-.15	-.18*	.04	-.10	.09	-.10

* $p < .05$ level. ** $p < .01$.

existed. The negative slope pattern was not attributed to the lack of normality or the lack of constant variance and was more likely a reflection of the incompleteness of the model or omitted variable bias (Wilkinson et al.). The histogram of the residuals was approximately normally distributed, although slightly skewed and the Q–Q plot indicated a slight S–curve.

Where violations were indicated, remedies in accordance to the procedures outlined by Wilkinson et al. (1997) were attempted; however, the log, square root, and inverse transformations were not successful and the violations in normality and constant

variance remained. As the departure from normality was not severe and since linear regression is robust to moderate departures of normality (Pedhazur, 1982), the *T* scores of the Depersonalization variable were utilized.

Depersonalization

As previously noted, two separate series of hierarchical setwise regression analyses were conducted for the prediction of Depersonalization as measured by the MBI to address research questions 4 and 5. Predictors were entered set-wise with the control variables (Demographics), main variables (Personality, Climate for Innovation, and Stress), the two-way interaction variables (e.g., Stress X Personality) each comprising a separate predictor set.

Table 12 presents results of various setwise regression analyses (refer to Appendix G-J for tables of supplemental results of regression analyses). The demographic variables of marital status, gender, years on the job, psychologist: student ratio, and percentage of time spent on assessment explained 9% of the variance of Depersonalization ($p < .05$). The main effects of Openness to Experience, Climate for Innovation, and Stress explained 20% of the variance in Depersonalization over and above the effects of the demographics ($p < .01$). The addition of the two-way interaction and the overall three-way interaction variable explained 21% of the variance ($p < .01$) but the incremental increase to the proportion of variance was not statistically significant.

The demographic variables of marital status, gender, years on the job, psychologist: student ratio, and percentage of time spent on assessment explained 9% of the variance of Depersonalization ($p < .05$). The main effects of Conscientiousness, Climate for Innovation, and Stress explained 21% of the variance in Depersonalization (p

< .01). The addition of the two-way interaction explained a total of 22% of the variance ($p < .01$). The incremental increase of the proportion of variance was only statistically significance ($p < .01$) when the main effects were entered in set 2. The effects of Percentage of Time Spent Completing Assessment and Climate for Innovation were both statistically significant in predicting the Depersonalization ($p < .01$) regardless of the personality variable in the model. The effect of Stress was statistically significant in predicting the Depersonalization ($p < .05$) when the personality variable Openness to Experience was included in the model. The various interactions were not statistical significance indicating a lack of a moderating effect among the predictor variables.

Findings for research questions 4 and 5 were not as expected. The predictability of the criterion of Depersonalization was not enhanced by including the interaction of the variables of Stress, Climate for Innovation, and a personality variable over and above a model that already includes demographics and three main effects. The main effects of percentage of Time Spent on Assessments and Climate for Innovation were both statistically significant in predicting the Depersonalization component of burnout regardless of the main effect of personality in the model.

Table 12

Hierarchical Regression Analyses Predicting Burnout Criteria of Depersonalization and Personal Accomplishment with Personality Variables

Hierarchical Set	Criterion	Total R^2	Incremental R^2
	Depersonalization		
1. DEMOGRAPHIC VARIABLES		0.09*	0.09*
2. NEO FFI: OE; CIM; SPSI		0.20**	0.11**
3. NEO FFI: OE X CIM, CIM X SPSI; NEO FFI: OE X SPSI		0.21	0.01
1. DEMOGRAPHIC VARIABLES		0.09*	0.09*
2. NEO FFI: C; CIM; SPSI		0.21**	0.12**
3. NEO FFI: C X CIM, CIM X SPSI; NEO FFI: C X SPSI		0.22**	0.01

(table continues)

Hierarchical Step	Criterion	Total R^2	Incremental R^2
Personal Accomplishment			
1. DEMOGRAPHIC VARIABLES		0.08*	0.08*
2. NEO FFI: OE; CIM; SPSI		0.15**	0.07*
3. NEO FFI: OE X CIM, CIM X SPSI; NEO FFI: OE X SPSI		0.17**	0.03
1. DEMOGRAPHIC VARIABLES		0.08*	0.08*
2. NEO FFI: C; CIM; SPSI		0.13*	0.05*
3. NEO FFI: C X CIM, CIM X SPSI; NEO FFI: C X SPSI		0.15*	0.02

Note. $N = 149$. Row entries for each burnout criterion equals R^2 as derived from regression models applying the respective burnout measures as a dependent variable and Stress, Personality, and Climate for Innovation variables as independent sets. Total R^2 refers to the proportion of variation that is explained by the model in the set whereas incremental R^2 refers to the change in the proportion of variance between sets. Demographic variables include marital status, gender, years as a school psychologist, school psychologist: student ratio, and percentage of time spent on assessments; NEO FFI; OE = NEO Five Factor Inventory Openness to Experience; NEO FFI; C = NEO Five Factor Inventory Conscientiousness; CIM = Climate for Innovation Measure; SPSI = School Psychology Stress Inventory; * $p < .05$. ** $p < .01$.

Personal Accomplishment

Two separate hierarchical setwise regression analyses were conducted for the criteria of Personal Accomplishment as measured by the MBI to address research questions 6 and 7. Again, predictors were entered set-wise into the regression equations (see Table 12).

With respect to research questions 6, the demographic variables of marital status, gender, years on the job, psychologist: student ratio, and percentage of time spent on assessment explained 8% of the variance of Depersonalization ($p < .05$). The main effects of Openness to Experience, Climate for Innovation, and Stress explained 15% of the variance in Personal Accomplishment ($p < .01$) and the incremental increase in the proportion of variance accounted for was statistically significant ($p < .05$). The addition of the two-way interaction explained 17% of the variance; however, there was no statistical significance in the incremental increase to the proportion of variance. The effect of gender, Openness to Experience, and Stress were found to be statistically significant ($p < .05$).

With respect to research question 7, the demographic variables of marital status, gender, years on the job, psychologist: student ratio, and percentage of time spent on assessment explained 9% of the variance in Personal Accomplishment. The main effects of Conscientiousness, Climate for Innovation, and Stress explained 21% of the variance in Personal Accomplishment. The addition of the two-way interactions explained 22% of the variance but the incremental increase to the proportion of variance was not statistically significant. Gender was the only variable that was statistically significant ($p < .01$).

Findings from research questions 6 and 7 were not as expected. The prediction of the dependent variable of Personal Accomplishment was not enhanced by including the interaction of the variables of Stress, Climate for Innovation, and a personality variable

over and above a model that already included three main effects. The main effects of Stress and Openness to Experience were both statistically significant in predicting Personal Accomplishment. The demographic variable of gender was statistically significant in predicting Personal Accomplishment when Conscientiousness was the personality variable.

Supplemental Analyses

Supplemental analyses explored the proportion of variance that each factor of the four-factor solution of the SPSI would contribute to the prediction of burnout criterions. The following four SPSI factors of Liability, Assessment, Interpersonal Strife, and Public Speaking were standardized into *T* scores and replaced the total Stress variable in the hierarchical setwise multiple regression equations run previously. Predictors were entered set-wise with the control variables (Demographics), main variables (Personality, Climate for Innovation, and Stress Factors), the two-way interaction variables (e.g., each stress factor X Personality) each comprising a separate predictor set.

Table 13 presents results of the supplementary setwise regression analyses. When Openness to Experience was the personality variable, the demographic variables of marital status, gender, years on the job, psychologist: student ratio, and percentage of time spent on assessment explained 8.9% of the variance of Depersonalization ($p < .05$). The main effects of factors, Openness to Experience, Climate for Innovation explained 22.9% of the variance in Depersonalization over and above the effects of the

Table 13

Hierarchical Regression Analyses Predicting Burnout Criteria of Depersonalization and Personal Accomplishment with Factor Solution

Hierarchical Set	Criterion	Total R^2	Incremental R^2
	Depersonalization		
1. DEMOGRAPHIC VARIABLES		8.9**	8.9*
2. NEO FFI: OE; CIM; F1; F2; F3; F4		22.9*	14.0*
3. NEO FFI: OE X CIM, CIM X F1; CIM X F2; CIM X F3; CIM X F4; NEO FFI: OE X FI; NEO FFI: OE X F2; NEO FFI: OE X F3; NEO FFI: OE X F4		28.9*	6.0
1. DEMOGRAPHIC VARIABLES		8.9*	8.9*
2. NEO FFI: C; CIM; F1; F2; F3; F4		23.5**	14.6**
3. NEO FFI: C X CIM, CIM X F1; CIM X F2; CIM X F3; CIM X F4; NEO FFI: C X FI; NEO FFI: C X F2; NEO FFI: C X F3; NEO FFI: C X F4		25.4**	1.9

(table continues)

Table 13 (continued)

Hierarchical Step	Criterion	Total R^2	Incremental R^2
	Personal Accomplishment		
1. DEMOGRAPHIC VARIABLES		7.6*	7.6*
2. NEO FFI: OE; CIM; F1; F2; F3; F4		16.8**	9.2*
3. NEO FFI: OE X CIM, CIM X F1; CIM X F2; CIM X F3; CIM X F4; NEO FFI: OE X F1; NEO FFI: OE X F2; NEO FFI: OE X F3; NEO FFI: OE X F4		25.4**	8.6
1. DEMOGRAPHIC VARIABLES		7.6*	7.6*
2. NEO FFI: C; CIM; F1; F2; F3; F4		15.9*	8.3*
3. NEO FFI: C X CIM, CIM X F1; CIM X F2; CIM X F3; CIM X F4; NEO FFI: C X F1; NEO FFI: C X F2; NEO FFI: C X F3; NEO FFI: C X F4		22.2*	6.3*

Note. $N = 149$. Row entries for each burnout criterion equals R^2 as derived from regression models applying the respective burnout measures as a dependent variable and Stress, Personality, and Climate for Innovation variables as independent sets. Total R^2 refers to the proportion of variation that is explained by the model in the set whereas incremental R^2 refers to the change in the proportion of variance between sets. Demographic variables include marital status, gender, years as a school psychologist, school psychologist: student ratio, and percentage of time spent on assessments; NEO FFI: OE = NEO Five Factor Inventory Openness to Experience; NEO FFI: C = NEO Five Factor Inventory Conscientiousness; CIM = Climate for Innovation Measure; F1 = Liability; F2 = Assessment; F3 = Interpersonal Strife; F4 = Public Speaking; * $p < .05$, ** $p < .01$.

demographics ($p < .01$). The addition of the two-way interaction explained 28.9% of the variance ($p < .01$).

The demographic variables of marital status, gender, years on the job, psychologist: student ratio, and percentage of time spent on assessment explained 8.9% of the variance of Depersonalization ($p < .05$). The main effects of Conscientiousness, Climate for Innovation, and the factors explained 23.5% of the variance in Depersonalization ($p < .01$). The addition of the two-way interaction explained a total of 25.4% of the variance ($p < .01$). The incremental increase of the proportion of variance was only statistically significance ($p < .01$) when the main effects were entered in set 2.

The effects of Percentage of Time Spent Completing Assessment, Climate for Innovation, and Interpersonal Strife were statistically significant in predicting the Depersonalization ($p < .05$) regardless of the personality variable in the model. There was a statistically significant interaction between Interpersonal Stress and Openness to Experience suggesting a moderating effect among the predictor variables.

The demographic variables of marital status, gender, years on the job, psychologist: student ratio, and percentage of time spent on assessment explained 7.6% of the variance of Personal Accomplishment ($p < .05$). The main effects of factors, Openness to Experience, Climate for Innovation explained 16.8% of the variance in Personal Accomplishment over and above the effects of the demographics ($p < .01$). The addition of the two-way interaction explained 25.4% of the variance ($p < .01$).

The demographic variables of marital status, gender, years on the job, psychologist: student ratio, and percentage of time spent on assessment explained 7.6% of the variance of Personal Accomplishment ($p < .05$). The main effects of Conscientiousness, Climate for Innovation, and the four stress factors explained 15.9% of the variance in Personal

Accomplishment ($p < .05$). The addition of the two-way interaction explained a total of 22.2% of the variance ($p < .05$). The incremental increase of the proportion of variance was only statistically significant ($p < .05$) when the main effects were entered in set 2.

The effects of gender and Liability were statistically significant in predicting the Personal Accomplishment ($p < .05$) regardless of the personality variable in the model. When Openness to Experience was the personality variable, a significant interaction is found between Liability and Climate for Innovation as well as between Openness to Experience and Climate for Innovation ($p < .01$). The inclusion of these variables was completed as an exploratory analysis and future research is needed.

Discussion

The experience of stress and of burnout has been examined among school psychologists both in the United States (Hueberty & Huebner, 1988; Huebner, 1992, 1993a, 1993b; Reiner & Hartshorne, 1982; Wise, 1985) and international settings (Burden, 1988). The present study is the first study to examine the factor structure of the SPSI with a sample of Canadian school psychologists. In addition, the literature to date has provided useful information for the profession; however, a conceptual framework integrating these variables has been lacking. By applying Beehr's (1994) model of stress, this study inquired into the relationship between stressors and components of burnout based upon a theoretical foundation. Furthermore, potential moderating variables that may influence the relationship between stressors and burnout were explored.

The present study is the first to investigate the role of support for innovation in the field of school psychology utilizing the Climate for Innovation Measure (Scott & Bruce, 1994). Resonating with arguments for the need for school psychologists to engage in innovative practice proposed by Dwyer (2001), Sheridan and Gutkin (2000), and Ysseldyke et al. (1997), innovation encourages the evolution of school psychology practice at both the individual clinician/practitioner level as well as for the entire profession. Furthermore, as this is the first study to examine stress and stressors using a sample of Canadian school psychologists, implications for school psychologists and the field of school psychology are made. Limitations of this study are also discussed in order to guide future research in this field.

School Psychology Stress Inventory Measure

The examination of stress in the field of school psychology was initiated with the development of the School Psychology and Stress Inventory (Wise, 1985). The examination of stress among samples of school psychologists from the United States (Hueberty & Huebner, 1988; Huebner, 1992, 1993a, 1993b; Reiner & Hartshorne, 1982; Wise, 1985), the United Kingdom (Burden, 1988); Australia (Burden, 1988), and Norway (Ostlyngen, Storjord, Stellander, & Mar, 2003) have been conducted. The present study examined the factor solution structure for the SPSI with a sample of Canadian school psychologists.

The present study identified a four-factor solution using principal axis factoring with varimax rotation. Previous factor solutions found for the SPSI using American samples included a nine-factor solution (Wise, 1985) and an eight-factor solution (Huebner & Mills, 1997); however, as noted previously, factor retention in these studies employed the Kaiser-Gutman rule which is known for factor over-extraction. The current study employed scree and the parallel analysis to determine the number of factors to retain. Because the results were discrepant, the data were over-extracted as recommended by Fabrigar, et al. (1999) and various factor solutions from two through eight-factor solutions were explored. The four-factor solution was found to be most consistent theoretically, most practical, most interpretable, and the solution that best balanced the need for parsimony with comprehensiveness (Fabrigar et al., 1999).

Themes were found with the present four-factor solution as it was compared with previous research. The Liability factor is associated with potential and/or actual harm to self and others, and is similar to the factor labelled High Risk to Self and Others by Wise (1985), as well as to the two factors, High Risk to Self and High Risk to Others by Huebner

and Mills (1997). Assessment represents stressors associated with conducting evaluations and is unique from the factor reported by Wise (1985) and Huebner and Mills (1997). Interpersonal Strife is consistent with the factor Interpersonal Conflict, as labelled in both previous studies. However, the loadings in this analysis only addressed strife with colleagues as strife with parents were loaded on the potential harm factor. The fourth factor, Public Speaking is consistent with the factor Public Speaking found in the two aforementioned studies.

The SPSI is a measure that examines the stressors unique to the field of school psychology. The consistency of themes of the obtained SPSI factors with previous research adds to the credibility of the instrument, particularly with the Canadian sample. Nevertheless, future research is needed to assess the factor solution using best practice approach. The present study examined the stressors with Canadian school psychologists. The role of job satisfaction, although a different construct in the literature, may also be of interest in future research studies. School psychologists derived satisfaction from staying busy, working independently, being in service to others, and their relationship with coworkers (Van Voorhis & Levinson, 2006). The role of these variables in relation with stress may be of research interest.

Beehr's Model

Beehr's (1994) model of stress provides a theoretical structure delineating the relationship between the experience of stressors and of burnout. The model stipulates that stressors lead to strain, and that environmental and personality variables moderate the relationship between stressors and the experience of strain. In a series of hierarchical setwise multiple regression analyses, the effect of experiencing stressors was examined related to depersonalization and personal accomplishment. Two moderators of this

relationship were examined: a personality moderator, either openness to experience or conscientiousness, and an environmental moderator, specifically climate for innovation, as well as their interactions.

Findings for research questions 4 and 5 were not as expected: Prediction of the criterion of depersonalization was not enhanced by including the interaction of the variables of stress, climate for innovation, and a personality variable over and above a model that already included three main effects and three two-way interactions. The main effects of stress, percentage of time spent on assessments, and climate for innovation were both statistically significant in predicting the depersonalization component of burnout regardless of the main effect of personality in the model. The interaction terms were not statistically significant and the addition of interaction terms did not increase the contribution to the proportion of variance as hypothesized.

Similarly, the interaction of conscientiousness and innovative behaviors failed to contribute to the prediction of depersonalization. With regard to creativity, conscientiousness may seem antithetical to the openness of someone who is creative, however, successful projects require diligent work habits (King et al., 1996) as well as perseverance and discipline (Colquitt & Simmering, 1998; Feist, 1998). As the ability to innovate requires the ability to successfully implement these ideas (Kanter, 1988), it was hypothesized that conscientiousness may have had a greater role in the models. However, statistical significance for conscientiousness as a moderator in the prediction of depersonalization and personal accomplishment was not found.

The models predicting the criterion of depersonalization explained, at maximum, 22% of the variance. Notwithstanding this amount, an omitted variable bias is still suspected given the lower slope seen in the scatterplot of the residuals. Omitted variable

bias refers to alternative explanatory variables were not included in the model (Wilkinson et al., 1997). This slope was not remedied by the addition of any of the demographic variables or the duties of the school psychologist, which further strengthens the argument of a missing component of the model.

The prediction of the burnout criterion of reduced personal accomplishment was assessed through research questions 6 and 7. Findings from research questions 6 and 7 were not as expected as the prediction of the criterion of personal accomplishment was not enhanced by the inclusion of the interaction of the variables of stress, climate for innovation, and a personality variable over and above a model that already includes three main effects and three two-way interactions. The main effect for gender obtained statistical significance regardless of the personality variable but the main effects of Openness to Experience and Stress only obtained statistical significance when Openness to Experience was included as the personality variable.

The supplemental analyses conducted with the factor scores, as identified by the four-factor solution using principal axis factoring with varimax rotation with the SPSI, presented findings of interest. The models predicting the criterion of depersonalization explained, at maximum, 28.9% of the proportion of variance. The presence of the negative slope of the scatterplot of the residuals indicated an omitted variable in the regression models. Nevertheless, as in the previously completed regression analyses, percentage of time spent on assessments and Climate for Innovation continued to demonstrate statistically significant regardless of the personality variable. Interpersonal Strife was also statistically significant in the prediction of Depersonalization and a significant interaction was found with Interpersonal Strife and Openness to Experience. The role of Interpersonal Strife in the prediction of Depersonalization is logically consistent. Both the quantitative and

qualitative aspects of conflict-based interactions have been addressed in the literature in the form of frequency in interactions, nature of the contact, and difficulties of the client (Cordes & Dougherty, 1993). Stressors associated with conflict, or anticipated conflict, with others would be associated with Depersonalization in which one no longer seeing clients as individuals but objectifies them in order to detach. In other studies, the lack of positive feedback and gratitude from patients was associated with higher levels of depersonalization in nurses (Van Yperen, Buunk, & Schaufeli, 1992). Maslach (1982) added that further compounding to this stress is the burden that the well-being of the client is the responsibility of the service provider.

At most, the models predicting personal accomplishment explained 25% of the variance. Nevertheless, as in the previously completed regression analyses, gender continued to demonstrate statistical significance regardless of the personality variable. Although gender has been examined in the literature, the understanding of the role of gender in burnout is mixed although a relationship does seem to exist (Cordes & Dougherty, 1993).

Alternate Models and Variables

Beehr's (1994) model of stress provides a theoretical structure for the understanding of stressors and burnout. The advantages of the application of this model in this study are numerous. First, a theoretical structure hypothesizing the relationship between the experience of stressors and of strain exists. Second, the variables of personality and environment are interactive. Third, the model can incorporate the variety of stressors of school psychologists. However, despite the advantages, the research questions of this study that were based upon Beehr's (1994) model are not consistently supported. Beehr (1994) acknowledged that the difficulty with understanding stress and strain is the equivalent of a

black box phenomenon such that one can study it from the outside but it is difficult to see inside.

The lack of support for the outcomes expected for the research questions may be a result of the theoretical model chosen for the study. Several alternative models of organizational stress examine to various degrees the interaction between one's individual disposition and the conditions of the work environment. However, limited empirical support directly compares these models. For instance, one alternate theory that could be applied to this study is the person-environmental fit theory in which stress increases as the fit between the individual and the environment decreases (Harrison, 1978). This model has been partially confirmed in the literature although the operationalization of the constructs has been criticized (Beehr, 1994; Edwards, 1996). Another model that may be potentially be applicable is the job demand-job control model that purports that there are two aspects of employment (e.g., job demands on the employee, and job decision latitude given to the employee) that impact perceived stress (Karasek, 1979). Employment that is considered to have high demands and low decision latitude is considered to be highly stressful. Empirical support for this model is present but only for the main effects of demands, decisions, and strains; mixed support is evident for the various interactions of these variables (Van der Doef & Maes, 1999).

The selection of the personality variables of conscientiousness and openness to experience contribute to the results obtained. A clear understanding of the relationship between personality constructs and burnout is lacking mainly due to the failure of previous research to apply personality theory (Bakker, Van der Zee, Lewig, & Dollard, 2006). The constructs of conscientiousness and openness to experience were chosen for this model primarily for their association with creativity (Feist, 1998). However, the literature has

limited support for conscientiousness with aspects of burnout because researchers have not found a preponderance of evidence. Statistically significant correlations were found between conscientiousness and personal accomplishment (Piedmont, 1993; Wylie, 2003) but not with depersonalization. With regard to openness to experience, Bakker et al. (2006) reported a significant contribution toward the prediction of depersonalization when openness to experience was included in a predictor variable set with neuroticism and extraversion (17% of the variance in depersonalization was explained). Zellars et al. (2000) reported a statistically significant the prediction of openness to experience and depersonalization, whereas Piedmont (1993) reported that openness to experience was unrelated to any burnout criterion. Given the limited empirical support of conscientiousness and of openness to experience with depersonalization and personal accomplishment, their impact may be expected to be limited despite valid theoretical arguments for their inclusion in the study.

Variable selection for, and omission from, the research questions may help explain why the research questions of this study are not consistently supported. For example, omission of variables known to predict burnout such as neuroticism and extraversion (Bakker et al., 2006; Lee & Ashforth, 1996) may help explain the presence of a negative slope of the scatterplot in which depersonalization was held as the criterion, as this negative slope indicates the possibility of an omitted variable bias (Wilkinson et al., 1997). Similarly, other variables known to predict burnout, such as role overload, role conflict, and role ambiguity (Bakker et al., 2006; Lee & Ashforth, 1996; Cordes & Dougherty, 1993) were not included in this study. Other variables of interest could include surface-level emotional labor and the demand to display positive emotion in the prediction of

depersonalization and personal accomplishment, respectively (Brotheridge & Grandey, 2002).

Climate for Innovation Measure

The ability to innovate encompasses the willingness and the foresight to go beyond the traditional and prescribed boundaries of one's role in school psychology. Innovation is defined as the implementation of creative ideas (Kanter, 1988). An innovative climate refers to the "degree to which organization members perceived an organizational climate as supportive of innovation that would ultimately affect an individual's innovative behavior" (Scott & Bruce, 1994, p. 592). The present study is an initial step in examining of the role of innovation in the field of school psychology by establishing preliminary evidence of the psychometric properties of CIM scores.

Research has illustrated that the role of the school psychologist is often dependent upon the discretion of the policies and procedures and/or of the discretion of the school district administration (e.g., Jerrell, 1984; Levinson, 1990). Often, this role has been defined as an assessor (Ysseldyke et al., 1997). Movement beyond this role incorporates innovation as the school psychologist uses knowledge and skills to establish broader realms of practice. The functional competencies, as identified by *School Psychology: A Blueprint for Training and Practice III*, consist of the following domains: Data-Based Decision Making, Systems-Based Service Delivery, Enhancing the Development of Cognitive and Academic Skills, and Enhancing the Development of Wellness (Ysseldyke et al., 2006). The application of the four functional competencies into the various systems of service delivery requires innovation (Ysseldyke et al., 2006). However, in the application of these competencies, the degree to which the target environment is supportive of innovation must be considered.

The CIM is a tool that can measure the climate for innovation in a school district but it has not previously been used with school psychologists. The high internal consistency estimates for the CIM, as well as its suggested predictive capabilities related to the burnout criteria of depersonalization, suggest its applicability to other areas of research with school psychologists. Furthermore, the CIM provides a potentially useful tool to assess the construct of innovation in school psychology. However, additional evidence for the validity of CIM scores is needed.

Implications

Implications for School Psychologists

This study holds implications for school psychologists, specifically concerning stressors. One implication for school psychologists is that top stressors appear to differ among international studies, and this may reflect sample attributes as well as differences related to regional training and practice. This study is the first to utilize the SPSI with Canadian school psychologists. As detailed in Appendix D, Canadian participants reported that the most stressful experiences were threat of legal action, not enough time to perform job adequately, and lack of appropriate services. These findings do not readily mirror those from the Huebner and Mills' (1997) study in which organizational issues and everyday hassles were rated as most stressful, nor align with Wise's (1985) study which revealed that notification of poor performance and high profile cases (i.e., suicide, child abuse) induced the most stress. Burden (1988) found that British and Australian school psychologists ranked the notification of unsatisfactory job performance, threat of legal action, and incompetent supervisors as more stressful than did participants from an American sample.

As this study is the first to utilize the SPSI with Canadian school psychologists, additional research is needed to further examine the top stressors identified. The need for

support of school psychologists in Canada is evident. In a recent survey of teaching and health professionals in the province of Quebec, high psychological stress and burnout at work was reported by 39% of participants which has serious financial repercussions and practical implications for the government (Centrale des syndicats du Québec, 2004).

Further, the attrition of school psychologists in the province of Quebec is becoming evident and may warrant a preliminary exploratory discussion to investigate the situation by the professional licensing body of psychologists in Quebec (S. Beaulieu, personal communication, May 21, 2007).

Implications for the Field of School Psychology

For the field of school psychology, this study holds several insights specifically regarding the importance of the role of innovation, the degree of to which support for innovation in a school district may be linked to retention of employees in a district, and the advancement of the field of school psychology in Canada. The first implication for the field of school psychology is the importance of the role of innovation in the application of the four functional competencies as identified by *School Psychology: A Blueprint for Training and Practice III*, into the various systems of service delivery (Ysseldyke et al., 2006). The importance of the role of innovation is its potential influence on the application of these competencies in professional practice, as well as the acceptance of these expanded skill applications by school districts.

The skills sets encompassed by the competencies delineated by Ysseldyke et al. (2006) require the “ability to use problem-solving and scientific methodology to create, evaluate, and apply appropriate empirically validated interventions at both an individual and systems level” (p. 14). This can be extended to include Kanter’s (1988) description of the multi-stage process of innovation, specifically recognizing problems, generating

solutions, obtaining support for the solution, and creating the solution that can be shared with others and used productively. Therefore, the influence of innovation may be beneficial to skill sets and practices of school psychologists.

The development and application of school psychologists' functional competencies will depend in part upon the climate for innovation within the school district. School psychologists need to understand the climate for innovation. Provincial legal guidelines, district policies and procedures, and/or discretion of the school district administration often interact to determine the role of the school psychologist (Jerrell, 1984; Levinson, 1990), and often the expectation is that school psychologists will primarily serve as an assessor (Ysseldyke et al., 1997). However, it is possible that a greater understanding of the impact of the work environment (e.g., the climate for innovation) could guide the application of interventions in such districts. For example, the development and the implementation of an early literacy screening program may not occur without administrative support, and the school psychologist may need to wait for changes in the system or work climate before such a program can be implemented.

The second implication for the field of school psychology is the degree to which assessment is linked to the depersonalization criterion of burnout. The completion of school psychological service duties, specifically the percentage of time spent on assessments, appears to explain as much as 14% of the proportion of variance in the criteria of depersonalization when included with other main effects in the examined regression models. The contribution of the percentage of time spent on assessments in the prediction of depersonalization is suggested given its statistical significance. However, these findings are only exploratory and need to be further researched.

School psychologists may prefer to concentrate more on direct intervention, consultation, and research as opposed to psycho-educational assessments (Reschly, 2000) and the emphasis on eligibility assessments have been theoretically linked with attrition from the field (Ysseldyke et al., 2006). Furthermore, prior correlational evidence linked proportion of time in assessment with the greater effects on burnout (Hueberty & Huebner, 1988; Huebner, 1993b). The inclusion of the duties of assessment explain a greater proportion of variance than the variables examined in this study. Future research in this area is also merited.

The third implication for the field of school psychology is the degree to which innovation support and autonomy within a school district may be linked to the retention of school psychologists as district employees. Discrepancies between school psychologists' desired roles and their actual roles exist, and possible links have been made to the attrition and mobility rates of school psychologists (Ysseldyke et al., 2006). This study also suggests that the climate for innovation can contribute to the prediction of the burnout criteria of depersonalization. A relationship between burnout and career stages has been proposed (Cordes & Dougherty, 2003). As school psychologists' professional growth from graduate student to competent professional evolves (Rodolfa et al., 2005) and practitioners develop deeper competency in various skill domains (Ysseldyke et al., 2006), the lack of a supportive climate for innovation in a school district may be a factor both in recruiting new school psychologists and maintaining their current staff, as well as a factor in an employee's choice of employer.

The fourth implication of this study is that the profession of school psychology in Canada still remains under development. The Canadian Association of School Psychologists does not include all school psychologists in Canada, and provincial school

psychology associations do not consistently exist across the country. Consequently, national research is difficult due to a lack of a national registry of school psychologists. Furthermore, as demonstrated by the 32% response rate, considered to be a reasonable rate of return for a mail survey, the study of stressors, burnout, and the status of school psychology in Canada is important to its professionals. Although 7 out of 90 Canadian universities offer school psychology programs, and only 2 of these school psychology programs hold APA accreditation (Oakland et al., 2005)

Limitations of the Study

One limitation and threat to external validity is the extent to which results from this sample can generalize to the population of Canadian school psychologists (Gall, Borg, & Gall, 1996). The original intent of the study was to obtain a random sample of participants in from larger pool of Canadian school psychologists; however, the relatively small number of school psychologists, the slow rate of responding, and the low response rate necessitated that all members of the participant pool receive a survey. In effect, a census of school psychologists occurred as a result of forgoing true random sampling procedures. In addition, volunteer bias may have also contributed given that school psychologists who may have experienced higher or lower degrees of burnout, may have been less likely to participate in the study.

A second limitation is the exploratory nature of this study. As the population of Canadian school psychologists is limited as is the response rate of returned surveys, the power necessary to meet acceptable standards for the regression analyses could not be met. Therefore, all regression results are only exploratory and suggestive for future research possibilities.

A third limitation is the lack of strong psychometric evidence of reliability for some of the scores used. According to Nunnally's (1978) criterion, the internal consistencies of scores for the SPSI, CIM, and the MBI Personal Accomplishment scales meet acceptable standards of reliability. However, alphas for the NEO FFI subscales of Openness to Experience and Conscientiousness, and the MBI Depersonalization scores fell below the .70 criterion (Nunnally, 1978), which is lower than prior reliability estimates reported in the literature (Costa & McCrae, 1992) and indicates that the scales are not sufficiently homogeneous. As the scales of Openness to Experience and Depersonalization marginally do not meet the .70 criterion by .03, the lower internal consistency may be a result of the limited sample size. The coefficient alpha of .53 for Conscientiousness is low; however, this variable was included for exploratory research. This study applied multiple regression analyses and thereby was examining group mean scores which are expected to be more reliable than individual scores (H. Suen, personal communication, September 27, 2007). Furthermore, although Conscientiousness scores did not contribute significantly in any of the analyses, this may be because of poor reliability, a poor theoretical model, or low statistical power (H. Suen, personal communication, September 27, 2007).

A fourth limitation is that the use of self-report to measure internal states has been debated in the stress literature as self-reports are fallible (Perrewe & Zellars, 1999). Self-reports often have the measurement error surrounding context effects, such as memory, which may interfere with the accuracy of reporting (Schwarz, 1999); however, it is argued that one's perceptions of stress and strain are central in this field (Perrewe & Zellars, 1999). However, perceptions are not necessarily consistent. For instance, in this study, one question asked participants to rate their overall stress. The mean and the median of this rating for participants is higher than the mean and the median of the total scores of

stressors. One remedy has been the use of frequency scales, as in the MBI, as well as the concentration on events (Frese & Zapf, 1988); however, documentation is often not required and therefore this measurement of behavior may be less accurate. This issue remains controversial in this area of research.

A final limitation of this study is the omission of the variables such as role conflict, that are considered to be strong predictors of elements of burnout (Bakker et al., 2006; Lee & Ashforth, 1996); consequently, it is unknown whether the variables examined in this study are useful beyond those previously identified as influential. Future research that integrates the variables discussed in this study as well as the variables of neuroticism and agreeableness with the burnout criterion of emotional exhaustion would increase the applicability of these findings.

Directions for Future Research

Hierarchical setwise multiple regression was applied in this study, and replication of these analyses using similar samples would allow for greater generalization of the findings to the population of school psychologists. Given that the sampling of Canadian school psychologists proved restrictive in terms of issues previously discussed, an investigation of these research questions with a larger and different population of school psychologists, such as those in the United States, would be of interest and add additional evidence to support the interpretations based on the present research. Examining another country is also of interest as nation has been found to be a moderator with stress and variables such as job autonomy and interpersonal conflict (Liu, Spector, & Shi, 2007). The profession of school psychology in the United States is more established than in Canada due to several factors: (a) federal legislation (Oakland, 2007), (b) a strong national association (Oakland, 2007), and (c) more American graduate programs hold APA

accreditation and train school psychologists in a wider range of skills such as consultation, interventions, and supervision. Research with a larger sample size may permit further examination of the moderating interaction between climate for innovation and stress in the prediction of personal accomplishment, as well as the pattern of association between high levels of conscientiousness and depersonalization.

Furthermore, the addition of other variables of interest into theoretical models assumed to explain the relationship of stress and burnout criteria may allow for a greater proportion of the variance to be explained. Specifically, the addition of other variables may address the omitted variable bias seen with the criterion of depersonalization. Other potential protective factors that may be pertinent to school psychologists may be social support and physical health factors (Beehr, 1994; Cordes & Dougherty, 1993) or membership in professional organization.

The continued examination of the concept of innovation as measured by the CIM is recommended. The high internal consistency of the CIM and its predictive capabilities on the burnout criteria of depersonalization in this study initially add credibility to the potential usefulness of this tool. In addition, further research will allow for the recommendations that psychologists be innovators by Koch (2001), Sheridan and Gutkin (2000), and Ysseldyke et al. (1997) to be empirically validated.

The contribution of the variables of percentage of time spent on assessments to the prediction of depersonalization is suggested. Such exploratory findings require further research, as they may be of importance given that the field's concentration on assessment has been theoretically linked with attrition from school psychology practice (Ysseldyke, et al., 2006).

Conclusion

Stressors are experienced by everyone in society; however, when stressors lead to burnout among individuals who work serving others, the effects of burnout can have substantial repercussions. Students, teachers, administrators, parents, and families are affected when a school psychologist experiences burnout. Given the various roles and tasks school psychologists perform, from assessment specialist to crisis worker, the feelings of lack of personal accomplishment as well as a disconnection from those whom one aims to help is a somber reality in our profession.

The present study examined the effects of stressors on two aspects of burnout, namely depersonalization and personal accomplishment, with an underrepresented population in the literature -- Canadian school psychologists. The effects of demographics variables, namely gender, marital status, years as a school psychologist, school psychologist: student ratio, percentage of time spent on assessments were control variables. Two moderators, conscientiousness and/or openness to experience and climate for innovation were also examined to address the main thesis of Beehr's (1994) proposed model. As noted previously, significant main effects were found for percentage of time spent on assessment, climate for innovation, and stress on the prediction of the burnout criteria of personal accomplishment and depersonalization.

The present study also conducted an exploratory factor analysis with the SPSI with the sample Canadian school psychologists. The present study documented a four-factor solution using principal axis factoring with varimax rotation. As previously noted, Liability is associated with the potential and/or actual harm to self and others. Assessment represents stressors associated with conducting evaluations Interpersonal Strife addresses stressors

associated with interpersonal conflict. Public Speaking represents stressors linked with public speaking. These factors demonstrated acceptable reliability coefficients. The inclusion of these factors in hierarchical setwise multiple regressions yielded significant main effects for Liability and Interpersonal Strife with regard to the prediction of personal accomplishment and depersonalization, respectively.

A unique contribution of this study is its examination of the concept of innovation, and how, in the school organization, the variable of climate for innovation can predict depersonalization. This gives some empirical support to the theoretical arguments proposed by Dwyer (2001), Sheridan and Gutkin (2000), and Ysseldyke et al. (1997). Furthermore, the specific environmental variable of climate for innovation can now be examined in the schools.

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Appendix A

School Psychology and Stress Inventory SPSI (Wise, 1985)

Directions: Please rate each of the items or events listed below as to the amount of stress associated with the event. The ratings should be between 1 and 9. The more disruptive effect of a given event, the higher the rating. Please rate each item. Do not leave any blank spaces. If you have not experienced an item or event, please estimate the relative stress associated with such an event

Rating	least								most
1-9	stressful								stressful

1	2	3	4	5	6	7	8	9
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1. Keeping up with current literature
2. Conferences or staffings with resistant teachers
3. Supervising an intern or school psychology graduate student
4. Conducting in-service workshops
5. Carrying testing equipment around in unfavourable weather conditions
6. Pressure to complete a set of number of cases (e.g., you must test at least 100 children a year)
7. Lack of availability of appropriate assessment materials
8. Report writing
9. Lack of consensus in a staffing
10. Not enough time to perform job adequately
11. Impending teachers' strike in your district
12. Telling parents their child has a handicap/ disability
13. Working with uncooperative principals and other administrators
14. Public speaking engagements
15. Potential suicide cases
16. Teacher dissatisfaction with your recommendations
17. Spending time driving between schools
18. Incompetent and/or inflexible supervisors
19. Feeling caught between child's needs and administrative constraints (i.e. trying to 'fit' a child into an existing program)

20. Inadequate secretarial help
21. Lack of contact with professional colleagues
22. Conducting parent groups
23. A backlog of more than 5 reports to be written
24. Notification of unsatisfactory job performance
25. Threat of a due process hearing/of legal action
26. Insufficient recognition of your work
27. Working in physically dangerous situations (i.e. gang ruled high schools).
28. A backlog of more than 10 referrals
29. A lack of appropriate services for children
30. Child abuse cases
31. Being told that you “have it easy” by classroom teachers
32. Conferences or staffings with resistant parents
33. Screening (*Assessing*) bilingual children
34. Keeping your district “legal”
35. A change in the schools or districts which you serve
36. Using the same scale, 1-9, how stressful is your job overall?

37. Is there an item or event which you feel should be included? If so, write the item in below and assign it a numerical value.

Appendix B

Demographic survey *(based upon Wise, 1985)*

1. Age _____ years
2. Gender
 - male
 - female
3. Ethnicity:
 - White
 - Black
 - Hispanic
 - Other
4. Marital status
 - single
 - married
 - divorced/separated
 - widowed
5. Current location of employment:
 - Prince Edward Island
 - Nova Scotia
 - New Brunswick
 - Newfoundland/Labrador
 - Quebec
 - Ontario
 - Manitoba
 - Saskatchewan
 - Alberta
 - British Columbia
 - Northwest Territories
6. Educational background
 - School Psychology
 - Educational Psychology
 - Clinical Psychology
 - Other _____

7. Highest educational degree obtained in a field of psychology

- master's
- doctorate
- post-doctorate degree

Year completed training: _____

8. Work setting

- elementary school(s) only
- secondary school(s) only
- combination of elementary and secondary schools
- other : _____

9. Type of community:

- urban
- rural
- suburban
- combination (Please specify) _____

10. Number of schools you work in:

- 1
- 2
- 3
- 4
- 5 or more

11. Number of school districts/ boards you currently work for:

- 1
- 2
- 3
- 4

12. Do you do private work while employed at a school board?

- yes
- no

13. Socioeconomic status of the majority of the population in your schools that you serve:

- low income –poverty
- lower middle class
- middle class
- upper middle/upper
- combination (Please specify) _____

14. Approximate number of students you serve (the number of student in your district, cooperative, etc, divided by the number of psychologists)

- fewer than 1000
- 1000 and 1500
- 1501 and 2000
- 2001 and 2500
- 2501 and 3000
- 3001 and more

15. Number of years as a school psychologist/ psychologist in the schools
_____ years

16. Annual salary from school district (gross)

- under 15 000\$
- 15-25 999\$
- 26-35 999\$
- 36-45 999\$
- 46-55 999\$
- 56-65 999\$
- over 65 999\$

17. Are you:

- on contract with the school district for nine months
- on contract with the school district for ten months
- on contract with the school district for eleven months
- on contract with the school district for twelve months
- a permanent employee of the school district
- other (Please explain) _____

18. What is the estimated percentage of your time spent in the following activities?

- Assessment ____
- Consultation ____
- Intervention ____
- Crisis ____

Appendix C

Climate for Innovation Measure (Scott & Bruce 1994)

Strongly disagree

Strongly agree

1 2 3 4 5

1. ____ Creativity is encouraged here
2. ____ Our ability to function creatively is respected by leadership
3. ____ Around here people are allowed to try to solve the same problems in different ways
4. ____ The main function of members in this organization is to follow orders which come down through channels*
5. ____ Around here, a person can get into lots of trouble by being different*
6. ____ This organization can be described as flexible and continually adapting to change
7. ____ A person can't do things that are too different around here without provoking anger*
8. ____ The best way to get along in this organization is to think the way the rest of the group does*
9. ____ People around here are expected to deal with problems in the same way*
10. ____ This organization is open and responsive to change
11. ____ The people in charge around here usually get credit for others' ideas*
12. ____ In this organization, we tend to stick to tried and true ways*
13. ____ This place seems to be more concerned with the status quo than with change*

14. ____ Assistance in developing new ideas is readily available
15. ____ There are adequate resources devoted to innovation in this organization
16. ____ There is adequate time available to pursue creative ideas here
17. ____ Lack of funding to investigate creative ideas is a problem in this organization*
18. ____ Personnel shortage inhibit innovation in this organization*
19. ____ This organization gives me free time to pursue creative ideas during the work day
20. ____ The reward system here encourages innovation
21. ____ This organization publicly recognizes those who are innovative
22. ____ The reward system here benefits mainly those who don't rock the boat*

* Reverse coding

Appendix D

Descriptive Statistics for Item-level Responses on the School Psychology Stress Inventory

<i>Stressor</i>	<i>M</i>	<i>Median</i>	<i>Mode</i>	<i>SD</i>
Keeping up with literature	4.05	4.00	2.00	1.94
Conferences with resistant teachers	5.30	6.00	6.00	1.96
Supervising intern	3.89	4.00	5.00	1.96
Conducting in-services	5.05	5.00	3.00*	2.27
Carrying test equipment around	4.78	5.00	2.00*	2.43
Pressure to complete a number of assessments	6.23	7.00	9.00	2.51
Lack of availability of appropriate assessment materials	4.30	4.00	2.00	2.52
Report writing	5.72	6.00	7.00	2.02
Lack of consensus in a staffing	4.34	4.00	4.00	2.14
Not enough time to perform job adequately	6.85	7.00	9.00	2.02
Impending teachers' strike	3.24	2.00	1.00	2.41
Telling parents child has a disability	4.60	5.00	5.00	1.88
Working with uncooperative principals and other administrators	6.03	7.00	8.00	2.31
Public speaking engagements	5.13	5.00	5.00*	2.39
Potential suicide cases	6.36	7.00	9.00	2.50
Teacher dissatisfaction with recommendations	4.95	5.00	7.00	2.17
Spending time driving between schools	3.34	3.00	2.00	2.07
Incompetent and/or inflexible supervisors	5.50	7.00	8.00	2.85
Feeling caught between child's needs and administration	5.98	6.00	7.00	2.08
Inadequate secretarial help	3.97	4.00	2.00	2.23
Lack of contact with professional colleagues	4.05	4.00	4.00	2.03

Appendix D (continued)

Appendix D (continued)

Descriptive Statistics of Responses of the School Psychology Stress Inventory

<i>Stressor</i>	<i>M</i>	<i>Median</i>	<i>Mode</i>	<i>SD</i>
Conducting parent groups	3.70	3.00	3.00	2.14
Backlog of more than five reports	6.52	7.00	7.00	1.95
Notification of unsatisfactory job performance	6.23	8.00	9.00	3.11
Threat of legal action	6.94	9.00	9.00	2.94
Insufficient recognition of work	4.64	5.00	4.00	2.24
Working in physically dangerous situation	5.21	6.00	7.00	2.67
Backlog of more than 10 referrals	6.00	6.00	7.00	2.35
Lack of appropriate services for children	6.57	7.00	7.00	1.85
Child abuse cases	6.22	7.00	9.00	2.24
Being told you “have it easy” by teachers	4.04	4.00	2.00	2.30
Conferences with resistant parents	5.31	6.00	6.00	1.99
Assessing bilingual children	3.61	3.00	1.00	2.13
Keeping district legal	4.03	4.00	1.00	2.22
Change in schools you serve	4.37	4.00	4.00	2.17

Note. $N = 149$. Range of score on Likert rating scale of SPSI is 1 (least stressful) to 9 (most stressful). * multiple modes: smallest one reported.

Appendix E

Qualitative Examination of Additional Stressors Provided by Sample

<i>Stressor</i>	<i>N</i>
<hr/>	
Working conditions	
Lack and/or inappropriate office space to test and to work	5
Lack of compensation for mileage	2
Lack of laptops	1
Attending meetings not related to school psychologist's role	2
Inappropriate referrals	1
Lack of knowledge to where to refer students to external social services/health systems	1
Inconsistent salary scales for different school districts	1
Lack of benefits for doctoral level psychologists	1
Lack of reimbursement for liability insurance	1
Isolation from other school psychologists	1
Supervisors	
Disagreements with supervisor	3
Supervisor not a psychologist	1
Lack of support for supervisors by fellow supervisors	1
Lack of contact with supervisor	1
School Conditions	
Crisis events	1
Lack of professional boundaries from school staff e.g., other non-psychologists doing roles of school psychologists	2
Preferential working conditions to guidance counsellors	2
Role conflict of being part of school and a psychologist to the school	1

Appendix F

Copy of Informed Consent Form

Implied Informed Consent Form for Social Science Research
The Pennsylvania State University

ORP USE ONLY: IRB# Doc.# The Pennsylvania State University Office for Research Protections Approval Date: Expiration Date: Social Science Institutional Review Board
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Nature of Research: Job Satisfaction of School Psychologists in Canada
IRB Number: TBA

Principal Investigator: Laura Ann Wyglinski

Advisor: Dr. Barbara Schaefer
The Pennsylvania State University
Department of Educational and School Psychology
and Special Education
125 CEDAR Building
University Park, PA 16802-3108
814-865-6072; bas19@psu.edu

Dear Sir/Madame:

You are being asked to participate in the first national study of job satisfaction in school psychologists in Canada.

The purpose of this research is to examine the role of stressors, personality variables and other environmental factors in the experience of job satisfaction in Canadian School psychologists

You will be asked to complete answer 107 questions on a survey.

The benefits to society include understanding on the stressors of school psychologists in Canada. This information can help plan programs, improve working conditions, and create preventative strategies.

The questionnaire will take about 20 minutes to complete. Although this questionnaire is in both English and French, due to psychometric issues, the questionnaire is only available in English.

Your participation in this research is confidential. The survey does not ask for any information that would identify who the responses belong to. Furthermore, if a sample size is small in an area, and you may be worried that you may be identified, the data will be reported so that no identifying information will be reported.

In the event of any publication or presentations resulting from the research, no personally identifiable information will be shared because your name is in no way linked to your responses.

All data will be identified by code numbers. The identity linked to these code numbers will be kept in a locked file cabinet separate from the data. All data will be kept in a locked file cabinet. Passwords will protect the data stored in computers. Only the principal investigator and the advisor will have access to the participant's identity and access to the data.

You will find a code on the business reply envelope. That code is simply for tabulation purposes. When the data is analyzed, all identifying information will be stripped from the data.

You can ask questions about this research. Contact Laura Ann Wyglinski at (514) 483-7200 extension 7521 with questions and/or Dr. Schaefer at (814) 865-1953 with questions. You can also call this number if you have complaints or concerns about this research..

Your decision to be in this research is voluntary. You can stop at any time. You do not have to answer any questions you do not want to answer. Refusal to take part in or withdrawing from this study will involve no penalty or loss of benefits you would receive otherwise.

You must be 18 years of age or older to take part in this research study.

Completion and return of the survey implies that you have read the information in this form and consent to take part in the research.

Please keep this form for your records or future reference.

For your convenience, a self-addressed stamped envelop has been provided to you.

Appendix G

Regression Analyses for Each Predictor Variable or Set of Predictor Variables for the Criterion of Depersonalization

Predictor Variable	B	SE	β	<i>F</i>	R^2
Set 1				2.79*	.09*
Marital Status	-2.53	1.54	-.14		
Gender	3.22	1.91	.14		
Years on job	.14	.10	.11		
Psychologist: Student ratio	.09	.49	.02		
Time on Assessment	-.10	.04	-.23**		
Set 2				4.35**	.20**
Marital Status	-1.74	1.49	-.09		
Gender	.70	1.92	.03		
Years on job	.15	.10	.12		
Psychologist: Student ratio	-.26	.47	-.04		
Time on Assessment	-.12	.03	-.27**		
NEO FFI: OE	-.08	.09	-.07		
CIM	-.27	.08	-.27**		
SPSI	-.18	.08	.18*		
Set 3				3.33**	.21**
Marital Status	-1.74	1.52	-.09		
Gender	.88	1.95	.04		
Years on job	.17	.10	.14		
Psychologist: Student ratio	-.29	.48	-.05		
Time on Assessment	-.11	.03	-.27**		
NEO FFI: OE	.85	.75	.77		
CIM	.53	.67	.53		
SPSI	.71	.69	.71		
OE x SPSI	-.01	.01	-.53		
OE x CIM	-.01	.01	-.90		
SPSI x CIM	-.00	.01	-.19		

Note. *N* = 143. NEO FFI; OE = NEO Five Factor Inventory Openness to Experience; CIM = Climate for Innovation Measure; SPSI = School Psychology Stress Inventory. **p* < .05. ** *p* < .01.

Appendix H

Regression Analyses for Each Predictor Variable or Set of Predictor Variables for the Criterion of Depersonalization

Predictor Variable	B	SE	β	F	R ²
Set 1				2.79*	.09*
Marital Status	-2.53	1.54	-.14		
Gender	3.22	1.91	.14		
Years on job	.14	.10	.11		
Psychologist: Student ratio	.09	.49	.02		
Time on Assessment	-.10	.04	-.23**		
Set 2				4.59**	.21**
Marital Status	-1.76	1.49	-.09		
Gender	.50	1.92	.02		
Years on job	.14	.10	.11		
Psychologist: Student ratio	-.33	.47	-.06		
Time on Assessment	-.11	.03	-.25**		
NEO FFI: C	-.12	.08	-.12		
CIM	-.29	.09	.29**		
SPSI	-.18	.08	.18*		
Set 3				3.42**	.22**
Marital Status	-1.93	1.52	-.10		
Gender	.06	2.01	.00		
Years on job	.15	.10	.12		
Psychologist: Student ratio	-.39	.48	-.07		
Time on Assessment	-.10	.03	-.24**		
NEO FFI: C	-.29	.70	.30		
CIM	-.17	.62	-.17		
SPSI	.81	.72	.81		
C x SPSI	-.01	.01	-.68		
C x CIM	.00	.01	.04		
SPSI x CIM	-.00	.01	-.19		

Note. N = 143. NEO FFI: C = NEO Five Factor Inventory Conscientiousness; CIM = Climate for Innovation Measure; SPSI = School Psychology Stress Inventory. * $p < .05$. ** $p < .01$.

Appendix I

Regression Analyses for Each Predictor Variable or Set of Predictor Variables for the Criterion of Personal Accomplishment

Predictor Variable	B	SE	β	F	R ²
Set 1				2.37*	.08*
Marital Status	-1.33	1.55	.07		
Gender	-5.30	1.92	-.23*		
Years on job	-.13	.11	-.11		
Psychologist: Student ratio	-.66	.49	-.11		
Time on Assessment	-.04	.04	-.08		
Set 2				3.01**	.15**
Marital Status	.57	1.54	.03		
Gender	-3.36	1.98	-.15		
Years on job	-.13	.10	-.10		
Psychologist: Student ratio	-.52	.49	-.09		
Time on Assessment	-.02	.04	-.04		
NEO FFI: OE	.18	.09	.16*		
CIM	.10	.09	.10		
SPSI	-.20	.09	-.20*		
Set 3				2.60**	.17**
Marital Status	.34	1.55	.02		
Gender	-3.12	2.00	-.14		
Years on job	-.14	.10	-.12		
Psychologist: Student ratio	-.33	.50	-.05		
Time on Assessment	-.02	.04	-.05		
NEO FFI: OE	-.06	.77	-.05		
CIM	-1.21	.69	-1.21		
SPSI	-.77	.71	-.77		
OE x SPSI	-.00	.01	-.29		
OE x CIM	.01	.01	.68		
SPSI x CIM	.02	.01	.99		

Note. N = 143. NEO FFI; C = NEO Five Factor Inventory Conscientiousness; CIM = Climate for Innovation Measure; SPSI = School Psychology Stress Inventory. * $p < .05$. ** $p < .01$.

Appendix J

Regression Analyses for Each Predictor Variable or Set of Predictor Variables for the Criterion for Personal Accomplishment

Predictor Variable	B	SE	β	F	R ²
Set 1				2.37*	.08*
Marital Status	1.32	1.55	.07		
Gender	-5.30	1.92	-.23**		
Years on job	-.13	.11	-.12		
Psychologist: Student ratio	-.67	.49	-.11		
Time on Assessment	-.04	.04	-.08		
Set 2				2.54*	.13 *
Marital Status	.56	1.56	.03		
Gender	-3.37	2.01	-.15		
Years on job	-.12	.10	-.10		
Psychologist: Student ratio	-.47	.50	-.08		
Time on Assessment	-.03	.04	-.07		
NEO FFI: C	.07	.08	.07		
CIM	.11	.09	.11		
SPSI	-.19	.09	-.19		
Set 3				2.12*	.15*
Marital Status	.35	1.58	.02		
Gender	-3.43	2.10	-.15		
Years on job	-.12	.10	-.10		
Psychologist: Student ratio	-.33	.50	-.06		
Time on Assessment	-.04	.04	-.09		
NEO FFI: C	.62	.73	.63		
CIM	-.11	.64	-.11		
SPSI	-.65	.75	-.65		
C x SPSI	-.00	.01	-.11		
C x CIM	-.01	.01	-.68		
SPSI x CIM	.01	.01	.67		

Note. N = 143. NEO FFI; C = NEO Five Factor Inventory Conscientiousness; CIM = Climate for Innovation Measure; SPSI = School Psychology Stress Inventory. * $p < .05$. ** $p < .0$

**Curriculum Vitae
Laura Ann Wyglinski**

EDUCATION

B.A. Psychology, McGill University, 1993
M.S. School Psychology, The Pennsylvania State University, 2000
Current School Psychology Doctoral Candidate, The Pennsylvania State University

EXPERIENCE

2004 –present English Montreal School Board, Montreal, Quebec, Canada
2001-2004 Pennsylvania Certified School Psychologist, Juniata County School District, Pennsylvania
2001 CEDAR School Psychology Student Supervisor
2000–2001 Pennsylvania Certified School Psychologist, Bellefonte Area School District, Bellefonte, Pennsylvania
1998–2001 Bellefonte Emotional Support Team (B.E.S.T.) Case Manager
1997-2001 CEDAR School Psychology Student Clinician

MEMEBERSHIPS/ASSOCIATIONS

National Association of School Psychologists (NASP)