

**A STUDY OF THE RELATIONSHIP BETWEEN STRESS
AND SOCIAL CLIMATE
IN A CORRECTIONAL INSTITUTION**

by

Blair F. Sullivan

A thesis
presented to the University of Manitoba
in fulfillment of the
thesis requirement for the degree of
Master of Social Work
in
The Faculty of Graduate Studies

Winnipeg, Manitoba

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A thesis submitted to the Faculty of Graduate Studies of
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MASTER OF SOCIAL WORK

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ABSTRACT

The causes and effects of the stress phenomenon among prison inmates have received considerable attention from researchers. In addition, several studies have examined the subjective perceptions of prisoners toward the social environment of correctional institutions. The objective of this study was to explore the potential relationship between inmate stress and the social environment, and how inmate perceptions of a prison's "social climate" may effect their stress levels. The State Anxiety scale of Spielberger's State-Trait Anxiety Inventory and the Moos Correctional Institutions Environment Scale were administered to inmates at Headingley Correctional Institution, a Provincial correctional facility in Manitoba. The results indicated no substantive relationships between state anxiety and the nine CIES subscales. Only the CIES dimension of "involvement" showed any correlation with the state anxiety measure. It was concluded that the CIES was probably not a useful predictor of state anxiety for this sample population. It was suggested that the relatively small sample size may have affected the results. Alternatively, the theory linking inmate stress to perceptions of social climate may require reassessment.

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INTRODUCTION

Correctional institutions are complex social systems in which behaviours manifested in the inmate population are influenced by a variety of environmental, emotional and cognitive factors. Several studies of prison environments have focussed attention on the stressful effects of incarceration. The more common include analyses of the effects of physical structure and inmate overcrowding (Cox, et al., 1984; Ruback, et al., 1986), the physical and social psychological deprivations of imprisonment (Sykes, 1958; Clemmer, 1966; Toch, 1977; Johnson & Toch, 1982), ritualized degradation of inmate self-esteem (Goffman, 1961; Johnson & Toch, 1982), and the victimization of prisoners by other inmates and (in certain cases) by staff (Bowker, 1982; Marquart, 1986).

The work cited has been developed on the assumption that prisons are by nature stress-inducing environments. On the basis of common wisdom alone, few would argue that the forced removal of an individual from his home community and imprisonment in a large, often remote, total institution does not generate the potential for emotional distress. Nonetheless, a minimal amount of empirical research has been conducted into the processes through which inmate perceptions of prison social environment may influence the development of stress disorders among the prisoner population. It is the objective of the present study to examine aspects of this potential relationship within specified conceptual and instrumental boundaries.

Human stress responses and their relationship to environmental influences have been the objects of considerable research focus. This recognition of stress as a phenomenon was pioneered by Hans Selye, who defined stress as:

nonspecific (that is, common) result of any demand upon the body, be the effect mental or somatic (Selye, 1982:7).

Selye viewed the impact of stress responses in essentially physiological terms, describing the body's response to stressors as the "general adaptation syndrome" consisting of three phases: alarm, resistance, and exhaustion (Selye, 1976, 1982).

Subsequent development of stress theory, primarily within the field of psychology, tended to emphasize a more encompassing approach to definition. In addition to physiological effects, stress responses were conceptualized within the context of interactional processes occurring between cognitive, emotional and environmental variables (e.g. Spielberger, 1972(a); Lazarus & Launier, 1978; Hamilton, 1979; Folkman, et al., 1979; Endler & Edwards, 1982). The psychological variables of cognition and emotion are considered by interactionists to be both mediators of environmental stressors and as stressors within themselves (Baum, et al., 1981). Accordingly, the subjective appraisal of situations as potentially stressful by individuals, whether elicited by internal or external threats, can influence the stress

response at least as severely as objective stressors (Lazarus & Launier, 1978; Holroyd & Lazarus, 1982; Spielberger, et al., 1980; Toch, 1982).

Lazarus and Launier (1978:296) have suggested that:

the meaning sphere encompassed by the term "stress" is any event in which the environmental or internal demands (or both) tax or exceed the adaptive resources of an individual, social system, or tissue system.

This definition relates to the emphasis by Lazarus on the "transactional" nature of the stress response, wherein cognitive and situational factors affect response patterns through complex interactions, rather than in isolation from one another (Lazarus & Launier, 1978; Coyne & Lazarus, 1980). Other theorists have noted the critical importance of an individual's perception of threat in stress response. Endler and Edwards (1982), for example, pointed out that stress is a situational variable, the perception of which is influenced by a person's predisposition to react to stress with increased anxiety. In turn, the perception of threat mediates increases in anxiety states. Spielberger (1979:47) defined stress in similar terms:

stress...can be defined by transactions between the person and the environment in which stressors are linked to anxiety reactions by the perception of threat.

Spielberger (1972(a), 1976) posited that "stress" refers to the objective stimulus properties of a situation, and "threat" to an individual's idiosyncratic perception of a situation as potentially harmful. The appraisal of a situation as threatening, which may not necessarily be based on the presence of objective danger, can elicit elevations in anxiety states through interplay between cognitive and emotional processes.

This relatively parsimonious approach to the difficult problem of defining the stress concept nevertheless introduces another construct requiring explication--the notion of "anxiety".

The relationship between stress and anxiety has not always been clearly delineated in the literature (e.g. Endler & Edwards, 1978, 1982; Spielberger, 1972(b), 1976; Baum, et al., 1981). It has been suggested, for example, that the terms stress and anxiety are frequently used interchangeably (Spielberger, 1976), or variably defined as stimulus, response, drive, motive and trait (Endler & Edwards, 1978). Selye (1982), moreover, appeared to view dissimilar situations such as pain, fear, emotional arousal, fatigue and humiliation as capable of inducing stress in their own right. In general, however, anxiety is commonly recognized as involving unpleasant subjective experiences and manifestations of physiological distress (Endler & Edwards, 1978). May (1977) described the primary characteristics of anxiety

as feelings of uncertainty and helplessness in response to danger.

Spielberger (1972, 1972(a), 1972(b), 1975, 1975(a), 1976; Spielberger, et al., 1977; Spielberger, et al., 1980) has attempted to provide some conceptual order to the complex interactions between stress and anxiety. He differentiates two modes of anxiety response. "State" anxiety (A-State) refers to a transitory emotional state, characterized by subjective, consciously perceived feelings of apprehension, tension and nervousness associated with the physiological arousal of the autonomic nervous system. "Trait" anxiety (A-Trait), on the other hand, refers to a relatively stable, or chronic, individual disposition to perceive a wide variety of situations as threatening, and to react differentially to these stressors with elevated state anxiety levels. Spielberger posits a process approach to anxiety, in which a sequence of cognitive, affective, physiological, and behavioural events occurs. This sequence may be induced by internal and/or external stressors, subjectively appraised as threatening, and followed by the initiation or increase of state anxiety responses. He concludes (1976:6):

It should be noted that while an anxiety state lies at the core of the anxiety process, this process also involves stress, threat, physiological changes, and behavioral reactions.

Anxiety, then, can be viewed as an emotional response to internal and/or external stressors (dangerous stimulus conditions) subjectively perceived by an individual as threatening. Stress reactions are not limited, however, to anxiety alone. Other emotional states evoked by stressful situations include anger, depression, fear, guilt, and so forth (Lazarus & Launier, 1978; Baum, et al., 1981). In addition, each of these affective states is accompanied by a variety of physiological changes that impact directly on somatic adaptation to stressors (Selye, 1980, 1982; Magnusson, 1982). Stress and anxiety, therefore, are not synonymous constructs. Although anxiety inevitably entails stress, the reverse does not necessarily apply (Magnusson, 1982). Nonetheless, anxiety states are important indicators of a person's current vulnerability to stress, and of their ability to adapt to stressful stimuli. Stress, moreover, is an inferred concept and not directly observable. Stress can be measured indirectly, however, through the identification of specific environmental stressors or the identification of emotional states such as anxiety (Wilder & Plutchik, 1985).

Some studies of prison environments and of inmate adjustment to incarceration have attempted to evaluate the stress-inducing aspects of institutional conditions. Sykes (1958), Goffman (1961), Irwin (1970), and Toch (1977), for example, provided classic descriptions of the various deprivations, degradations and deviant subcultures inherent in

many prisons. In each case, these conditions were assumed by the authors to result, directly or inferentially, in stress reactions for many inmates. Toch (1977, 1982) suggested, for instance, that inmates are exposed to the stressors of "stimulus overload" (e.g., physical and sexual threats) and "stimulus underload" (e.g., enforced inactivity or insufficient mental challenge), occurring concomitantly or in unpredictable combination.

More empirical research has been conducted into such phenomena as the effects of prison overcrowding on inmate blood pressure (D'Atri, et al., 1981); the relationship of prison crowding to suicide rates, violent deaths, assaults among inmates, disciplinary infractions, etc. (Cox, et al., 1984); and the relation of perceived environmental control among inmates to reported overcrowding, stress and physical symptoms (Ruback, et al., 1986). These studies reported varying, but significant correlational relationships between overcrowding in prisons and elevated indices of pathology.

Other researchers, however, have questioned the conclusion that prison crowding has highly detrimental effects on inmate populations. Most notably, Anderson and Pettigrew (1985) reviewed the literature relating prison crowding to prisoner stress responses and reported inconsistent results and general failure to demonstrate empirical evidence linking density to inmates behaviour. On the other hand, Anderson and Pettigrew (1985) cited research findings which indi-

cated that inmate affect and mood appeared to be influenced more by length of incarceration and security level (minimum to maximum) than by housing environment. They noted that such indices of stress related behaviour as assaults among inmates and self-mutilation varied with the security rating of the institution, rather than with high population levels. Complaints of physiological and psychological symptoms from inmates declined, moreover, within the institutions sampled after an average of six weeks assignment to a housing unit. Goodstein, et al., (1984), suggested conversely that stress related behaviour exhibited by prisoners is less the result of over-population than of perceived powerlessness, or lack of personal control, in relation to the prison environment.

The diverse approaches to the relationships between inmate stress reactions and prison conditions outlined above reveals possible over-emphases on population density, and the apparent absence of systematic evaluations of the dynamics of correctional environments. An extensive effort to describe and analyze the social environments of prison settings, however, has been undertaken in the work of Rudolf Moos (1968, 1970, 1974, 1975, 1987; Wenk & Moos, 1972; Trickett & Moos, 1972).

Moos's conception of social environments was in part derived from H. A. Murray's earlier dual theory of personal needs and environmental "press" (Wenk & Moos, 1972; Moos, 1974, 1975). Murray viewed personal needs (e.g., needs for

achievement, for autonomy, for affiliation) as the primary internal determinants of behaviour, the strength of these needs constituting one's personality. But Murray also ascribed a significant role to environmental influences on behaviour. He developed the concept of "environmental press" to describe the beneficial or deleterious impact of environments, in which "press" refers to the directional tendency within a situation to either facilitate or impede the attainment of personal needs. As with Murray, Moos (1974, 1975) accounts for behavioural variance by emphasizing the interactional nature of the relationship between personal and environmental variables. He states (Moos, 1975:9):

The most important conclusion is that both social settings and person-by-setting interactions consistently account for substantial portions of the variance in a wide range of individual behaviors.

He points out, as well, that social settings impact on the individual's moods, attitudes, sense of well-being and health, and on personal, intellectual, and social development.

Moos suggests that widely variable social environments can be characterized by common or similar conceptual dimensions. Within this framework, Moos and his colleagues developed broad analytical categories to assess the social

environments (or "social climates") of numerous social milieu. These settings included in-patient and out-patient psychiatric treatment programmes, university student living groups, school classrooms, group-based treatment programmes, military companies, and adult and juvenile correctional facilities (Moos, 1974, 1975). Each milieu's social and organizational "climate" can be characterized, with adaptations for the specific setting, according to its "relationship" dimensions, "personal development" dimensions, and "system maintenance" or "system change" dimensions.

The three broad categories are each subdivided into more specific related social climate dimensions (Moos, 1975). Relationship dimensions identify the nature and intensity of personal relationships in an environment. They assess the extent of involvement of people within an environment, the extent of support and help among individuals, and the extent to which people are encouraged to be expressive and spontaneous. Personal development dimensions assess the environment's tendency to nurture personal growth and self-enhancement. They include the degree of autonomy in which people are encouraged to be initiating and self-sufficient, the extent of practical orientation in which individuals are encouraged to orient themselves toward training and concrete goal-setting, and the degree of personal problem orientation whereby persons are encouraged to explore personal feelings and develop insight. Finally,

system maintenance dimensions include the extent to which an environment emphasizes order and organization, the clarity of expectations, rules and procedures, and the degree to which control is maintained over the people functioning within a social environment. Moos (1974, 1975) has indicated that although the three general social climate dimensions are common to most environments, some of the sub-dimensions (such as "expressiveness" in relation to military companies or "staff control" in relation to families) do not apply across all types of social milieu and must accordingly be adapted.

Correctional institution environments are widely variable in their emphasis on each social climate dimension. To explain the development of this variance among prisons, Moos (1987) conceptualized correctional environments as dynamic systems composed of four "domains": physical features, organizational structure and policy, suprapersonal factors (inmate and staff aggregate background and personal characteristics), and social climate. Moos (1987:33) views the relationship between the four environmental domains in the following terms:

the impact of architectural, organizational, and suprapersonal factors stems in part from the social climate they help to promote. Accordingly, the social climate can alter the influence

of the other three domains on resident morale and behavior.

Social climate, then, appears to maintain a pivotal role as an environmental influence on the affect and behaviour of prison inmates. The impact of the social environment of prisons is manifested through the perceptions of individuals toward the institutional social climate, and mediated by their personality attributes (Wenk & Moos, 1972). As a consequence, it may be possible to regard a prison's social climate as a group of potential environmental stressors that contribute to stress reactions among the inmate population. The extent to which an institution emphasizes particular social climate dimensions may affect the intensity of stress responses, should that emphasis be perceived as emotionally threatening or a negative influence on the attainment of the inmate's social, personal or physical needs. For instance, a prison environment that emphasizes "system maintenance" dimensions (e.g., staff control) at the expense of "relationship" and "personal development" dimensions (such as support, autonomy and practical orientation) may help to generate a variety of stress disorders among inmates. These symptoms may include anxiety, depression, boredom, anger, and psychosomatic complaints. As noted previously, social climate impacts on other environmental domains. Prisons that are primarily concerned with enforcing strict rule adherence and behavioural control among

inmates may unintentionally promote many of the acting-out behaviours and disciplinary infractions they seek to avoid. The literature suggests that humane and supportive correctional environments enhance pro-social and adaptive behaviour. Conversely, it is apparent that unsupportive and inflexibly restraint-oriented prisons tend to encourage antisocial and maladaptive inmate activities (e.g., Goffman, 1961; Moos, 1975; Haney & Zimbardo, 1977; Toch, 1977, 1982; Duffee, 1980; Lombardo, 1982; Marquart, 1986).

The potential for conceptual linkages between environmental stressors, such as correctional social climate factors, and inmate stress responses to those stressors holds significant implications for prison research. Inmates, as with other people, respond emotionally and behaviourally in accordance with their appraisals of the social environment, and to their cognitive appraisals of potential threats from that source (Moos, 1975; Spielberger, 1976; Lazarus & Launier, 1978; Baum, et al., 1981). State anxiety is an emotional state particularly sensitive to subjectively perceived environmental stressors. Cognitive appraisals of threat are immediately followed by increases in state anxiety (Spielberger, 1972(a), 1976; Glanzmann & Laux, 1978) that are transitory, vary in intensity, and fluctuate over time as environmental conditions change (Spielberger, 1975; 1983). When an inmate perceives the prison's social environment in differential ways (in a positive or negative direction), or

appraises changing environmental conditions, it is possible to theorize that these perceptions should be reflected through the inmate's state anxiety responses. Aspects of the institutional social climate that enhance or impede personal need or goal satisfaction ("environmental press"), for example "support" or "autonomy" versus excessive "staff control", can serve to reduce or evoke subjective feelings of tension, apprehension and nervousness associated with state anxiety.

The foregoing theoretical argument provides the basis for this research study and leads to the formulation of a hypothesis: **that inmate stress, as operationalized through state anxiety, varies with inmate perceptions of a prison's social climate dimensions (relationship, personal development, and system maintenance). That is, state anxiety increases among inmates in relation to negative inmate perceptions of the institutional social climate. Inversely, positive evaluations of the prison's social climate would be associated with lower state anxiety scores.**

METHOD

SUBJECTS

The subjects selected for the study were drawn from the sentenced inmate population of Headingley Correctional Institution. The prison is located a few kilometres west of the city of Winnipeg, and is the largest provincial-level correctional facility in Manitoba. The rated capacity of the institution is approximately 350 inmates, but the prisoner population frequently exceeds 400 in number. At any point in time, up to 20% of the population are remanded inmates awaiting trial or case disposition. Over 2,400 admissions were processed through Headingley in 1986. Admission to the facility is based upon a sentence of less than two years and is generally limited to those men sentenced within the Eastern Judicial District of Manitoba, which includes the City of Winnipeg.

The subjects targeted include all sentenced inmates housed in the medium security "Main Building" area and those inmates assigned to the three minimum security "annexes". In addition, up to forty men are resident at the Bannock Point Rehabilitation Camp in Whiteshell Provincial Park, adjacent to the Ontario border. This work camp is a nominal satellite institution of Headingley, and its residents have generally served at least a short period of their terms at HCI before their transfer to camp. Bannock Point was included in the study sample due to the exposure of camp inmates to the environment at Headingley, and the presump-

tion that its small size and more informal minimum security structure reduce the anxiety-inducing elements associated with a larger, more impersonal correctional facility.

Inmates classified at a medium security level are normally restricted to the main institution area of Headingley, a structure dating from the 1930's, and containing both cell blocks and dormitories. Eliminating from consideration the four cell blocks reserved for remanded prisoners, living space remaining for sentenced inmates includes four blocks of 19 cells each and five large dormitories. These areas together can accommodate up to 156 inmates. Two dormitories and one half a cell block are set aside for residents requiring protection and segregation from the general inmate population. In addition, the Intake section for newly arrived, pre-classified inmates can hold up to fourteen individuals. The Reception Unit, a large dormitory area housing a maximum of thirty inmates, is reserved for recently arrived inmates sentenced to six months and over awaiting formal assessment and classification.

Security within the main institution is relatively intrusive. Inmate mobility is constrained by a pass system, by regulations against unauthorized presence in areas other than their immediate living locations, and by prohibition of movement outside the main institution without escort by correctional officers. Steel bars cover all windows of the main building, and electric doors also constructed of steel bars further limit movement.

Inmates classified at minimum security levels are assigned to one of two annex buildings on the grounds of Headingley. Annex "A" has a capacity of 66 prisoners organized into three large dormitories, and houses those inmates sentenced to terms greater than six months. Annex "B" can accommodate up to 72 inmates assigned to off-campus work details or, in some cases, residents maintaining their own employment in the community. In addition this annex receives a number of short term incarcerated serving under thirty days.

Security procedures in the annexes are somewhat less restrictive than those in the main institution. Physical security is limited to windows covered by wire mesh and locked front doors. Mobility within each annex is normally unconstrained. Movement between annexes and between the annexes and main facility is controlled by radio or telephone contact among correctional staff, occasionally through a pass system, but infrequently by staff escorts.

Security based on intensive interaction between staff and inmates, termed "dynamic security" or "direct supervision", is not well developed at Headingley. Contact is functionally limited to completion of basic work tasks and communications essential to maintain minimal organizational needs. Correctional officers normally have little in-depth knowledge of the personality and behavioural profiles of most inmates. Staff deployed to the annex areas interact on

a personal level to a slightly greater degree than main institution officers, due primarily to differences in physical structure and security emphasis. To a large extent, Headingley Correctional Institution is consistent in terms of security structure and policy approach with the "restraint-oriented" model of prison organization (Duffee, 1980).

MEASURES

The State-Trait Anxiety Inventory

Self-report measures of anxiety are numerous. Derogatis (1982), for example, noted that over thirty inventories to assess anxiety alone are currently in use. The selection of an instrument to assess perceived anxiety levels among inmates at Headingley was guided by the criteria of construct validity, internal consistency, reliability, and ease of administration. Since its introduction in 1970, the **State-Trait Anxiety Inventory** (Spielberger, et al., 1970; Spielberger, et al., 1983) has been the most frequently used self-report anxiety measure in psychological research (Buros, 1978). In a recent review (Spielberger, 1984), over 2,000 research studies utilizing the STAI were cited. A descriptive summary of research applications of the STAI is available in the test manual (Spielberger, 1983).

The development of the STAI was generated in accordance with the theoretical distinction made between anxiety as a transitory emotional state (A-State) and anxiety as a pre-dispositional personality trait (A-Trait) (Cattell & Scheier, 1961; Cattell, 1972; Spielberger, 1972(a), 1972(b), 1975, 1975(b); Spielberger, et al., 1977, 1980). Separate scales have been produced to measure each form of anxiety response (Spielberger, 1970, 1983). The A-State scale, measuring transitory feelings of apprehension, tension and nervousness, is sensitive to the presence of environmental

stressors. Spielberger (1983) indicated, for example, that patients exhibit elevated A-State scores immediately prior to surgery, but declining scores as they recuperate. A-Trait scores, in contrast, do not vary substantially before or after surgical procedures.

In an earlier anxiety-related research study at Headingley (Gubernachuk, 1981), statistically significant differences in A-State anxiety were reported between certain medium and minimum security locations, and at varying time intervals during the inmate's period of incarceration. No statistically significant differences were apparent, however, among trait anxiety scores controlling for the variables of institutional location and amount of time served. It therefore seems arguable that the A-State scale would be a more sensitive and accurate measure of anxiety responses associated with the social climate dimensions characterizing Headingley. Within this institutional context, social climate variables can be viewed as potential environmental stressors affecting the state anxiety responses of individual inmates. For the purposes of this study, accordingly, it was determined to use only the A-State scale as a measure of anxiety levels.

The current A-State (Form Y) questionnaire (Spielberger, et al., 1980; Spielberger, et al., 1983) consists of twenty items designed to assess the transitory anxiety responses of subjects at the point of test administration.

Ten of the items elicit anxiety-present responses and ten questions exhibit anxiety-absent properties. The primary emotional states to be manifested on the scale are the presence or absence of feelings of tension, nervousness, worry and apprehension (Spielberger, 1975(b), 1976). Respondents are asked to rate themselves on such items as "I feel tense", "I feel nervous", or "I feel at ease", according to a four point rating scale ("not at all", "somewhat", "moderately so", "very much so"). Low scores indicate states of calmness and serenity, intermediate scores express moderate feelings of tension and apprehension, and high scores are indicative of intense states of fright approaching panic (Spielberger, 1975(b), 1976). Please refer to Table 1 for a list of the twenty A-State items.

TABLE 1
THE STAI (FORM Y) STATE ANXIETY QUESTIONNAIRE

1. I feel calm *
2. I feel secure *
3. I am tense +
4. I feel strained +
5. I feel at ease *
6. I feel upset +
7. I am presently worrying over possible misfortunes +
8. I feel satisfied *
9. I feel frightened +
10. I feel comfortable *
11. I feel self-confident *
12. I feel nervous +
13. I am jittery +
14. I feel indecisive +
15. I am relaxed *
16. I feel content *
17. I am worried +
18. I feel confused +
19. I feel steady *
20. I feel pleasant *

* Anxiety-absent items + Anxiety-present items

From Spielberger, et al., 1983:37

Since state anxiety is transitory and varies over time the inventory is constructed to be brief, as a long test may be less sensitive to anxiety fluctuations within a changing environment (Spielberger, 1972(a), 1976). Instructions to respondents are succinct, wherein subjects are requested to

base their answers on "how you feel right now". Administration experience with the scale suggests that adolescent and adult subjects of at least dull-normal intellectual capacity are able to describe their present emotional state (Spielberger, 1975(b)). In addition, the questionnaire can be completed by subjects with a reading level below the sixth grade (Spielberger, et al., 1983).

Validity criteria for the A-State scale included measures of construct validity, where items retained for the instrument revealed higher means for "a priori" stressful situations than for neutral or relaxed situations (Spielberger, 1972(a), 1975(b), 1976). Internal consistency was evaluated through item-remainder correlations and Cronbach alpha coefficients of reliability. Item-remainder medians ranged from .49 to .65 and alpha coefficients ranged from .89 to .94 (Spielberger, 1972(a), 1975(b), 1976; Spielberger, et al., 1980, 1983). An evaluation of the A-State scale by Nesselroade and Bartsch (1977), utilizing a factor analysis procedure, indicated a test-retest stability coefficient of .68 and an average internal consistency reliability coefficient of .81.

The Correctional Institutions Environment Scale

The instrument selected to measure social environment at Headingley is the **Correctional Institutions Environment Scale** developed by Rudolf Moos and his colleagues (Moos,

1968, 1970, 1975, 1987; Wenk & Moos, 1972). The CIES is similar to eight other social climate scales designed by Moos to describe and assess specific social milieu, but it is based on data obtained from inmate respondents in correctional environments (Moos, 1975). Inclusion of the items constituting the CIES was guided by the concept of "environmental press". Respondents are asked to describe the usual patterns of social behaviour and the characteristic demands or features of their particular institution. The current scale emerged from a process of correlational analysis to determine validity in accordance with three primary criteria: items should discriminate among correctional programmes or units, items should not be characteristic of extreme units only, and items should not correlate significantly with the Marlowe-Crowne Social Desirability Scale (Moos, 1968, 1974(b), 1975; Wenk & Moos, 1972).

The CIES is composed of nine subscales or dimensions, each identifying an environmental press variable, and is consistent with Moos's theory of correctional social climates. "Relationship" dimensions include "Involvement", "Support", and "Expressiveness". "Personal Development" dimensions consist of "Autonomy", "Practical Orientation", and "Personal Problem Orientation". Lastly, "System Maintenance" dimensions assess "Order and Organization", "Clarity", and "Staff Control". Ten questions comprise each of the nine social climate subscales for an instrument total-

ing 90 items (see Table 2). Subjects respond to questions according to a "true/false" procedure. Items are arranged randomly throughout the questionnaire and are scored by utilizing a transparent template key. Raw scores are converted to standard scores by referring to a conversion table reproduced in the test manual (Moos, 1987).

Data for the CIES normative sample was obtained from 3,151 adult males in 51 correctional units throughout the United States. The represented units included a wide array of living modes, such as dormitories, cell blocks, vocational farms, psychiatric treatment units, and training centres. The sample data was analyzed to determine the validity of the nine subscales (Moos, 1974(b), 1975, 1987). Item-to-subscale correlations ranged from .38 for "Clarity" to .50 for "Involvement" (mean .46). Internal consistencies for the scales ranged from moderate for expressiveness (.56) to high for "Staff Control" (.75) with a mean of .66. Subscale intercorrelations were generally low for the sample with only a few of the 72 intercorrelations as high as .40 or .50 for the juvenile sample, accounting for 16% to 25% of the variance. Intercorrelations for the adult male sample were somewhat higher, indicating a relative lack of differentiation within adult prison programmes when compared to juvenile facilities (Moos, 1975, 1987).

Test-retest reliability was calculated for each subscale and ranged from .65 for "Support" to .80 for "Autono-

TABLE 2
CIES DIMENSION AND SUBSCALE DESCRIPTIONS

Relationship Dimensions

- | | |
|-------------------|---|
| 1. Involvement | How active residents are in the day-to-day functioning of the programme.
Sample Statement: Residents on this Unit care about each other. |
| 2. Support | The extent to which residents are encouraged to help and support other residents; how supportive the staff is toward residents.
Sample Statement: Staff help new residents get acquainted on the unit. |
| 3. Expressiveness | How much the programme encourages the open expression of feelings by residents and staff.
Sample Statement: On this unit staff think it is healthy to argue. |

Personal Development Dimensions

- | | |
|------------------------------------|--|
| 4. Autonomy | The extent to which residents are encouraged to take initiative in planning activities and to take leadership in the unit.
Sample Statement: The staff act on resident suggestions. |
| 5. Practical
Orientation | The degree to which residents learn practical skills and are prepared for release from the programme.
Sample Statement: Residents here are expected to work toward their goals. |
| 6. Personal Problem
Orientation | The extent to which residents are encouraged to understand their personal problems and feelings.
Sample Statement: Residents are expected to share their personal problems with each other. |

System Maintenance Dimensions

- | | |
|------------------------------|--|
| 7. Order and
Organization | How important order and organization are in the programme. |
|------------------------------|--|

Sample Statement: The staff make sure the unit is always neat.

8. Clarity

The extent to which residents know what to expect in the day-to-day routine of the programme and the explicitness of programme rules and procedures.

Sample Statement: If a resident breaks a rule he knows what will happen to him.

9. Staff Control

The degree to which the staff use measures to keep residents under necessary controls.

Sample Statement: All decisions about the unit are made by the staff and not by the residents.

*From Moos, 1987:2

my". To test for the stability of the CIES, samples were obtained from stable unit programmes at one week, one month, and two year intervals. Analysis with Haggard's interclass correlation resulted in scores of .94, .95, and .96 for each sample unit respectively. The sensitivity of the CIES to programme change was determined by assessing thirteen correctional units in which programme changes were introduced before and after implementation. The average interclass correlation across the thirteen units was .37. Moos (1975:45) concluded from his analysis that

the CIES profile is stable when the program is stable; the profile is sensitive to program change when change occurs.

Programme stability measurements remained relatively constant in spite of changing inmate and staff populations. Moos (1975, 1987) suggested that the CIES is a measure essentially independent of background characteristics of inmate respondents. He reported that correlations between age and length of stay and the nine subscales exceeded .20 on only two occasions. Wenk and Halatyn (1973) examined correlations between the CIES subscales and age, length of sentence, time incarcerated, and frequency of incarceration, and indicated that only two of the 36 correlations were above the .20 level. Rosenfield and Linn (1976) observed no significant relationships between the CIES and several attitudinal indicators related to imprisonment and life in the community.

Finally, Moos (1987) investigated the effect of respondents' tendencies to answer items in a socially desirable direction on the CIES subscales. Correlational analysis of Marlowe-Crowne Social Desirability Scale scores and CIES scores produced one correlation exceeding .20 for inmate subjects ("Order and Organization"). None of the relationships accounted for more than 10% of the variance in subscale scores.

Since its introduction, the CIES has been used extensively to assess inmate perceptions of the social environments of prisons. Duffee (1975, 1980), for example, reported that the CIES discriminates significantly between

correctional institutions organized on the basis of restraint, reform, rehabilitation, or reintegration policy structures. Prisons with a rehabilitative policy approach were perceived by inmates to be higher on "relationship" and "personal development" dimensions, while restraint-oriented institutions were perceived to emphasize "system maintenance" dimensions. Jesness (1975) compared the perceived effectiveness of the implementation of a behaviour modification treatment programme in one prison with the introduction of a transactional analysis programme in another. A pre-test-posttest analysis using the CIES resulted in significantly more positive evaluations of the transactional analysis programme by both inmates and staff. Ray, et al., (1982) reported that CIES profiles in a large correctional institution indicated that social density contributed to social disorganization to a greater degree than spatial density. Finally, Waters (1980) discovered that the CIES outcomes in a large maximum security prison were much less positive than expected of an apparently treatment-oriented programme.

DATA COLLECTION PROCEDURE

The collection of data for the study proceeded in accordance with a "cross-sectional" time interval format (Babbie, 1986). Cross-sectional research designs focus on a single time frame; the sample at Headingley was drawn from sentenced inmates located in the medium security main institution, minimum security annexes, and Bannock Point Camp within a one month period. Each subject group was tested on one occasion only. This design provides a "snapshot" of the institution in terms of inmate perceptions, but is limited in that inferences based on the data are confined to the time period in which the tests were administered.

Administration of the testing sessions proceeded according to the assigned location of each inmate group. In the main institution two cell blocks or dormitories (maximum 36 inmates) were called to the test site for each session. Annex and camp inmates were tested in each of their locations as single groups. The main building group was tested within one day to minimize the potential for communication between inmates regarding the content of the questionnaires.

Participation in the study was voluntary and inmates were so informed explicitly. Prior to the commencement of each test administration, a written statement (see Appendix A) was read aloud by the researcher advising that subjects could withdraw at any point before or during the testing.

The statement included the purpose of the testing (Master's Thesis research), and a clear distinction was made between the role of the researcher as a graduate student and as a staff member of the institution. Subjects were advised that responses were to be anonymous and confidential, although the general outcome of all tests would be shared with interested inmates and staff.

Total N for the sample was 121, or slightly less than 50% of the sentenced inmate population at Headingley in August, 1988. Within the main institution, 70 inmates agreed to complete the questionnaires from an approximate total of 150. The sample sizes for Annexes "A" and "B" were 22 and 20 respectively, out of approximate totals of 50 inmates in each annex. Only nine of twenty inmates at Ban-nock Point Camp agreed to participate in the study. Ten test packages from the main institution and five from the annexes were discarded due to excessive missing data or spoiled tests. Final N for the study was 105 (main building, N=60; Annex A, N=18; Annex B, N=18; Camp, N=9).

There are a number of potential explanations for the relatively low response rate. Most obvious is the fact that inmates are involuntary detainees and tend to be quite suspicious of any evaluative process. In addition, the status of the researcher as a middle manager in the institution may have been a factor. Main building response may also have been affected by an incident during the evening prior to the

testing, in which an entire dormitory had been placed on disciplinary charge. In the final analysis, the explicit emphasis on the voluntary nature of the study and the length of the test package may have affected the extent of inmate participation.

Each test package contained the A-State inventory of the State-Trait Anxiety Inventory, the Correctional Institutions Environment Scale (Form R), and a short descriptive data form requesting date, living location, date of admission, and date of release. The average time period to complete the questionnaires ranged from thirty to forty-five minutes.

Instructions for completion of the questionnaires (see Appendix B) were read aloud by the test administrator. For the A-State inventory, it was decided to vary the printed instruction from "indicate how you feel right now" to "indicate how you felt today". This procedure was undertaken to minimize possible test anxiety among a group of subjects who were institutionalized involuntarily. Such a modification is consistent with the recommendation of Spielberger (1977, 1983) that the use of the A-State inventory for research purposes be guided by instructions that focus on a particular time frame.

Simple clarification of word meanings contained in the questionnaires were provided. Indecisive respondents were

assisted with answers only by encouraging them to attempt the question. If respondents encountered problems answering the true/false questions on the CIES, they were advised to answer "true" to an item that is mostly true of their social environment, or "false" when a question was false most of the time. As a last resort, subjects were informed to guess the response rather than leave it blank (Moos, 1974(b), 1987).

DATA ANALYSIS PROCEDURE

In summary, two primary variables were identified in the hypothesis: state anxiety and social climate as they relate to a correctional institution. State anxiety is a transitory emotional state consisting of feelings of tension, apprehension and worry resulting in arousal of the central nervous system. The construct of state anxiety is to be measured by the A-State scale of the State-Trait Anxiety Inventory developed by Spielberger. The purpose of measuring state anxiety at Headingley is to assess the potential effects on inmate anxiety responses of perceptions of a specified group of potential social environmental stressors. These environmental variables have been characterized by Moos as "social climate dimensions", and are viewed as the central descriptors of a prison's social environment. The measurement of inmate perceptions of Headingley's social climate is operationalized through the administration of Moos's Correctional Institutions Environment Scale. It is hypothesized that inmate state anxiety responses elevate as negative inmate perceptions of the institutional social climate also increase. Inversely, state anxiety responses are expected to exhibit lower levels when positive inmate evaluations of the prison's social climate are evident.

Analysis of other research (e.g., Anderson & Pettigrew, 1985; Gubernachuk, 1981) suggests that at least two inter-

vening variables impact on the relationship between inmate state anxiety responses and social climate perceptions. These studies have indicated that stress responses such as anxiety vary with institutional living location and security level. Gubernachuk (1981), for instance, reported that no significant differences were apparent between cell block and dormitory living modes within medium security areas of Headingley. Higher levels of state anxiety were observed, however, in medium security areas of the institution relative to A-State scores in the minimum security annexes and work camp. Lower A-State scores were obtained in the minimum security areas regardless of the fact that the two annexes at HCI are organized into three large dormitories housing over twenty inmates each. Should similar results occur in the present study, effects on state anxiety responses other than social or spatial density must be considered.

The variable of "time" has also appeared to impact on inmate state anxiety in prior studies; specifically, the amount of time served of a sentence. Ruback. et al., (1986) reported that inmates who had served a significant portion of their terms were less anxious and perceived more control over their environment than inmates recently admitted. Similarly, Gubernachuk (1981) found that inmates at Headingley exhibited elevated state anxiety scores within the first month of incarceration, but declining anxiety scores at subsequent intervals. No statistically significant differ-

ences were apparent according to the length of sentence imposed by the Courts. As noted previously, the CIES measure seems independent of variables such as sentence length, but Rosenfield and Linn (1976) observed statistically significant decreases in the CIES dimension of "Involvement" after inmates had been incarcerated for at least ten weeks.

The issues of institutional living location and point of incarceration are viewed, therefore, as potential influences on the relationship between state anxiety and the social climate variables.

In summary, a variable list for the study includes: test scores for the state anxiety inventory; test scores for the nine CIES subscales of involvement, support, expressiveness, autonomy, practical orientation, personal problem orientation, order and organization, clarity, and staff control; the location variables of main building cell blocks, dormitories, Reception/Intake units, Annex "A", Annex "B", and Bannock Point Camp. The variable of "point of incarceration" is defined as the time served in the institution prior to testing in August, 1988. Time served is divided into intervals of date of admission to the institution prior to testing: admission point to thirty days, thirty to sixty days, three to eight months, and over eight months. The results were compared to the length of sentence imposed on each inmate to determine potential differences in state anxiety and social climate perceptions among shorter, moderate, and longer term subjects.

A number of the questionnaires contained some items which were not answered by respondents. Most frequently, only a few of the questions were left blank on the tests and therefore, did not invalidate the entire questionnaire. However, the computer analysis program applied to the data "rejected" entire cases which may have contained only one missing answer. To overcome this problem, the mean score for a specific test item was calculated for all respondents. These "cell means" for a particular question were then inserted at the point where missing items occurred on a respondent's questionnaire (Babbie, 1986).

RESULTS

SAMPLE CHARACTERISTICS AND GROUP MEANS

Total valid cases for the study sample was 105. Of this number, 60 of the subjects were housed in the main institution, 18 in Annex A, 18 in Annex B, and 9 at Bannock Point Camp. The average sentence length for the total sample group was 12.434 months (mode:6 months; median:12 months). In terms of duration of incarceration at Headingley, 13 inmates had served at least 8 months, 40 had served between 3 and 8 months, 26 between 30 and 60 days, and 25 inmates had served less than 30 days.

The sample means for the state anxiety (A-State) inventory according to institutional location are presented on Table 3. One-way analysis of variance (with location as independent variable) was applied to the A-State group responses to examine differences between the group mean scores.¹ The Scheffe test of statistical significance for multiple group comparisons was selected for this analytical procedure. The Scheffe test is conservative as it requires larger differences between means to establish significance (Norusis, 1985). In addition, the Scheffe method is considered an appropriate test of difference for groups with unequal population sizes (Verneson, et al., 1983). As can be seen on Table 3, state anxiety scores did not exhibit statistically significant differences between location

¹ Due to the very low inmate response rates in some blocks and dormitories, general population cell blocks and dormitories were "collapsed" into one location labelled "main institution".

TABLE 3
STATE ANXIETY MEAN SCORES BY LOCATION

LOCATION	N	MEAN	SD
MAIN INSTITUTION	21	48.19	12.61
RECEPTION/INTAKE	16	43.63	8.15
PROTECTIVE CUSTODY	19	43.74	12.60
ANNEX A	18	46.67	11.17
ANNEX B	18	44.11	13.12

TOTAL N 92

** NO STATISTICALLY SIGNIFICANT DIFFERENCES AT THE
.05 LEVEL OR LESS FOR THIS GROUP COMPARISON.

groups in the institution.²

State anxiety means for the Reception/Intake and Protective Custody areas within the main institution are included in Table 3. The argument for the inclusion of these units in the analyses is based on the presumed stress-inducing aspects of the areas: Reception/Intake house newly admitted inmates and Protective Custody holds inmates unable or unwilling to live in general population. The Intake area inmates have spent only hours in the institution, although it should be noted that many of these prisoners are recidivists quite familiar with the environment at Headingley.

² Bannock Point Camp was not included in the location comparisons due to its small sample size (N=9 of 20 total), although it was included in analyses of the total sample.

Inmates in the Reception unit have been sentenced to six months or more and await formal classification and placement in assigned living locations. The Protective Custody area houses inmates incarcerated for sexual offences, victims of violence at the hands of other inmates, or those who harbour subjective feelings of risk should they remain in general population.

It seems reasonable to assume, therefore, that these inmate groups would be subjected to higher anxiety levels than prisoners in other locations. As indicated on Table 3, however, these units did not show statistically significant differences in A-State means, compared with the other locations, according to the Scheffe test.

A-State means were also calculated for the variable of "date of admission". This variable was subdivided into four categories: inmates admitted within the last 30 days, between 30 and 90 days, between 3 and 8 months, and over 8 months. The categories are intended to delimit the sentence time served immediately prior to the testing period in late August, 1988. Sample breakdown and state anxiety means are listed in Table 4. No statistically significant differences between these categories for state anxiety were apparent at the .05 level according to one-way analysis of variance.

Mean score comparisons for the Correctional Institutions Environment Scale data by institutional location are

TABLE 4
STATE ANXIETY MEAN SCORES BY DATE OF ADMISSION

DATE OF ADMISSION	N	MEAN	SD
30 DAYS OR LESS	25	45.28	9.83
30 TO 90 DAYS	27	43.37	13.79
3 TO 8 MONTHS	40	45.60	10.31
OVER 8 MONTHS	13	45.85	12.95

TOTAL N 105

** NO STATISTICALLY SIGNIFICANT DIFFERENCES AT THE
.05 LEVEL OR LESS FOR THIS GROUP COMPARISON.

shown on Table 5. Raw scores on the questionnaires have been converted to standard scores in accordance with the values contained in the test manual (Moos, 1987). As indicated on Table 5, only the CIES subscale of order and organization exhibited statistical significance at the .05 level for the Scheffe procedure within one-way analysis of variance (F-ratio: 3.597; F-probability: .009; df: 4 (between groups), 87 (within groups), 91 total df). For this social climate subscale, differences were significant between the minimum security units of Annex A and Annex B alone. Order and organization in Annex B was perceived by inmates to be much more highly emphasized (by almost 20 points) than in Annex A. That is, Annex B residents viewed their unit as showing substantially greater concern for the overall order

and housekeeping of the area than did Annex A inmates toward their own unit.

TABLE 5
CIES MEAN SCORES BY INSTITUTIONAL LOCATION

CIES	MAIN	P.C.	R/I	A.A.	A.B.		
	MEAN	MEAN	MEAN	MEAN	MEAN	F	F-PROB.
	SD	SD	SD	SD	SD		
INVOLVE.	46.47 12.71	48.32 7.92	45.88 14.21	37.55 21.75	47.00 13.96	1.55	.195
SUPPORT	43.57 16.42	45.42 22.08	42.75 18.44	34.28 22.91	42.33 21.24	.821	.516
EXPRESS.	50.05 7.35	51.74 14.27	50.38 7.04	39.17 18.76	49.83 14.81	2.72	.035
AUTONOMY	50.76 6.04	53.68 7.30	47.38 19.38	39.94 22.58	51.72 15.17	2.33	.062
PRAC.OR.	39.48 7.99	44.89 10.07	43.19 7.20	39.11 7.57	45.17 8.44	2.29	.066
P.P.O.	48.19 4.98	49.89 7.33	49.19 7.34	44.94 12.09	52.00 8.91	1.70	.157
OR.&ORG.	51.86 6.70	51.16 15.72	47.13 19.34	37.56 25.44	56.89 7.58	3.60	.009 **
CLARITY	50.48 7.00	51.05 14.60	51.50 16.48	52.72 7.61	58.06 7.46	1.40	.242
STAFF C.	52.24 6.99	50.89 7.34	50.44 7.47	54.33 5.66	50.06 8.47	1.04	.393
	N=21	N=19	N=16	N=18	N=18	TOTAL=92	

NB: INVOLVE.-INVOLVEMENT, EXPRESS.-EXPRESSIVENESS, PRAC.OR.-PRACTICAL ORIENTATION, P.P.O.-PERSONAL PROBLEM ORIENTATION, OR.&ORG.-ORDER AND ORGANIZATION, STAFF C.-STAFF CONTROL.

* STANDARD DEVIATION

** SIGNIFICANT AT .05 OR LESS BY SCHEFFE METHOD FOR COMPARISON BETWEEN ANNEX A AND ANNEX B GROUPS.

Of particular note on Table 5, several values in the standard deviation columns of involvement, support, expressiveness, autonomy, and order and organization are very elevated. These unusually high standard deviations are the result of some subjects scoring zero on an entire subscale. The minimum and maximum ranges for some of the subscales, as a consequence, are extremely wide. Annex A and, to a lesser extent, Annex B are the groups most frequently exhibiting high deviations from the means. Zero scores on one or more of the subscales does not point to invalid questionnaires. Instead, visual examination of the tests indicated that some inmates viewed their units in very negative terms in the context of the CIES. For instance, four inmates in Annex A perceived their unit as not emphasizing the dimension of involvement at all, as measured by the CIES. These responses to the tests were checked for randomness and answer patterns which may have indicated a lack of validity. Visual assessment of the questionnaires revealed no obvious patterns of dishonesty or random completion of the answers.

Table 5 also presents data for the Protective Custody and Reception/Intake units. These groups were drawn from the larger main institution sample for the purposes of comparison. P.C. and R/I were also examined in view of the previous argument that these inmate groups would be expected to experience higher levels of state anxiety as a result of their unique status in the prison. It would have seemed

possible to predict that such elevated stress levels would have contributed to more negative perceptions of the institutional social climate among these inmates than other groups. As can be seen, however, neither group indicated statistically significant differences with any of the other groups on the CIES measures.

The CIES scores were also compared for each category of the variable of date of admission. The results are reproduced on Table 6. As with the variable of location, only one of the CIES subscales generated significant group differences for date of admission, in this case the dimension of clarity. Again using the Scheffe test, inmates having served more than eight months showed a statistically significant difference with those who had served between 30 and 90 days (F -ratio: 4.096; F -probability: .009; df : 3 (between groups), 101 (within groups), 104 total df). The subscale of clarity is intended to measure the extent to which inmates know what to expect in their unit's routine, and the explicitness of programme rules and procedures. The mean for the 30 to 90 day group was over 20 points higher than the mean for the over 8 month group, a result apparently indicative of a much stronger perception of rule clarity among a group of inmates who had been in the institution for under three months, than among inmates incarcerated for a period of at least eight months!

TABLE 6
CIES MEAN SCORES BY DATE OF ADMISSION

CIES	< 30 D	30-90 D	3-8 M	> 8 M		
	MEAN	MEAN	MEAN	MEAN	F	F-PROB.
	SD	SD	SD	SD		
	* SD	SD	SD	SD		
INVOLVE.	40.16 21.62	46.89 15.61	47.65 10.55	47.23 9.15	1.45	.232
SUPPORT	36.60 24.31	45.22 15.33	45.50 19.72	41.00 19.47	1.22	.306
EXPRESS.	47.76 12.40	48.33 16.04	50.20 14.44	49.85 5.46	.208	.891
AUTONOMY	49.40 15.95	43.00 22.16	52.45 10.82	50.85 5.58	2.11	.103
PRAC.OR.	43.44 8.38	40.63 8.74	44.18 8.51	41.31 10.93	1.03	.385
P.P.O.	49.00 8.04	47.67 12.59	50.75 7.82	50.08 4.80	.661	.578
OR.&ORG.	45.24 21.16	49.85 20.26	51.38 11.57	48.54 15.99	.678	.567
CLARITY	50.56 13.03	58.11 8.58	53.45 6.99	46.92 16.13	4.10	.009 **
STAFF C.	51.04 7.14	50.81 8.05	51.68 6.46	53.15 6.52	.365	.778
	N=25	N=27	N=40	N=13	TOTAL=105	

NB: INVOLVE.-INVOLVEMENT, EXPRESS.-EXPRESSIVENESS, PRAC.OR.-PRACTICAL ORIENTATION, P.P.O.-PERSONAL PROBLEM ORIENTATION, OR.&ORG.-ORDER AND ORGANIZATION, STAFF C.-STAFF CONTROL.

* STANDARD DEVIATION

** SIGNIFICANT AT .05 OR LESS BY SCHEFFE METHOD FOR COMPARISON BETWEEN 30 TO 90 DAYS AND OVER 8 MONTHS GROUPS.

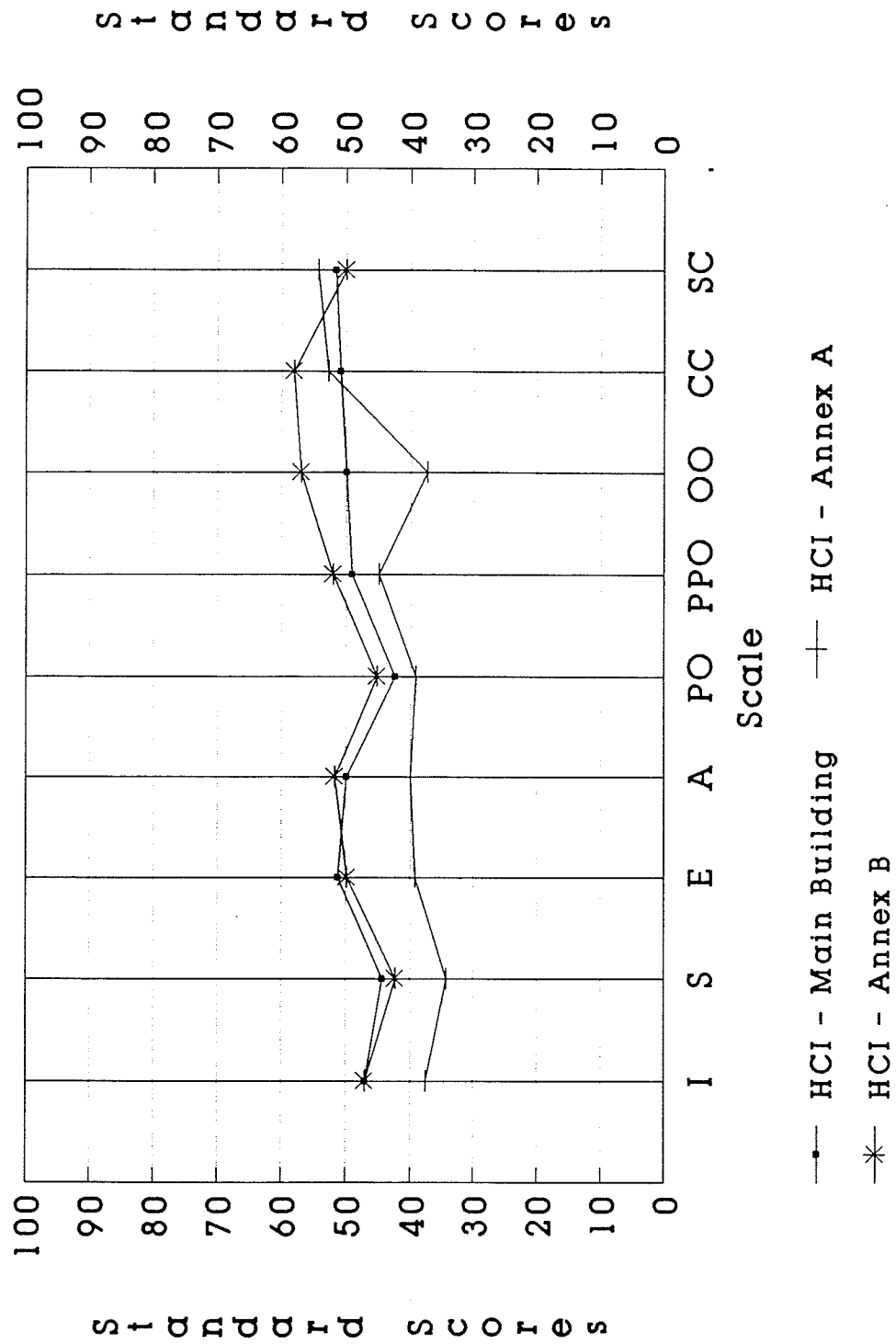
For comparative purposes, the CIES scores of inmates at Headingley can be graphically illustrated in relation to the "normative" sample developed by Moos (1987). The normative sample was collected from 51 correctional units in U.S. prisons with 3,151 inmates participating (Moos, 1987). Figures 1 and 2 compare the profiles of different inmate living locations at Headingley and include the graphic profile of the U.S. sample means. It will be noted that the normative group clusters very closely around a standard score of 50 for all subscales. Scores substantially above the 50 line can be viewed as "positive" perceptions of the unit's social climate (with the possible exception of staff control), and scores markedly below the 50 line can be interpreted as "negative" inmate perceptions of a unit's social climate. Abbreviations for the social climate subscales on Figures 1 and 2 are as follows:

- I -- Involvement
- S -- Support
- E -- Expressiveness
- A -- Autonomy
- PO -- Practical Orientation
- PPO -- Personal Problem Orientation
- OO -- Order and Organization
- CC -- Clarity
- SC -- Staff Control

The CIES scores of inmates at Headingley represented on Figures 1 and 2 indicate relatively minor variation from the norm line of 50, although Annexes A and B showed statistically significant differences on the subscale of order and organization. As noted previously, no other location comparisons generated statistically significant differences for the CIES subscales. Figure 1 also presents the profile for the "main building", which represents the total main institution sample of 60 inmates.

Figure 1: CIES PROFILES FOR MAIN INST., ANNEX A & ANNEX B

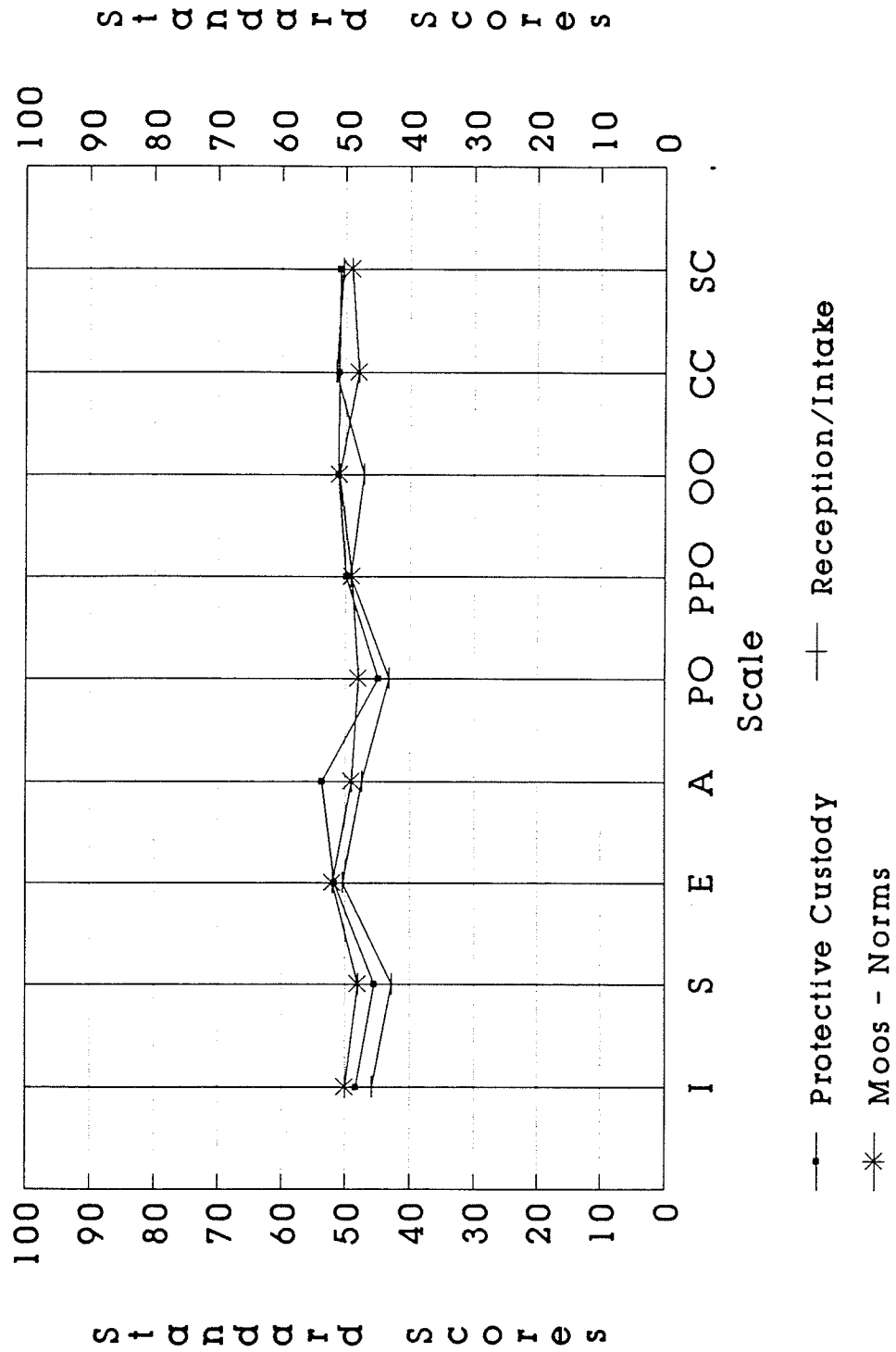
Social Climate Scale Profile (CIES)



Scale Form Used: R

Figure 2: CIES PROFILES OF P.C., RA/INT. AND MOOS NORMS

Social Climate Scale Profile (CIES)



As a final group comparison, the CIES scores were compared according to the length of sentences of the sample subjects. Sentences were grouped into categories of one day to 6 months, 7 to 12 months, 13 to 18 months, and 19 to 24 months. The one-way analysis of variance procedure was applied to the four sentence length groups. According to the Scheffe test, no statistically significant differences were evident between any of these subpopulations.

STATE ANXIETY AND CORRECTIONAL SOCIAL CLIMATE

To test the main hypothesis that state anxiety among inmates at Headingley varied in relation to their perceptions of institutional social climate, multiple linear regression analyses were applied to the data. The model developed for the regression analyses tested state anxiety as the dependent variable with the nine social climate subscales of the CIES as the independent predictor variables. For some tests, the variables of institutional location and date of admission were included as controls. Separate regression procedures were conducted for the entire sample, for the main institution sample alone, and for each of the minimum security Annexes A and B.

Regression models were constructed for A-State and the CIES using two equation computing methods: "forward" and "stepwise" (Norusis, 1985; SPSS-X, 1983). Forward selection enters variables into the regression equation only if they

meet the criterion of "probability of F-to-enter". The SPSS-X default criterion is .05 or less for the F test. Variables are entered into the equation depending upon the most significant F (F is calculated by dividing mean square regression by mean square residual), in descending order of significant F-scores.

Stepwise selection of variables is the most commonly used method for building regression equations (Norusis, 1985). In the same manner as forward selection, the first variable is selected on the basis of "probability of F-to-enter", but as each variable not in the equation is examined for entry, variables already in the equation are examined for removal. The criterion for removal is based on the "probability of F-to-remove". The SPSS-X default removal value of .10 was used in the analysis.

The regression models for the state anxiety and social climate variables produced identical results for both the forward and stepwise methods. Only the social climate subscale of involvement correlated with state anxiety on any of the regression analyses. For the total H.C.I. sample (N=105), involvement displayed a weak negative correlation with state anxiety. The Multiple R coefficient was .2038, the adjusted R-squared was .0323, and the F score was 4.509 with the significance of F at the .036 level. "Adjusted R-squared" attempts to correct the "optimistic" bias of R-squared coefficient (Norusis, 1985). The F test deter-

mines how well the regression model fits the data, and a significant F (less than .05) allows rejection of the hypothesis that $R\text{-squared} = 0$ (Norusis, 1985). Although weak, some linearity between state anxiety and the social climate variable of involvement appears within the total H.C.I. sample. That is, state anxiety seems to decrease as involvement increases, and inversely, state anxiety appears to increase slightly as involvement decreases. Involvement attempts to measure how active inmates are in the day-to-day functioning of the unit, including the development of group spirit and pride in the programme. Correlation coefficients

TABLE 7
CORRELATION COEFFICIENTS FOR H.C.I. TOTAL SAMPLE

HEADINGLEY SAMPLE (N = 105)										
	ASTATE	I	S	E	A	PO	PPO	OO	C	SC
ASTATE	1.00	-.20	-.10	-.14	-.11	-.03	.01	-.08	-.04	.14
I **	-.20	1.00	.58	.48	.41	.40	.27	.39	.44	-.31
S	-.10	.58	1.00	.32	.27	.37	.38	.43	.42	-.30
E	-.14	.48	.32	1.00	.37	.22	.33	.28	.18	-.32
A	-.11	.41	.27	.37	1.00	.40	.27	.41	.15	-.27
PO	-.03	.40	.37	.22	.40	1.00	.41	.39	.42	-.18
PPO	.01	.27	.38	.33	.27	.41	1.00	.20	.20	-.25
OO	-.08	.39	.43	.28	.40	.39	.20	1.00	.41	-.26
C	-.04	.44	.42	.18	.15	.42	.20	.41	1.00	-.27
SC	.14	-.31	-.30	-.32	-.27	-.18	-.25	-.26	-.27	1.00

** CORRELATION OF INVOLVEMENT WITH THE DEPENDENT VARIABLE
ASTATE SIGNIFICANT AT .05 LEVEL OR LESS (SIG. OF $F = .036$)

for the H.C.I. sample are reproduced on Table 7.

TABLE 8
CORRELATION COEFFICIENTS FOR ANNEX B SUBGROUP

ANNEX B SAMPLE (N = 18)										
	ASTATE	I	S	E	A	PO	PPO	OO	C	SC
ASTATE	1.00	-.62	-.39	-.56	-.55	-.18	-.37	-.47	-.44	.25
I **	-.62	1.00	.36	.90	.90	.25	.16	.58	.53	-.44
S	-.39	.36	1.00	.22	.28	.38	.48	.41	.47	-.38
E	-.56	.90	.22	1.00	.91	.15	.07	.64	.45	-.46
A	-.55	.90	.28	.91	1.00	.40	.21	.56	.43	-.44
PO	-.18	.25	.38	.15	.40	1.00	.50	.29	.14	-.10
PPO	-.37	.16	.48	.07	.21	.50	1.00	.24	.10	-.13
OO	-.47	.58	.41	.64	.56	.29	.24	1.00	.62	-.68
C	-.44	.53	.47	.45	.43	.14	.10	.62	1.00	-.64
SC	.25	-.44	-.38	-.46	-.44	-.10	-.13	-.68	-.64	1.00

** CORRELATION OF INVOLVEMENT WITH THE DEPENDENT VARIABLE ASTATE
SIGNIFICANT AT .05 LEVEL OR LESS (SIG. OF F = .007)

Correlation coefficients are displayed on Table 8 for the Annex B minimum security unit subpopulation. As can be noted, the CIES subscale of involvement again exhibited a statistically significant negative correlation with state anxiety. In this case, however, the relationship was stronger. The correlation coefficient was $-.615$, adjusted R-squared was $-.340$, the F test was 9.749 , and the significance of F was at the $.007$ level. At least for the relationship between state anxiety and involvement in Annex B, relatively substantial linearity appears to exist. Restated, state anxiety increases as involvement decreases and, inversely, involvement scores increase as state anxiety scores decrease.

The regression models indicated no statistically significant relationships between state anxiety and the other eight CIES variables. This absence of relationship held for the analyses of the main institution and Annex A subpopulations, and when date of admission was included in the models.

One notable outcome of the regression analysis was the high intercorrelations between a number of CIES subscales. The regression for Annex B showed intercorrelations between involvement and expressiveness ($r = .90$), and involvement with autonomy ($r = .90$). Expressiveness and autonomy also intercorrelated at the $r = .91$ level. In addition, order and organization intercorrelated with the subscale of clarity ($r = .62$) and staff control ($r = -.68$). Similarly, the total H.C.I. sample regression produced a relatively high intercorrelation between the subscales of involvement and support ($r = .58$). These results may illustrate the difficulty with developing measures that truly reflect discrete concepts. Moreover, the comparatively small H.C.I. sample size and, the smaller yet, Annex B sample may contribute to the increase of degree of intercorrelation. These subscale intercorrelations can be assessed in relation to those reported by Moos (1987), where an inmate sample size of $N = 713$ produced some subscale to subscale correlations above .50 (involvement with support: .53; support with clarity: .51).

DISCUSSION AND CONCLUSIONS

Overall results of the study indicate that, in general, the CIES measures did not predict changes in state anxiety among the sample inmates. The social climate subscale of involvement showed a weak negative correlation with state anxiety for the entire sample and a somewhat stronger negative relationship with state anxiety in the minimum security unit of Annex B. The mean for involvement in Annex B was not significantly different from the other locations according to the Scheffe multiple group comparison method, but the variable seems to exert a moderating influence on state anxiety at least in this unit.

While statistically significant, the negative correlation between state anxiety and involvement in the main sample ($N = 105$) is not substantial to the extent that strong conclusions can be drawn regarding the relationship. The absence of relationships between state anxiety and the remaining eight social climate factors suggests that the CIES is not a useful predictor of state anxiety within the context of the study. As a consequence, the main hypothesis that state anxiety varies with inmate perceptions of the prison social climate was not supported by the data. Across most analyses, including those controlling for institutional location and date of admission (time served), state anxiety indicated no statistically significant variation between the test groups, or relationships with eight of the independent CIES variables. At least two possible interpretations can

be identified regarding the general absence of interaction between the dependent state anxiety variable and the CIES scores.

First, it is possible that sampling bias may have impacted on the potential strength of any relationships which may have been within the data. Sample size for the study ($N = 105$) was approximately 40 - 45% of the potentially available subjects. The main institution's general cell blocks and dormitories, in particular, responded at a very low rate (some 35% of potential subjects), possibly compromising any conclusions drawn relative to this group. The balance of the institutional locations responded at a rate of approximately 50%. Given the relatively small N 's in these areas, it is difficult to determine if the respondents are representative of their units. It may be that those inmates who did participate were more compliant than those who refused. As well, it could be stated that the study only reflects the perceptions of inmates who volunteered to complete the questionnaires. There was, nevertheless, no overt evidence that inmates did not complete the tests truthfully.

Second, the results of the data analysis suggest that the theory underlying the hypothesis be re-examined for its adequacy as a tool to explain transactions between state anxiety and the social environment in prison. Stress, and one of its primary manifestations, anxiety, were defined as

transactions between the person and the environment, in which internal or environmental stressors may induce anxiety according to the degree of threat perceived by the person. It was posited that social climate factors, also regarded as transactional with individual emotions, impact on how persons perceive and behave within social settings. To assess the effects of environmental "press", or the tendency of a social environment to meet or impede personal needs satisfaction, the social climate scales were developed for specific settings. It was hypothesized that the Correctional Institutions Environment Scale would predict an inmate's transitory, or state, anxiety according to how threatening or supportive the prison social climate was perceived to be by that person. In other words, positive evaluations of the institutional social climate should result in lowered state anxiety levels, and negative perceptions should result in elevated state anxiety in response to the appraisal of social climate factors as environmental "stressors".

That state anxiety and social climate did not correlate substantively does not obviate the validity of either measure. Both, as other research has described, seem to be valid constructs and have demonstrated reliability over time. However, the CIES may be measuring environmental variables not within the emotional parameters of state anxiety, but with implications for inmate attitudes and behaviour nevertheless. Transactions between the person and the environ-

ment are complex and the precise nature of environmental stressors may be difficult to identify through specific instruments such as the CIES. Possibly many different types of stressors, acting as single factors or in combination, relate to state anxiety. These stressors may include social climate within the prison, population density, personality factors, fear of victimization from staff or other inmates, deprivations of freedom and personal control, and isolation from significant others in the community. An additional source of stress is no doubt the anxiety associated with external issues left in abeyance when the person was incarcerated. Concern over the potential loss of family, employment, financial security, and, in some cases, social status, would be expected to contribute to the development of stress disorders in a number of inmates.

In the data analysis, the social climate subscale of involvement exhibited some degree of relationship to state anxiety. The sense of emotional identification inmates may have with their particular unit, of how involved they feel within a unit or programme, appears to have emerged as a factor related to the mediation of state anxiety. Its significance, apparent even within a comparatively small sample size, may be in its possible primacy as a concept over the other social climate factors in terms of its power to reflect inmate social needs within the prison setting. The relatively strong correlation between state anxiety and

involvement in the Annex B unit may not be an anomaly. The security structure and relationships between staff and inmates tends to be more informal in this area than any other institutional location. At the time of testing, only Annex B had correctional officers assigned full time to the unit. Inmates and staff were more familiar with each other, staff were more accountable on a day-to-day basis, and the opportunities for a sense of involvement on the part of inmates to develop were greater. The combination of these factors, in spite of the lack of statistical significance between involvement scores across all locations, may have resulted in the inverse relationship between state anxiety and involvement.

Other factors present within Headingley's environment were viewed as potential influences on inmate state anxiety and social climate perceptions. These included the security level assigned to inmates (institutional location), the amount of time served prior to testing (date of admission prior to testing), and the length of sentence. It was suggested that security level assignment within the institution could affect state anxiety. State anxiety scores, however, indicated no statistically significant differences between any of the location groups. This outcome is inconsistent with prior research (e.g., Anderson & Pettigrew, 1985; Gubernachuk, 1981), perhaps due to sample bias in the present study. On the other hand, the state anxiety scores

were relatively evenly distributed across the groups. Within the context of this study, the moderate A-state scores for all groups point to a quite homogenous sample in terms of state anxiety. The scores for state anxiety are also comparatively close to the sample from a Florida prison reported by Spielberger (1983), which indicated a mean score of 45.96 with an N of 212. At least for this study, security level did not impact significantly on state anxiety.

Similarly, no statistically significant differences between groups on the variable of date of admission were evident. Means and standard deviations were evenly distributed across the four categories of admission intervals prior to testing. It was posited, based on prior research (Gubernachuk, 1981), that state anxiety would exhibit highest elevations for the group newly admitted to the institution (those who has served 30 days or less). Evidence seemed to conclude that the first month of incarceration was the most stressful for inmates, with state anxiety scores declining over time (Gubernachuk, 1981). This conclusion was not supported by the data in the current study. Again, apart from possible sample bias, the results are marked by apparent homogeneity among the analysis groups. It may have been expected that the under 30 day group, a group including inmates sentenced to prison for the first time, would have at least showed significantly higher state anxiety means than the largest (N = 40) mid-sentence group of 3 to 8

months. To the contrary, both groups indicated almost identical A-State scores. Possibly, the under 30 day group had quickly adapted to their incarceration by the time testing occurred. In addition, recidivists may have been over-represented among the under 30 day category, although data on the number of prior incarcerations at Headingley was not included in the study. While there is no empirical evidence for the effect recidivists may have had on the under 30 day group,³ it may be speculated that they are quite adept at adjusting to prison conditions and, as a result, may have influenced the state anxiety scores in a downward direction.

The CIES subscales, when analyzed alone, exhibited very slight statistically significant variability when controlled for institutional location and date of admission. Only the subscale of order and organization showed substantial differences between the two minimum security units of Annex A and Annex B. The differences in means on this subscale between the two units was almost 20 points. This outcome seemed surprising on a superficial level of analysis. Both units are similar in physical structure, inmate capacity, and security designation. They differ, however, in terms of staff organization and general unit emphasis. Order and organization attempts to measure how important order and organization are in the unit, in terms of how residents look, how staff encourages order, and how much emphasis is

³ During the test administration sessions, the author recognized inmates among the Intake group who had been previously incarcerated at Headingley.

placed on housekeeping. At the time of testing, Annex A was supervised by correctional officers on rotation through the unit. Frequently, staff were in the unit only one day before they were rotated to another location. The staff in Annex B, on the other hand, were mostly assigned unit officers. Visual inspection of the areas showed clear differences in general upkeep and relations between staff and inmates. In the writer's experience, Annex A tended to be more noisy, much less clean, and generally characterized by minimal respect and interaction between staff and inmates. Clearly, Annex A inmates were cognizant of the absence of staff input into maintaining order and basic housekeeping on a day-to-day level.

The analysis of the CIES scores, when controlling for date of admission prior to testing, indicated statistically significant group differences only on the subscale of clarity. In addition, the two groups exhibiting the significant mean differences were the 30 to 90 day group and the over 8 months group. The subscale of clarity refers to the extent inmates know what to expect in day-to-day routine and the explicitness of rules and procedures in the unit. Curiously, the group exhibiting the lowest mean was the over 8 months group, a group expected to be most familiar with rules and procedures. The 30 to 90 day group scored well above the norm line of 50 set by the Moos national sample (1987), and may be reflecting a developing knowledge about

expectations within the prison. The low mean for the over 8 month group is more difficult to explain. It is possible that long term residence within the prison exposes inmates to increasing levels of rule enforcement inconsistencies on the part of staff. Furthermore, this inmate group may have developed a consciousness of differential expectations from line and supervisory staff. That is, institutional policy and procedure may be "modified" as it is transmitted from senior management to line staff, and on to the inmates. Alternatively, sample bias may have affected the results as the over 8 month group was represented by 13 subjects.

The general absence of significant differences on the social climate scale across institutional groupings raises the issue of the "type" of social climate the CIES is measuring at Headingley. The results may be, as noted, highlighting a homogeneity of perceptions among the sample inmates. Although speculative, this homogeneity may also imply that the social climate at Headingley was "stable" at the time of testing. In other words, the sample inmates may have reflected perceptions of the social environment of Headingley as static. Regardless of personal background and attitudes, inmates perhaps viewed the prison social climate as unchanging, moribund, and inflexible toward the treatment of prisoners in spite of their differential needs. The effect could be a social climate viewed in essentially the same manner by the inmates whatever their living location, programme needs, or motivational level.

Moos (1975) concluded that the CIES profile of an institutional social climate is stable when the prison social climate is stable. He adds that the profile is sensitive to programme change when change occurs. Headingley at the time of testing did not fit the description of a unit-oriented or programme-oriented prison. Its internal staff organization was, and remains, based on the traditional paramilitary style, with a monolithic approach to inmate management. Unit consciousness and positive group cohesion are not encouraged among inmates, and interaction between staff and inmates is often actively discouraged beyond the discussion of essential procedural and routine matters. Many of the items contained in the CIES refer to programmes or unit-oriented issues. Programmes at Headingley were not unit-based and few in number in any case. The lack of differentiation on the CIES across locations may be reflective of the organization, itself. It would seem that the inmates in the study perceived the social climate of Headingley in unprogressive and mundane terms; not dissimilar from the normative sample developed by Moos (1987), but also not prioritizing activities beyond essential security and maintenance issues.

If, as it has been suggested, the CIES scores have revealed a static and undifferentiated social environment at Headingley, the instrument's apparent lack of ability to predict state anxiety fluctuations may be attributable to

this phenomenon rather than to a true absence of relationship. In this case, the emergence of the CIES subscale of involvement in association with state anxiety could be anomalous. Some evidence for this position is perhaps present within the regression analysis, which indicated some very substantial intercorrelations between CIES subscales in Annex B, and moderate intercorrelations within the total sample. The question may be asked, if the CIES subscales of expressiveness correlated with involvement at the .90 level, and autonomy intercorrelated with expressiveness and involvement at the .90 level, why did expressiveness and autonomy not also exhibit a significant relationship with state anxiety in Annex B? A related question is, how discrete are the subscale constructs (what concept they claim to measure) if at least three intercorrelate to such an extent? Is sample bias alone capable of producing these correlations, or are they the result of the relatively small sample size?

In conclusion, the value of the STAI-ASTATE inventory and CIES in application to the prisoner population and social environment of Headingley Correctional Institution may be demonstrated if both tests were replicated under modified conditions. These include a much larger sample of the institution's inmate population, ensuring that each location sample is highly representative. The assessment of state anxiety would benefit from replication, particularly, in

view of the very different results in comparison to the last study of anxiety at the prison (Gubernachuk, 1981). The utility of the CIES as an instrument has been demonstrated in other research. Its value for Headingley could emerge as an evaluative tool for new programme initiatives and reorganization strategies. The most applicable use of the CIES may in a test-retest situation, in which treatment and educational programmes are evaluated before and after implementation.

The substantial correlations between some of the CIES subscales is a concern. A much larger sample size is required to test if the intercorrelations hold, or are just anomalies within the study. The CIES has been critically evaluated (e.g. Wright & Boudouris, 1982) as not distinguishing to a satisfactory extent between the nine different social climate dimensions. Intercorrelations have been reported, as well, by Wright and Boudouris (1982). Contrary to the suggestion by these authors that the use of the instrument be "suspended" until validity issues have been clarified, it is contended here that an imperfect instrument, but one with useful evaluative properties, is preferable to no instrument, or one with potentially more serious deficiencies.

The failure of the grouping variables of institutional location (security level) and date of admission (time served prior to testing) to indicate strong influence on state anx-

iety and social climate should be regarded within the context of the data. The results suggest that factors other than security level may contribute to state anxiety. That the minimum security Annexes did not show less anxiety is not necessarily grounds for concern. There is nothing inherently positive in a medium or maximum security unit exhibiting higher stress levels than other areas. Stress disorders require intervention regardless of where they are generated. A serious concern, however, is the possibility that a minimum security area displays aspects of social and physical environments more commonly associated with higher security areas. To a certain extent, this may have occurred at Headingley. State anxiety levels are similar to Spielberger's (1983) sample of inmates from a Federal prison in Florida. As well, state anxiety at H.C.I. is much greater than the norms for the working population (Spielberger, 1983). The lack of statistically significant differences among locations in the institution does not signify that state anxiety is not a concern for the inmates. Nor is it implied that state anxiety does not require examination by administration and staff at the institution.

The lack of differentiation among locations on the CIES is not a minor issue. The fact that minimum security units such as Annex A exhibit little or no difference, in terms of social climate perceptions, with medium security locations indicates a need for a re-evaluation of the prison organiza-

tion. This "homogeneity" of inmate perceptions of the institution's social environment focusses attention on the absence of planned efforts to match programmes and change strategies with inmate needs. It also is indicative of a possible de-emphasis, or lack of prioritization, on how the environment impacts on attitudes. Inmates seem to perceive Headingley as an institution concerned primarily with basic staff control. In other words, a restraint-oriented model of prison organization has been emphasized over other models, such as reintegration.

The statements advanced here remain tentative, and at times speculative, given the weaknesses of the study. The issue of primary importance is the sample size available for analysis. The results of the research, although interesting and instructive, require a substantially increased population to be conclusive. While conditional conclusions can be drawn from the current data, a sample at least 50% larger would have been preferable.

The variable of "time served" could perhaps have been developed into a relatively complex factor computed from date of admission, date of release, and length of sentence. Two of these variables were found to be uninfluential on the dependent and independent variables, but may develop significance within the parameters of a new, more methodologically sound, factor. The complexity of the study, however, required that a more intense examination of the "time" concept be referred to future research.

The study of state anxiety and its linkages with the social climate perceptions of inmates can have important implications for correctional research. In particular, focus may be directed toward other factors in the social environment of prisons and their impact on emotion and behaviour. For example, the nature of interaction between staff and inmates could impact significantly on how inmates view themselves and the prison environment. Similar to such CIES dimensions as involvement, support, and practical orientation, the concept of "dynamic security" may hold important organizational and research benefits. The term refers to the emphasis on staff-inmate interaction as the primary basis for security, and is inclusive of most activities present in prison settings. Dynamic security is fundamentally an approach based on intensive knowledge of inmate behaviours, and it is grounded in mutual respect between staff and inmate. The presence or absence of intensive staff-inmate interaction, and its effects on inmate adjustment, may relate to the degree of stress disorder experienced by inmates, as well as affect social climate perceptions.

Appendix A
WRITTEN PROTOCOL OF CONSENT

Consent Form

You are requested to participate in a research project. I am presently a graduate student at the School of Social Work, the University of Manitoba. The research I am conducting is for academic purposes (Master's Thesis). It is intended to gather information on how inmates feel about themselves and the institution. This study is not related to my duties as Supervisor of Counselling at Headingley Correctional Institution.

Please note that your participation in this research is strictly voluntary. Should you not wish to complete the questionnaires you may withdraw at anytime without any form of penalty. You do not have to write your name on any of the questionnaires. The answers you give are confidential. Questionnaires will not be shared with anyone.

Overall results of the study will be shared with inmates and staff as groups. No feedback on individual test results will be possible.

If you are willing to participate please give your written consent by signing on the line below.

Thank you for your assistance in this project.

B. Sullivan

"I agree to participate in the research project outlined above."

_____ Signature

Appendix B

INSTRUCTIONS FOR THE STAI-ASTATE AND CIES

Directions for the STAI-ASTATE Questionnaire

A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend much time on any one statement but give the answer which seems to describe your present feelings best.

Directions for the CIES

There are 90 statements in this booklet. They are statements about correctional units. You are to decide which of these statements are true of your unit and which are false.

Make all your marks on the separate answer sheet. If you think a statement is true or mostly true of your unit, make an X in the box labeled T (true). If you think the statement is false, or mostly false, make an X in the box labeled F (false).

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