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EVENT APPRAISAL AND COPING STRATEGIES  
PREDICT LEVEL OF EGO DEVELOPMENT

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May, 1994.

A Thesis submitted to the Faculty of Graduate  
Studies and Research in partial fulfilment of the  
requirements of the degree of Doctor of Philosophy  
in Educational Psychology

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## Abstract

Variation in developmental level was examined in a sample of 84 female and male university students. Each participant wrote a brief narrative describing the specific components of a stressful life event that elicited an attribution of threat. The identified components were assessed for level of ego functioning. In addition each participant was administered the Ways of Coping measure and the Washington University Sentence Completion Test. The results suggest that higher levels of ego functioning whether assessed by source of threat or by developmental task could be predicted by the choice of an analytical problem-oriented approach to stress management. Additionally the Event Appraisal measure has been presented as an instrument that introduces a predictive factor to level of ego development in a real-life situation. The results are discussed in light of the need to access the mechanisms that effect threat evaluations and the selection of the coping strategies that emerge as responses.

## Résumé

On a analysé l'écart du niveau de développement chez un échantillon de 84 étudiants d'université des deux sexes. Chaque participant a été invité à rédiger un bref récit décrivant les éléments d'un événement stressant ayant déclenché une attribution de menace. On a évalué les éléments en question pour déterminer le niveau de fonction du Moi. En outre, on a fait subir à chaque participant l'épreuve de mesure des moyens d'adaptation et le test des phrases à compléter de l'Université de Washington. Les résultats portent à croire que des niveaux supérieurs de fonction du Moi, qu'ils soient évalués en fonction de l'origine de la menace ou de la tâche développementale, peuvent être prédits par le choix de la manière analytique de gérer le stress. En outre, la mesure d'évaluation des événements a été présentée comme un instrument qui constitue un facteur prévisionnel du niveau de développement du Moi dans une situation réelle. Les résultats sont analysés en fonction du besoin de solliciter les mécanismes qui affectent les évaluations de la menace et le choix des stratégies d'adaptation qui se présentent comme façons de réagir.

## CHAPTER 1

### EVENT APPRAISAL AND COPING STRATEGIES

#### PREDICT LEVEL OF EGO DEVELOPMENT

##### Current Issues and Controversies

Over the past four decades a great deal of interest has focused on how individuals cope with negative life events. The concept of coping refers to non-automatic strategies for dealing with threat and is intimately associated with stress. Stress is here defined as any internal or environmental condition which exceeds the adaptive resources of the individual (Monat and Lazarus, 1991). Coping refers to the efforts or responses evoked when a stressful situation elicits disturbed affect. The purpose of coping is to manage specific internal and external demands (Lazarus and Folkman, 1984) and is neither dependent upon content nor tied to success. Because the particular strategies available for use develop over time, and similarly because level of ego functioning develops over time, it appeared that the strategies might be related to the level at which the individual ego is functioning. The purpose of the present research is to note if there exist links between the strategies selected to manage stress, which are mediated by event appraisal, and the level at which the ego is functioning.

Efforts at coping include both mastery and adaptation: mastery implies an achievement; adaptation implies a compromise (Coelho, Hamburg and Adams, 1974). Mastery suggests some measure by which the coping process may be evaluated (Lazarus, 1966).

However, not all sources of stress are amenable to mastery (e.g. natural disasters, aging, disease) and emphasizing mastery and problem-solving as the only effective processes of coping minimizes the value of strategies that aim at managing emotional behaviour and maintaining self-esteem by ignoring, accepting or reinterpreting inevitable events. These coping strategies are indeed desirable and mature (Haan, 1977; Lazarus and Folkman, 1984) when used as striving toward compromise in otherwise intolerable situations.

Coping has been studied with particular emphasis on two general approaches. Researchers interested in the study of personality have often confined their investigations to identifying coping styles or dispositions (Katz, Weiner, Gallagher, and Hellman, 1970; Cohen and Lazarus, 1973). Another approach concentrates on observation of the particular strategies used in stressful situations and infers the coping processes these behaviours imply. For example, coping efforts within specific contexts have been observed in studies of grieving (Bowlby, 1961), physical disability, (Plummer, 1990; Revenson and Felton, 1989), chronic illness (Koster and Bergsma, 1990), learned helplessness (Wortman and Brehm, 1975), and examination anticipation (Mechanic, 1962, 1974).

The former approach, traditionally measured by personality tests, is largely dependent for validity on the generality of the traits being assessed and on the ability of the situation to activate behaviours which reflect the traits accurately. Because

many psychological traits, including coping styles, show limited generality (Cohen and Lazarus, 1973) they appear to have little predictive value in a specific situation.

The latter approach, while more time-consuming, appears to offer a richer interpretation of the factors and combinations of factors involved in strategy selection. This approach has supported an abundance of attempts to delineate the variables that mediate the individual's ability to adjust to stressful life events and moderate perception of the event. These variables are the antecedent conditions, including personality traits, that the individual brings to the event and that interact with other conditions to produce an outcome (Folkman and Lazarus, 1991). However little is known about the ways in which the factors interact or what patterns of their co-occurrence predict which particular coping strategies.

Failure to replicate research findings consistently may be explained by lack of systematic operationalization and diversity in definition of coping, choice of instruments, differences in type and severity of the event, nature of the sample, inadequacy of personality assessments, nongeneralizability of the trait being studied, and internal and environmental factors. Although the present trend in moderator variable research is toward assessing the role of multiple variables, the contribution of the complexity of the individual remains inaccessible through traditional predictor-criterion research design.

## Coping

### Coping Strategies

Two major functions by which coping strategies may be classified have been suggested by Folkman and Lazarus (1980): problem-focused and emotion-focused modes. Problem-focused coping is described as efforts to alter the immediate person-environment relation or to manage the stressor. Emotion-focused coping encompasses efforts to regulate the emotional impact of stress. Both internal and environmental factors are thought to influence the individual's choice of a coping strategy to manage the stress and this varies across individuals.

Individual differences in the selection of the most effective mechanism to deal with a stressful encounter may depend largely upon the level of ego maturity the individual has reached. Thus, level of ego functioning may be the encompassing process by which individuals differentially perceive and evaluate particular situations and choose those modes of coping which are perceived to be most effective in each situation.

### Ego Psychology Models of Coping

Traditionally the ego psychology model defines coping as the thoughts and actions that are employed to solve problems, focuses on individual perceptions about relationships with the environment and tends to emphasize coping styles as stable dispositions. Additionally this model equates coping with adaptational success.

One of the earliest formulations of coping identifies a



hierarchy of strategies for reducing tension. In this model of ego psychology Menninger (1963) suggests that distinctive behaviours reflect the level of internal disorganization. When the characteristic coping devices (self-control, humour, crying, swearing, weeping, boasting, talking it out, thinking it through and working off energy) are used appropriately, they indicate minimal disorganization of ego functions; when they are used inappropriately, they become symptoms of disequibration and lack of control and are indicative of pathological levels of ego processes. For example, the appropriate use of "thinking it through" as a coping strategy might include realistic, flexible thinking that leads to problem solutions, thus to the reduction of stress; the inappropriate use of "thinking it through" might include unrealistic, rigid thinking that leads to avoidance of the problem, thus to an indication of ego disorganization.

Similarly, Vaillant (1977) proposes a hierarchical system for categorizing coping strategies progressing from mature mechanisms such as altruism, through neurotic behaviours such as repression, immature mechanisms such as hypochondriasis, to psychoses such as denial of external reality.

These traditional approaches to coping generally conceptualize a hierarchy of strategies which are thought to progress from primitive to mature mechanisms. Furthermore successful outcomes have been equated with coping while unsuccessful outcomes have been called defense. This view confounds the process of coping with its product, the outcome.

To understand the relationship between coping and perceived outcome, coping efforts must be examined as situation-specific strategies to manage stress, as separate from outcome, and without efficacy evaluations.

Psychoanalytic ego psychology models have typically been limited to categorizing individuals according to a preferred coping style. For example, individuals have been classified as repressors or sensitizers (Shapiro, 1965). This approach constrains coping structurally and implies that coping strategies remain rigid across various situations. Another model of ego development (Loevinger, 1976) conceptualizes individuals as evolving through a sequence of dynamic ego processes which constitute stages of development, or functioning, and these stages are marked by characteristic perceptions of the internal and external world. These perceptions are reflected in measurable behaviours, both cognitive and overt.

#### Ego Development

##### Loevinger's Model of Ego Development

According to Loevinger (1976) human personality comprises a number of traits which appear to be characterized by consciousness and freedom. Ego, the master trait, provides the framework within which the individual interprets the world and behaves according to this interpretation. The level of ego development reached strongly influences both interpretation of the event and the resulting behaviours.

The ego is a process, an abstraction, the essence and

function of which is to integrate, to make sense of experience (Loevinger, 1969). Maturity of stages of ego development is defined by increasing autonomy and awareness of self. The stages of ego development are ordered along a continuum of differentiation and complexity and represent one of four lines of development. The others, physical, psychosexual and intellectual are conceptually distinct from ego but may be empirically related. Loevinger's model of ego development posits that the stages encompass associated character types and these are operationally defined and measurable.

Relevant to the present study, Loevinger's model of ego functioning (Loevinger and Wessler, 1970; Loevinger, Wessler and Redmore, 1970) suggests that coping issues will proceed from an egocentric concern with satisfying physical needs, through an emphasis on self-protection, followed by preoccupation with material things to introspection and finally to self-criticism, conflict between needs and ideals, and at the highest stage of ego development the individual theoretically is beyond coping with conflicts and can reconcile conflicting demands and renounce the unalterable or unattainable. According to this theory the relative significance assigned various properties of the event are expected to alter as the individual proceeds through the stages. Thus not only the type of strategy used as a coping response but also those properties that are perceived as being stressful, or threatening, should reflect level of ego development and can be empirically assessed (Loevinger and

Wessler, 1970; Loevinger, Wessler and Redmore, 1970).

### Appraisal

#### The Appraisal of Threat

The anticipation of harm (threat) which occurs when cognitive processes (memory, perception and judgement) evaluate cues about future consequences may be the most relevant variable in psychological stress and must be inferred from antecedent conditions. An event, no matter how noxious or unpleasant will produce a stress response only if it is defined as threatening. An appraisal of threat implies that the individual has an investment in the outcome and includes an evaluation of impending risk to well-being. Furthermore the prediction of threat permits the institution of anticipatory coping. The importance of the subjective meaning of a situation has long been emphasized (Lewin, 1936; Mischel, 1973; Rotter, 1954). Thus cognitive appraisal appears to be the mediating factor which enables the individual to interpret the properties of an event as potentially harmful (threatening). Such an appraisal shapes the individual's response to the event and provides the basis for evaluating the outcome.

Two types of appraisal ultimately elicit a pattern of reaction. The first type, primary appraisal, involves cognitive processes that construe an event as threatening and activate coping mechanisms. This leads to another process which intervenes between threat and coping, secondary appraisal. The concept of secondary appraisal determines the form that coping

will take and can explain the choice of differential reactions and strategies among and between individuals and situations (Lazarus, 1966). Differential evaluations of stimuli may depend, at least partially, on differences in predispositional factors, life experiences, perceived self-efficacy and varying repertoires of coping skills, resources and styles.

Two classes of determinants have been implicated to account for differential responses. First, persistently high anxiety level and other basic personality attributes may elicit an appraisal of threat. For example, a chronically aroused individual may have a lower threshold for feeling vulnerable and insecure. Such an individual may easily become more stressed, may be overly vigilant or avoidant, and less able to discriminate between mild and strong threat (Janis, 1974). These stressful internal conditions may support decreased ability to select adaptive coping strategies.

Second, degree of ego-involvement (how relevant the threat appears to be to personal goals and commitments) may function as a mediator that generates differential resistance to fear-arousing information about the nature of the threat. When an individual is committed (high ego-involvement) to a particular behaviour (e.g., smoking) fear-arousing cues (e.g., data relating incidence of lung disease to smoking) are likely to be resisted; when an individual is not highly committed to a behaviour (low ego-involvement) or begins to perceive personal vulnerability (changing priority of ego-involvement) less resistance will be

exhibited toward the same warning data (Tyler, 1980).

Differential appraisals of threat function to activate the selection of a coping response congruent with level of perceived threat and depend upon the individual's perception of the value, severity and controllability of the impending event and the consequences of the actions generated to reduce the threat. An aversive event may be reinterpreted in order to avoid dissonance with personal beliefs about control (Abramson, Seligman and Teasdale, 1978).

#### Beliefs About Control

Control beliefs are cognitive factors that influence the appraisal of a stressful event; control as a process of coping refers to the cognitive and behavioral efforts to seek control of the stressor (Folkman, 1984). For example, problem-focused coping is meant to alter the person-environment relationship through the use of strategies which control the environment and/or the individual. Emotion-focused coping may alter the negative affect of a situation through the use of strategies which control the way it is perceived by altering its meaning or accommodating to it. Generally the perception of having some control over a threatening situation, either cognitive control or behavioral control, increases the probability that stress will be reduced.

However the interrelated nature of real life events suggests that in some conditions the perception of uncontrollability may function to diminish stress. For instance, the realistic

appraisal of a stressful situation as uncontrollable allows the individual to attribute responsibility for the event to unstable factors, such as effort or behaviour (Peterson, Schwartz and Seligman, 1981), thus encouraging changes in goals and the maintenance of self-esteem. The appraisal of controllability is based upon the ability to make a judgement and to infer from the interplay between the data, the situation and the psychological characteristics of the individual. Thus the properties of the event which will be emphasized may be greatly influenced by the level at which the ego is functioning.

It is assumed that ego control is normally achieved as an aspect of development which is the result of the differentiated perception of the self and the social environment. Ego control may affect coping responses directly by shaping reactions to threat and selecting actions for behavioral expression.

Examining the meaning of the event in the context of the individual's overall functioning and in relation to other ongoing life events may reveal some of the mechanisms involved in differential response to negative life events. Person (internal) factors and situation (environmental) factors must be studied as interdependent variables and their significance for coping may be revealed through an understanding of the cognitive developmental processes that allow selective affect and appraisal by assigning importance to particular factors.

The present research is an attempt to show that the selection of coping strategies in particular stressful situations

reflects the level of maturity as is conceptualised by the level of ego development which best characterizes the individual. Further an attempt has been made to define the associations between maturity of ego level (Loevinger, 1976) and maturity of coping strategy. This approach to the prediction of coping strategies acknowledges that antecedent conditions, including personal values and dispositions and the perception of threat converge to effect selection of coping strategies.

The main objective of the proposed study is to characterize stages of ego development by type of appraisal and by coping strategies. Specifically, it is hypothesized that (a) the stimuli which receive attention when encountered in a stressful situation vary differentially with ego level, (b) the appraisal of a stressful event varies differentially with ego level, (c) the type of coping strategy selected to manage the stress varies differentially with ego level. Additionally this study investigated specific coping strategies as they are elicited by cognitive appraisal and as they are expressed in specific types of situations. Further, their congruence with level of ego functioning was examined.

The next section explains the rationale and purpose for undertaking the present study.

#### Rationale and Purpose

Failure to replicate research findings consistently may be explained by lack of systematic operationalization and diversity in definition of coping, choice of instruments, differences in



type and severity of the event, nature of the sample, inadequacy of personality assessments, nongeneralizability of the trait being studied, and internal and environmental factors. Although the present trend in moderator variable research is toward assessing the role of multiple variables, the contribution of the complexity of the individual remains inaccessible through traditional predictor-criterion research design. One way to evaluate the role of individual complexity as it interacts with the environment requires that the mode of individual functioning (personality) be determined.

Loevinger's (1976) model of ego development posits that reorganization of personality parallels conceptual complexity; that conflicts exist between the expression of impulse and societal norms is first acknowledged and then integrated within self-selected standards as level of maturity increases. In accord with this notion studies of personality reorganization suggest that the integration of such dichotomies parallel the use of more mature forms of coping (Haan, 1977; Lebouvie-Vief, Hakim-Larson and Hobart; Vaillant, 1977). Furthermore recent findings (Lazarus and Folkman, 1984) indicate that the perception (appraisal) of threat, the necessary and sufficient stimulus for the initiation of coping efforts, may be mediated by an internal system (ego). Because the ego is thought to evolve over time it is suggested that the appraisal of an impending event as threatening should also reflect developmental differences and that these differences should be congruent with the level at

which the ego is functioning. Additionally as the ego evolves various components of an event should become differentially significant (Loevinger, 1976). Thus those environmental aspects which are relevant to the particular ego level reached will gain access to attention.

The main purpose of the present research is to relate individual differences in the choice of responses to threatening life events to a theory of personality so that level of conceptual complexity may be used to predict type of coping strategy that will be selected under similar conditions. The notion of level of ego development (Loevinger, 1976) is a construct which may be used to conceptualize individual differences as it refers to the framework of meaning that individuals subjectively impose on their life experiences. Thus level of ego functioning should have much relevance to the strategies selected to manage stressful life events and to the perception of a particular event as stressful, or threatening.

#### Contribution to Knowledge

The foremost contribution of the present study has been to show that relationships exist between personality and a threat response and between personality and a coping response. Specifically those distinctive categories of environmental stimuli that elicit an evaluation of threat have been defined and it has been shown that such an evaluation depends upon the level of personality development the individual has reached. Further an instrument has been introduced which can define objectively

those environmental stimuli which are perceived subjectively to be threatening and can place those stimuli along a developmental dimension. Additionally the present study has revealed that only women and men who are functioning at high levels of personality development use an analytical problem-oriented approach to managing stress.

In sum: (a) Factors in the environment that are perceived as stressors may be ordered along a developmental dimension, (b) factors influencing individual response to stress vary with developmental maturity, (c) these factors can be measured directly. Furthermore this investigation has added to the existent body of literature that relates specific behaviours to specific ego levels as defined by Loewinger's (1976) theory. Some of the processes by which life stresses are managed have been defined and these processes have been characterized by a measurable variable: level of ego functioning.

If the types of coping strategies that individuals at specific levels of ego functioning are likely to use under particular conditions can be identified, future investigations should be able to predict whether adequate or inadequate coping efforts will result, if the individual's ego level and the specific stressor are known. Thus interventions which train superior coping strategies may be introduced.

The next chapter reviews the relevant literature pertaining to Loewinger's theory of ego development, to appraisal, and to coping.

## CHAPTER 2

### Literature Review

Over the lifespan individuals cope with crises, alter their commitments and values and appear to "mature" in the process. This ongoing formation of character and the often reported accompanying sense of personal integrity has been difficult to define and measure. According to Allport (1937) maturity comes with the reconciliation of two conflicting tendencies, the achievement of self-extension, or commitment, and self-objectification, or the ability to view the world detached from the self. Other views of personal integrity include a balance of psychic forces and flexibility (Jahoda, 1958), and a resistance to stress (Loevinger, 1976). Additionally, it has been argued that the ego provides the frame of reference that structures the individual's world and the frame of reference is that within which the world is perceived. The frame of reference evolves as the ego continues to develop (Loevinger, 1976). Thus it is via observation of the development of the ego that changes in lifestyle may be recorded.

### Ego Development: A Stage Theory

A number of theoretical and empirical descriptions of human development have emerged which focus upon structural (Kohlberg, 1964; Piaget, 1936; Sullivan, Grant and Grant, 1957) rather than functional (Erikson, 1963) definitions of ego. Of these models Loevinger's approach to the characterization and measurement of the evolving ego is the most completely developed (Kohlberg and

Armon, 1984). Loevinger's concept of ego development is consistent with the notion of cognitive structuralism and encompasses topics which previously have been referred to as socialization, moral development, character structure and cognitive development.

The purpose of Loevinger's work is to reveal the general psychological principles that mediate ego development and combines a conceptualization of ego psychology with a functional, structural, developmental psychology. Loevinger's conceptualization of ego stages shares with other structural perspectives some basic assumptions: there exists unity to personality (ego) which functions to reason, judge, evaluate and give meaning to experience; ego stages are equilibrated structures that develop in an invariant hierarchical sequence; character and moral judgments are encompassed by ego stage; and, the assessment of developmental structures embodies a feedback loop to alter theory in response to data (Kohlberg and Armon, 1984).

Loevinger's approach differs from traditional definitions of ego development in at least two important ways:

1. Loevinger's model of ego development has been designed to be amenable to systematic empirical research (Loevinger and Wessler, 1970; 1978). However, such an eclectic approach encompasses the problems inherent in stressing the importance of measurement, possibly at the expense of theory.

For example, Loevinger takes a positivist approach by

offering only "operational" definitions and avoiding political and philosophical considerations. Further she does not always distinguish clearly between theorizing and measuring. This failure to define the relationship of the instrument to an independently validated theory lessens the construct validity of the instrument and renders the theory unnecessarily vulnerable; any fault detected in the instrument may undermine the entire theory (Broughton and Zahaykevich, 1976). Loevinger acknowledges the existence of this "tension in our conception of science" (Loevinger, 1976, p.433) and argues that the inclusion of a feedback loop is essential to a scientific paradigm, underlining the importance of the continuing evolution of the knowledge base of human character development.

2. Loevinger's concept of ego development assumes the existence of individual characteristic orientations to the world and, unlike the Piagetian (Piaget, 1936) notion of stages, the ego is assumed to progress along gradations of a qualitative continuum reaching milestones rather than moving through discrete stages (Loevinger, 1976). Each successive stage represents a reorganization of patterns of interpreting and responding to situations and of thinking about oneself. One way to assess level of ego functioning is by observing coping behaviours under conditions of stress. Coping behaviours reflect and are appropriate to level of ego development achieved (Weathersby, 1981).

### The Ego: A Frame of Reference

According to Loevinger (1976) the essence of the ego or of ego functioning is to integrate life experiences into a coherent, meaningful frame of reference by which to interpret the world. The fundamental characteristic of ego structure is as a process continuously striving to master, integrate and interpret experience (Loevinger, 1969). It is a structure which is social in origin, functions as a unit, is guided by purpose and meaning and is defined by a set of relations among its elements. The relations are governed by laws of totality that are independent of the elements. For example, a young child may have acquired the verbal elements of words and be able to emit phonemes indefinitely but these abilities do not provide the child with the structure of words. Development requires that the basic rules which govern the relations among the elements change (Blasi, 1976).

The term "structure" implies the existence of many elements which are related to each other in a well-defined order. These relations may be causal, temporal, spatial or of some other nature, but for each type it is the set of relations among the elements which provides unity and integrity to the structure and gives meaning to each element as part of the whole. Change in basic relations elicits change in the structure, however, all or some elements may change and the basic structure remain unchanged. For example, the child may acquire the ability to perceive successfully the correct combinations of phonemes in

order to establish a vocabulary to speak discernably, thus establishing the structure of speech; writing the words changes the elements without changing the basic structure of the words. Similarly, modification or development occurs when the structural laws of the ego change; the acquisition or reorganization of the basic rules governing the relations among the elements which comprise the ego structure elicits development.

Each ego level represents a modified perception of experience expressed in new behaviours which reflect increasing levels of ego functioning. Thus the term ego development refers to a sequence of related patterns of cognitive, social, moral and intrapersonal development that correspond to qualitatively different ways of responding to experience.

Change occurs when the individual's coping repertoire is inadequate to manage situational (internal and/or external) demands. The impetus for change may come from a desire for self-improvement, maturational processes or threat. The dynamics for psychological development, the impulse to transform one's structure comes from motives such as the desire to satisfy needs, to become more competent, to understand more adequately (Loevinger, 1976).

Loevinger's concept of change follows a biological model in which the organism is engaged in continuous adjusting and accommodating and must remain selective and flexible to retain its integrity (Loevinger, 1976). Loevinger (1976) suggests that structural change to the organism (development) may depend upon



both internal (genetic) process and external (environmental) pressures. The biological metaphor has been used because the processes which characterize live structures appear also to characterize the psychological structures of the individual personality. This concept allows the individual to focus selectively on specific aspects of an event while ignoring others (possibly due to input from defense mechanisms), to assign unique interpretations to events (appraisal bias), and to react in characteristic styles (coping strategies). Thus development may be observed through the analysis of individual differences without need to refer to an objective reality.

Loevinger traces her use of the term ego development to Adler's (1956) concept of "lifestyle" which he equated with self, ego, unity of personality, method of facing problems, opinion of self, and attitude toward life (Loevinger, 1976). This view was later modified by Harry Stack Sullivan (1953). Loevinger adapted these notions of ego as they incorporate many descriptive terms subsumed under one function.

Sullivan (1953) was greatly influenced by the psychoanalytic views of Freud (1923; 1933). Loevinger (1976) has suggested that the concept of ego originated with Freud. Freud's concept of ego is expressed in purposive, goal-directed behaviour; the task of the ego is to master instinctual life, the conscience, and the world of reality. Interpersonal relations supply the impetus and the pattern for intrapersonal differentiation (Loevinger, 1987, p.40). For example, according to Freud's thesis, one way in

which a child learns to solve a problem is by identifying with the parent and thus performing in the way the parent would. In this way the child learns to control impulses by playing the part of both the impulsive child and the controlling parent. In accord with this view Loevinger's theory acknowledges that the division between acting on impulse and controlling the impulse is an important step in ego development.

Freud attributes structure to the ego, he ascribes to it the striving for meaning and consistency. Sullivan's concept of the self-system was greatly influenced by Freud's notion of "das ich". The stability of the ego, the logic of the developmental sequence, developmental arrest, and the essential desirability of interpersonal experience are focal points of Sullivan's (1956) theory. According to Sullivan, the self-system, a version of the ego, is an organization of experiences which arises in infancy as a response for avoiding the increasing anxiety encountered in the pursuit of needs satisfaction, particularly in situations involving the significant other person (the parent). When security needs are not met and no coping response is appropriate the infant becomes anxious. Thus the self-system develops in response to the needs of interpersonal relations and incorporates the individual's frame of reference, closely resembling Loevinger's (1976) conception of the ego.

Sullivan suggests that each level of ego development embodies a unique conception of interpersonal interactions which is congruent with its current organization and functioning. The

self-system, or ego, distorts or selectively inattends to such interpersonal interactions which do not fit within its frame of reference. Admitting only data which are compatible with its basic premise protects the individual from the necessity to revise the frame of reference (Loevinger, 1976). While it operates as a protector, changes to the self-system, or ego, may be initiated by experience as increasing developmental levels are reached; each level has a unique configuration of needs and capacities.

Sullivan's conception of the self-system is in accord with Loevinger's conception of the ego as a structure which is primarily one of expectations about interpersonal phenomena and that only when the environment is not congruent with expectations does there exist potential for change. Additionally, in agreement with Loevinger, Sullivan posits that individual differences might reflect different levels of a single developmental sequence. Both Sullivan and Loevinger agree that the individual's frame of reference influences interpersonal relations and the unique interpretation assigned encountered situations. Further, both theorists suggest that sequential development of the ego parallels the development of the frame of reference and that the individual may become arrested at any level of development. Sullivan's notion of the self-system as a social process, was adapted by Loevinger as a structure which is purposeful and striving to find meaning (Loevinger, 1976).

Theories which view the ego as intrinsically social in

nature date back to the time of the ancient Greek philosophers. Socrates, Plato and Aristotle suggested that it is through community that individuals achieve their potential. Following the arguments of the post-Socratic philosophers the early psychoanalysts agreed that the ego of the child would develop most effectively through forcible socialization.

Loevinger conceptualizes the ego as a process, a structure which is social in origin, functions as a whole, and is guided by meaning and purpose. While most contemporary ego theories assume that individuals function according to a sense of purpose, behaviour may be perceived as having some meaning itself or as being elicited by meaningful determinants from the distant past. A purposive view of behaviour suggests a concern with goals, or purposes as phenomena of life (Tolman, 1932); a mechanistic view suggests the cause of behaviour lies wholly in past experience (Skinner, 1938). Loevinger's (1976) view posits that the ego functions at varying levels of organization thus reconciling a mechanistic view with a purposive view. She also acknowledges the validity of consciousness, the dynamic unconscious and the possibility of freedom.

Loevinger suggests that consciousness and freedom represent the attributes of personality and that because they are qualities rather than actions, their role in individual functioning is reflected in the way the individual relates to objects and other individuals. Loevinger (1966) conceptualizes the determinants of behaviour as being both conscious and unconscious and that the

consequences of behaviour affect only its conscious sources. Further she suggests that "behaviour originating in the unconscious is not stamped in by ordinary rewards or consequences" (p. 434). Loevinger incorporates the capacity and struggle to attain freedom from impulses, conventions, and social pressures in her theory. The scheme of ego development implies that the achievement of impulse control is one of the necessary transitions toward high ego stages and that an increase in spontaneity marks the highest ego levels.

As do most contemporary theorists, Loevinger considers the ego to be holistic rather than dualistic or elementaristic. The individual is the primary unit of study. The ego functions as a whole; there exists no mind-body dichotomy; the ego is not the same as the whole personality, it is rather the master trait, what the person considers to be the self.

Loevinger's (1976) view of ego development is not amenable to formal definition since it is an ongoing process in the real world. Ego development cannot be reduced to directly observable performances although it is related to and has its basis in observable behaviours. Her conceptualization of development is "as a sequence of structural changes often stimulated by the interaction of an organism with its environment" (p. 51).

In sum, Loevinger conceptualizes the ego as an abstract structure which is holistic in nature. The essence of the ego is to organize, interpret, and master experience. Ego development is concerned with the mode in which individuals function; the

unit of study is the individual. The level at which the ego is functioning provides the frame of reference by which the individual imposes meaning on experience.

#### A Model of Ego Development

Structural conceptualizations of stages have been described by theorists as early as Baldwin's model of hyperlogic (cited in Kohlberg and Armon, 1984; Loevinger, 1976) but it is Sullivan who provides a rich contemporary illustration of the development of the "self-system" which greatly contributed to shaping Loevinger's conceptualization and theory. Sullivan suggests the Freudian idea of human instincts is "preposterous". According to Sullivan (1953) human beings possess innate capacities which are too slow to mature, are subject to experientially imposed fairly stable patterns of change and are labile in nature. These characteristics are opposed to the rigidity of behavioural patterns implied by "human instincts". Instead Sullivan concentrates on the study of human similarities, particularly patterns of interpersonal relationships. Sullivan argues that the most important determinant of human functioning is anxiety; the self-system develops out of the need to cope with the experience of anxiety (Sullivan, 1953). The self-system incorporates an individual's frame of reference, thus events which are incongruous with that particular frame of reference create anxiety and the self-system functions to escape anxiety. As in Freud's theory it is the developmental timetable which initiates changes in the activity of the self-system; an arrest

of development may take place to protect the ego, or self-system, from threat in the form of anxiety.

One important interpersonal learning experience which impacts on the developing child is based on modelling by adults; the child playacts at being like an adult; development is marked by increasingly clear distinctions between fantasy and reality. Thus significant others are viewed as imperative in the consolidation of perceived reality (Loevinger, 1976).

Sullivan's conceptualization of the sequence of development is anticipatory of a typology. A typology provides a means by which to express individual differences and places the individual into one of a limited number of patterns which are defined in qualitative terms. The patterns are multi-dimensional, representing several associated characteristics. This contrasts with a trait approach to personality which is unidimensional and may be measured quantitatively. This concept, that within each age cohort there exists a characterology and that differences found within an age group are qualitative and not reducible to quantitative differences establishes a basis for Loevinger's assumptions (Loevinger, 1976). Sullivan describes the development of the ego in sufficient detail to render it amenable to measurement. According to Loevinger (1976) the weakness of Sullivan's description of ego development is that he does not view it as an abstract concept but instead refers to age-specific stages and implies that the ego remains stable because only data which are compatible with the existent ego structure are

effectively perceived.

Because all aspects of growth may occur simultaneously a need exists to differentiate among physical, psychosexual, intellectual, and ego levels. Moreover the term "ego development" effectively captures the diverse manifestations of the stages, and in particular that interpersonal relations, conscious preoccupations, impulse control, and moral development all may be subsumed under one organizing principle. Loevinger first used the term "ego development" to denote the single logically coherent domain because no other term seemed inclusive enough (Loevinger, 1987). Loevinger (1966) suggests that the term "ego development" should be applied to an abstraction rather than to concrete, observable stages of growth.

The usage of the term in psychoanalytic literature confines development to the stage during which the ego is being formed (Spitz, 1959), referring only to development in the "conflict-free" ego sphere (Hartmann, 1939) or, most frequently as comprising the development of all ego functions as an organic unity (Bellak, Hurvich and Gediman, 1973). Conversely, Loevinger (1966; 1976) argues that many levels of ego development are marked by conflict and that the higher levels are defined by the capacity to cope with and accept inner conflict.

Psychoanalytic theory, particularly the writings of Freud (1923) has had a major influence on Loevinger's (1976) theory of ego development. His thesis posits that the ego is a coherent organization whose task is mastery of reality, the id, and the



superego. The development of conscience is a necessary component toward achievement of the task. The transformation of aggression to mastery marks the formation of conscience. Experience is mastered by active repetition of that which has been passively suffered. Similarly, Loevinger (1966) posits that the separation of ego from impulse, the identification with the aggressor, and the internalization of authority (self-criticism and conscience), form the core of the ego's functions. Furthermore, altruism, a higher stage of ego functioning may represent a transformation of the aggressive drive. Thus the "interpersonal clash becomes the model and the occasion for an intrapersonal clash in the normal course of ego development" (p. 438).

Loevinger's stress on interpersonal impulses is reminiscent of the views of Sullivan (1953) who was strongly influenced by the symbolic interactionist approach to personality formation. This viewpoint posits that human behaviour reflects the organization of previous experience into symbols or signals. These symbols are subjective interpretations of physical phenomena and may be represented by thoughts and feelings. It has been argued that Loevinger's view that symbolic interaction among thoughts and feelings elicits changes in perspectives is an attempt to reconcile events within the private world of events, may be represented only within individuals, and as such would not be directly observable (Broughton and Zahaykevich, 1976).

Further the ego may be thought to represent both the negation of radical Cartesian dualisms, such as instinct vs.

learning, innate vs. acquired, and impulse vs. reflection and the interaction, or logical intersection between thoughts and feelings (Haan, 1977; Loevinger, 1976). In addition the assumption of internalization permits the concept that the ego has the capacity to mediate both the social influence of the environment, which may elicit conflict, and the plasticity of action, which is necessary to satisfy the impulses.

Psychoanalytic interpretations are not compatible with the usage given the term "ego development" by Loevinger with the exception of Erikson's (1963) perspective of psychosocial development.

Loevinger's model departs from the traditional concept of the developing ego when she argues that ego development represents only one of four lines along which humans develop. The other elements physical, psychosexual, and intellectual may be related aspects of development but are conceptually distinct. Loevinger suggests the inclusion of four components for a contemporary conceptualization of ego development: (1) Stages, via their role as fixation points, define type of adult or child; (2) inner logic exists to the stages and their progression (structure); (3) methodology is available for advancement of knowledge in the domain; and, (4) the concept applies to all age groups.

Loevinger (1976) posits a synthetic function for the ego which is not simply one function of the ego, rather, it is the essence of what ego is. The synthetic function of the ego implies that the ego is a process rather than a concrete

structure (Nunberg, 1931). As such the ego is in an ongoing state of interchange with the environment; the stability of the ego is maintained by continuous mobility in striving to organize, master, integrate, and interpret.

The suggestion of the synthetic function, or principle of consistency, implies that the ego is in need of a system to "hold together" the discrete mental atoms which represent a fragmented psyche (Kaplan, 1967). The reification of such a function ignores the problem of delineating what is responsible for the integrity of the synthesis and why it is comprehended as being an internal rather than an externally controlled function. How the synthetic function "decides" what is part of the self and what is not part of the self has not been clarified. By arguing that the essence of ego is the striving to master experience Loevinger (1966) averts the need to address the questions of how experiences are perceived and known to be one's own and instead refers to mastery and control issues (Broughton and Zahaykevich, 1976).

There exist many similarities among the ideological sources from which Loevinger has borrowed. All of the concepts posit a normative sequence and a dimension of individual differences at all stages. Behaviour is viewed as purposive; personality as holistic. Impulse control, interpersonal relations, character development and cognitive preoccupations are shared concerns (Loevinger and Wessler, 1970).

According to Loevinger's model, ego development is a

crystallization of several theories (Adler, 1956; Kohlberg, 1964; Piaget, 1936; Sullivan, 1953) which refer to stages of development as "oral progress", "moral judgment", "cognitive development" and "self-system". While limitations are not placed upon the ages at which specific stages are reached and the notion exists that the manifestations of one stage do not negate the parallel manifestations of another stage (Loevinger, 1976), it is possible to specify the correlates of each stage in the sequence. As the ego develops the individual's customary orientation to the self and the environment proceeds along a continuum marked by changes in perceptions of the self, of society, and of interpersonal relations (Candee, 1974). Because these correlates may be viewed as abstract manifestations of sequential changes in the way that interpretations are structured, identifying them permits each stage and its pattern of associated types to be defined operationally (Hauser, 1976). Consequently, Loevinger's model of ego development is a construct which has been designed in such a way that the sequentially ordered stages may be empirically investigated.

Loevinger argues that while ego development may be related to observable performance it cannot be directly observed and suggests that ego development is best understood as a sequence of structural changes. However these changes may be both elicited by and empirically investigated by observing the interaction of the individual with the environment. She states that no formal definition of ego development is possible since ego development

is "something that occurs in the real world" (Loevinger, 1976, p.54).

Thus the study of ego development requires not only an understanding of relations between the individual and the environment and among individuals, but, also, a concept of the structures which guide individuals to choose to attend to some properties, or characteristics, of events and to selectively not attend to other properties. Individual personality attributes which reflect the interpretation and organization of prior experience may be determinants of the individual's response to ongoing events. Recognition of the role of these characteristics of personality appear to be central to the study of the developing ego and should facilitate an understanding of their contribution to human functioning.

Ego development is measured by a sentence completion test, the Washington University Sentence Completion Test (WUSCT) which defines seven stages and three transitional phases independently of age. The WUSCT focuses upon the study of individual differences, age relationships, and correlations with other lines of development (Loevinger, 1966).

#### Stages of Ego Development

Theoretically Loevinger's model of ego development is a "soft" structural model. Stages are defined not only as structures but also in terms of functions and motives. Loevinger's theory of ego development suggests that modes of thinking appear to be theories of the world constructed by

individuals as a result of reflective thought and pertain to the unity of the self; "hard" structural theories define stages in terms of cognitive or sociomoral predetermined structural forms.

Loevinger defines structure as a hypothetical property of personality which may be inferred from examining defined categories of structure and content. The stages that represent the structures are constructions of exemplars, or ideal types, that contain mixtures of structure and content. Similarly the distinction between competence and performance may not be assessed directly in a soft structural model. These ambiguities reduce the possibility of formulating a normative model of development (Kohlberg and Armon, 1984). Loevinger (1976) states that "the average age for a given stage is not the same as the average stage for a given age" (p.13).

While stages may be correlated with chronological age they are not age-specific but rather indicate individual differences in characteristic styles. The stages comprise an invariant order. Each stage represents increasing complexity and no stage may be skipped. Individuals' development may cease at any stage but representatives of all stages exist in adulthood. Individuals are characterized by the expression of the features of the stage at which they have stopped developing (Hauser, 1976).

Instead of logical definitions for each stage, Loevinger (1976) presents impressionistic descriptions. She attempts to describe the commonalities that individuals share at each stage

with minimal reference to age-specific factors. Further she suggests that the stages be referred to by name or symbol, rather than number. This practice avoids the confusion that may arise when new insights lead to the inclusion of newly identified stages.

Stages are named for the function or characteristic which appears to be maximal at that stage (Loevinger, 1976). Characteristics generally arise slowly over successive stages, reach a maximum and then either slowly retreat or may be retained as the central aspect of individual functioning. However it is the total pattern of attributes that defines a stage. Each stage differs from the others along both intrapsychic and interpersonal dimensions that represent an organized unity of impulse control, interpersonal relations, character style, self-concept, conscious preoccupations, and cognitive complexity.

Conversely, Kohlberg and Armon (1984) argue that it is impossible to construct a stage sequence that encompasses hierarchical integrations without specifying the inner logic of the sequence, particularly with reference to its endpoint, or most "equilibrated" state. These authors suggest that the notion that later stages transform and replace earlier stages must be supported both theoretically and empirically.

Loevinger (1965) argues that stages be referred to as milestone sequences; she defines milestone sequences as polar variables which are characterized by a succession of qualitatively different turning points (p.55). This notion

suggests that the ego develops along dimensions of variables which contain both underlying continuities (smooth transitions) and discontinuities (qualitative transitions). Smooth transitions suggest that levels of ego functioning are nontransformational; rather than a new interpretation of the previous stage, new aspects are simply added to it. Qualitative transitions suggest that as the ego develops through an invariant hierarchical sequence of stages, new interpretations due to changes in complexity of functioning reflect the development of changing cognitive structures (Loevinger and Wessler, 1970). Thus the developmental sequence comprises both smooth transitions and qualitative transitions from low to high ego levels. Individuals manifest signs which tend to increase in probability of occurrence up to a point and thereafter decrease. The signs thus exhibited have been used by Loevinger to indicate the probable stage of development of the individual; the signs are the markers, the milestones of ego development. The stages are briefly described in Table 1. A more comprehensive description follows.

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Insert Table 1 about here

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The first stage comprises two consecutive phases. Only the second phase can be measured by the WUSCT; the first phase is preverbal. The Presocial Stage begins at birth before the ego structure emerges and focuses on the task of differentiating the



self from the environment. The stability of objects is recognized. A child remaining at this stage is referred to as autistic. In the next phase, the Symbiotic Stage, the baby is strongly attached to the primary caregiver, can distinguish this individual from the rest of the environment and perceives the self and the caregiver to be a unit. The ability to use language brings this stage to an end and the baby's perception of being a separate entity emerges.

The next stage, the Impulsive Stage, focuses on control. Impulses are first controlled by constraint and later by reinforcement. The child is egocentric, preoccupied with satisfying physical needs and is oriented toward the present, discounts the future and does not acknowledge the past.

The ability to anticipate reinforcement for self-interest marks the Self-Protective Stage. The child is preoccupied with not accepting responsibility for actions and practices deception and manipulation of others. Rules are obeyed when they lead to satisfaction.

With the next stage, the Conformist Stage, comes the recognition of being part of a group and the beginnings of trust. Interpersonal relations are action-oriented, individual differences are not perceived, and social acceptance is a preoccupation. The individual at this level is prone to stereotyped moralistic judgments.

The Self-Aware Level marks the transition from Conformist to Conscientious Stage. The capacity for introspection (self-

awareness) and the ability to recognize multiple possibilities in situations begin to emerge. Self-evaluation, a growing awareness of psychological causation and self-criticism, marks a growing awareness of an inner life. This stage appears to be the modal level for adults in North American society (Haan, Stroud, and Holstein, 1973).

The fifth stage, the Conscientious Stage, marks the internalization of rules. However, unlike preceding stages where rules are obeyed because they are other-sanctioned, rules are generated by the individual and reflect that individual's concepts of responsibility and justice. The Conscientious individual experiences "a variety of cognitively shaded emotions" (Loevinger, 1976, p.21) and is aware of individual differences in others. The ability to empathize allows for deeper personal relations.

The Individualistic Level, the transition from Conscientious to Autonomous Stage, reveals the ability to tolerate individual differences and to comprehend complex situations. Interpersonal relations are marked by an awareness of inner conflict replacing excessive moralism at lower stages.

At the next stage, the Autonomous Stage, conflict is accepted as part of the human condition. The Autonomous individual recognizes the need for autonomy in all people while acknowledging the necessity for mutual dependence. Feelings are expressed clearly; life is viewed from a broad perspective.

The next stage, the Integrated Stage, is a theoretical

stage; represented by no more than 1% of the population in most groups (Loevinger and Wessler, 1970, p.4). The description of this stage comprises that of the Autonomous stage and adds consolidation of a sense of identity. The Integrated individual is able to renounce the unattainable, reconcile conflicting demands and cherish individual differences (Maslow, 1954).

In sum, this model of ego development incorporates four descriptive dimensions, impulse control, interpersonal style, conscious preoccupations and cognitive style into one coherent process, ego development. Neither a rigorous nor a final definition for each stage is possible; the model may be corrected by empirical work at any time. Interruptions in movement from stage to stage may be interpreted as character style. An individual may remain at any stage for an undefined period of time (Hauser, 1976; Loevinger, 1976).

The ways in which the components of the model, cognitive, social, moral and intrapersonal strands, relate to each other, if they evolve separately, or in combination, if they follow an invariant order and if either the components or the stages are reversible are issues which require further investigation. Moreover the logic of the sequential progression of ego stages remains to be defined. It has been argued that Loevinger's approach may not be able to differentiate among qualitatively distinct underlying attitudes. Without a definition of the events which are thought to elicit the transformation from one level to the next, the stages appear to be static, ideal types

that lack logical structure. (Broughton and Zahaykevich, 1976).

Loevinger's departure from the traditional personality measure of polar variables or traits to viewing ego development as comprised of milestones enables similar expressed values to represent qualitatively different meanings determined by level of ego functioning. For example, a polar view of content, by definition, would place at the same end of the developmental sequence, individuals who are not yet able to conform with those who have outgrown the need to conform (Candee, 1974). Thus, a milestone conception enables a distinction of form from content. In addition, such an approach to development explains how individuals with differing agendas may use similar forms of reasoning to arrive at opposite conclusions (Haan et al, 1973) and to express different behaviours (ways of coping) when confronted with similar stressors.

#### Ego level and coping responses.

Although there exists a vast array of coping responses that may be utilized under stressful conditions, there appear to be no intrinsic, predetermined strategies associated with particular situations. Moreover, the selected overt response does not clearly indicate the functions it serves (Pearlin and Schooler, 1978).

While Loevinger's stages, or forms of development, may not be directly linked to action or problem-solving strategies or type of reasoning within a particular domain (Kohlberg and Armon, 1984) they appear to reflect theories that individuals construct

for themselves. Thus a coping response may be understood as a reaction which reflects the individual's frame of reference. One way to identify these factors is to observe the responses of individuals, whose levels of ego functioning are known, to life events occurring in specific situations.

It is reasonable to assume that the form of the response to stress, coping, represents the attained structural stage of the cognitive, moral and social styles, and of the self-concept, and is context-dependent. However, meanings and relevancies of stressful stimuli are interpreted within the framework of the individual's unique view of the world. This process of situational appraisal precedes the coping response and may encompass the activation of defense mechanisms. Nevertheless, coping describes observable behaviour, rather than defenses and attempts at self-fortification (Haan, 1977). The classical defenses of psychoanalysis (Freud, 1937) will be considered as precursory to the overt expressions of coping to which they are not necessarily identical and will be assumed to be reflected in the appraisal of the stimuli.

The interactive and dynamic nature of ego processes makes traditional psychological measurement difficult and individuals may not always present accurate representations of themselves. The present study is an attempt to build a conceptual bridge between two systems, level of ego development and one of its overt expressions, coping, having appraisal as mediator.

It is suggested that encountered situations, particularly

negative life events, elicit activation of both the existent cognitive structures and affective evaluations and evoke motive-plans. These are then organized by coping processes and result in behaviours which accurately reflect level of structure (ego) development (Haan, 1977). However, unlike much of the work which has examined coping, the present study ascribes no value judgements; coping is assumed to be a process which entails change in the individual and is considered separate from the outcome of the coping behaviour. Moreover, coping is examined under threatening conditions; nonthreatening events may elicit automatic reactions which do not necessarily reflect affective appraisal.

#### Appraisal and Coping

Since the 1960's a great deal of interest has been stimulated in the study of stress and coping. One factor for this renewed focus, particularly evident in developmental psychology, is the growing realization that major psychological changes occur not only in the very early years of life (Freud, 1923), and adolescence (Erikson, 1956), but also in young adulthood (Mechanic, 1990), and later (Vaillant, 1977).

A growing appreciation of the impact of personal resources and environmental constraints support the argument that stress might be examined most effectively as a rubric of many variables rather than as a single element. Early views suggested that the predominant effect of stress was an impairment of performance through increased drive tension or interference with ongoing

behaviour. More recently greater importance has been accorded interaction than reaction. This change in focus may represent the recognition that the most effective way to begin to understand human vulnerability is by observing individuals interacting with their worlds. While stress may be an inevitable factor inherent in the human condition individual differences in the perception of particular stimuli (appraisal) as stressful and in the response to the stressors (coping) appear to reflect the relevancies of stimuli within the individual's unique frame of reference (level of ego functioning).

Our definition of stress emphasizes the relationship between the individual and the environment and includes the characteristics of the individual and the nature of the external event impinging upon the individual. Psychological stress appears to occur when the individual judges an environmental event threatening; this judgement depends upon cognitive appraisal (Lazarus and Folkman, 1984), a process which appears to reflect the individual's unique characteristics. The appraisal of an event as threatening initiates a coping response.

Because the aim of coping is the maintenance of satisfactory internal conditions (ego integrity) and autonomy, the way the ego responds to stress (pattern of coping), is directed toward facilitating individual adaptation (Laughlin, 1970) and may employ mechanisms of defense either consciously or unconsciously. Thus the response to a hostile environment may be influenced by defensively-based evaluations (Lazarus and Folkman, 1984).

In accord with this notion a growing body of evidence suggests that person factors, such as cognitive appraisal and coping strategies could mediate the response (Lazarus, Deese and Osler, 1952; Sarason, 1960). The pattern of coping depends upon personal resources and beliefs, including problem-solving skills, social support, material resources, motivation and constraints such as internalized cultural values which mitigate the use of resources. Variability in coping strategies, the individual response to the event, appears to be, at least partially, a function of the subjective appraisal of the situation and of the individual repertoire of coping strategies and as such is a private event, may be difficult to measure and may have little relationship to objective reality.

Nevertheless the capacity to utilize adaptive coping strategies may reflect level of maturity. For example, it has been suggested that the less mature individual copes with stress by using less adaptive defense mechanisms, such as denial and projection, and that the more mature individual copes by using more adaptive mechanisms, such as sublimation and suppression. Thus models of coping imply that the reorganization of personality, which indicates increasing maturity, parallels changes in conceptual complexity (Haan, 1977; Vaillant, 1977).

Additionally it has been shown that developmental changes in cognitive organization affect the processes of personality organization (Commons, Richards, and Armon, 1984; Labouvie-Vief, 1982; Perry, 1968) and of coping (Harvey, Hunt, and Schroder,



1961). A stage approach to the study of personality delineates the evolution of conceptual complexity in which conflicts between the self and society are first acknowledged and subordinated to societal requirements, and which may later be integrated within self-regulated standards. For example, in Loevinger's (1976) view of ego development self-regulation through external control, little tolerance for conflict, and good-bad dichotomies are replaced by an increasingly differentiated perception of self, society and interpersonal relations (Candee, 1974).

Differing levels of ego functioning may mediate the hierarchical scheme of ego processes (Loevinger, 1976) that describe changing modes of managing stress. However the mechanisms, by which thoughts and reactions are linked, and which appear to be mediated by cognitive appraisal, have not been clearly defined. Nevertheless it appears that differing ego levels may permit differing types of event appraisal which evoke particular types of coping efforts. Thus the interpretation of an event as threatening to the integrity of the ego may depend upon the level at which the ego is functioning. Further, ego level may determine the specific properties of an event which are selected for attention. These properties may influence appraisal by defining which characteristics of the event are threatening.

#### Appraisal

Appraisal is a cognitive process that mediates between the event and the response to it and includes the factors influencing the nature of the mediator by which the personal significance of

an anticipated event is assessed. Appraisal, as inferred from self-reports (Koriat, Melkman, Averill, and Lazarus, 1972), experimental manipulations (Lazarus, Averill, and Opton, 1970), and personality assessments (Speisman, Lazarus, Mordkoff, and Davison, 1964) has been found to affect coping in predictable ways. It is only when a situation is judged to be threatening that coping efforts are evoked. Appraisal is considered to be a two-stage process: primary appraisal is an evaluation of individual investment (involvement) in the encounter which may be designated irrelevant, challenging, or threatening; secondary appraisal is an evaluation of the coping options available (Folkman et al, 1986) and of the probability of their efficacy (Bandura, 1982). Appraisal processes may be conscious or may be influenced by factors such as defense mechanisms which are not easily accessible.

The factors which affect appraisal are reflected in individual differences in the response to comparable external conditions and include person variables and situation variables. Person variables refer to the commitments and beliefs that the individual holds and give meaning to an event; situation variables refer to the properties of the encounter, including temporal factors, novelty, predicability, ambiguity, and the timing of the event, that create the potential for threat.

#### Person variables influencing appraisal

Commitments. Commitments are the determinants of degree of personal involvement in an event. Any situation involving a

strongly held commitment will be evaluated as meaningful to the extent that the predicted outcome is perceived to have the ability to facilitate or inhibit the expression of the commitment. Commitments include values, goals, and choices and imply an ongoing motivational quality (Lazarus, Coyne and Folkman, 1982; Atkinson and Birch, 1978). Commitments influence appraisal by guiding individuals toward perceived beneficial situations and away from harmful ones and through shaping sensitivity to environmental cues (Mechanic, 1962).

The strength of a commitment appears to create psychological vulnerability that can help initiate and sustain coping efforts to overcome obstacles, but can also generate the perception of threat to the extent that the commitment is held. For example, evidence showed that the greater was the strength of the individual's commitment to a goal the greater was the potential for threat. Conversely it was found that while strong commitment creates vulnerability it also impels the individual to engage in responses that can decrease the threat and can sustain coping efforts (Vogel, Raymond and Lazarus, 1959). Knowing an individual's pattern of commitments may help to identify areas of vulnerability that predict the conditions necessary to elicit perceptions of threat.

Changes in the pattern of commitments appear to parallel changes in the pattern of ego functioning. For example, an increase in commitment to career has been noted in women as they moved to higher ego levels following nurses' training (White,

1978; 1985). Additionally, ego level was found to be strongly related to the types of considerations used in forming political attitudes; at the lower ego stages political reasoning was characterized in terms of the emotional and physical effects the politics would have on the subjects, while individuals at the higher stages evidenced a perception of the environmental principles of politics and evaluated those concepts of political activity which have the most significance for human development and justice (Candee, 1974).

Beliefs. Beliefs are preexisting notions about reality which determine how the world is interpreted. Primitive beliefs rest on premises that are not open to question; the most important of these is absolute faith in the validity of sensory experience. Higher-order beliefs are learned as the potential fallibility of the senses and external authorities is recognized. Higher-order beliefs are derived by deductive reasoning from experiences over time and may come to be held without empirical evidence. Individuals generally do not become aware of the impact of beliefs on appraisal until there is a sudden loss of belief or conversion to a different set of beliefs. This change may cause a shift in the characteristic way the individual relates to others or to the environment (Clark, 1979).

Beliefs about personal control are of particular relevance to appraisal. These beliefs may be both general and situational. General beliefs about control suggest a generalized way of thinking and concern the extent to which an individual believes

outcomes are controllable. According to Rotter's (1966) formulation of generalized control expectancies an internal locus of control refers to the belief that outcomes are contingent on one's own behaviour; an external locus of control refers to the belief that outcomes are not contingent on one's behaviour but on luck, chance, fate or powerful others. Depending upon the individual's locus of control, internal or external, events may be perceived as differentially threatening. For example, an individual having an internal locus of control might view uncontrollable events as controllable, while an individual having an external locus of controllable might view controllable events as uncontrollable. Clearly it would be expected that individuals who perceive that they have control over an event outcome should initiate different types of coping efforts from individuals who expect to have little impact on the outcome. Thus both types of individuals might engage in inappropriate coping responses due to predispositions.

Situational control beliefs refer to the extent to which individuals believe they can influence or control the outcome of a particular situation. These appraisals depend upon the evaluations the individual makes about the situational demands and on the individual's concept of available coping resources and self-efficacy (Bandura, 1982) in the specific situation.

The targets of control in a stressful encounter may vary in degree of appraised controllability as the event unfolds and new data is received. Appraisals of control and their effects may

differ according to individual perceptions of the direction of change in the level of threat and of perceived coping efficacy. While it has been most often argued that being in control of a situation is stress-reducing, the interrelated nature of events suggests that under some conditions having control may increase the potential for threat. This may occur when having control is antagonistic to an individual's preferred style (Miller, 1980), when the cost of maintaining control has negative social consequences, or required resources are needed in another domain (Dill et al, 1980). Thus the way in which an event is perceived, appraised and resolved is influenced by an individual's unique frame of reference.

Beliefs and ego level. Changes in beliefs parallel changes in cognitive style (Loevinger, 1976). Loevinger's (1976) conceptualization of the developing ego suggests that personal beliefs change as a result of conflict caused by problems which challenge the individual's present level of interpreting and responding to situations. It is this evolving frame of reference which determines the meaning of an event, thus influencing appraisal. For example, college students were found to have advanced toward higher stages of ego development over a one year period (Adams and Fitch, 1982). Because the subject sample consisted of individuals in late adolescence, which has been theorized to be a period of intensive change in personality (Nesselroade and Baltes, 1974) and of conflict (Erikson, 1963) these data are in accord with Loevinger's argument that conflict

initiates progression.

An increasing locus of control, or the replacement of externally imposed standards with self-chosen standards, marks the evolution of the ego. Consciousness of the self, a growing awareness of inner life is one component of Loevinger's (1976) conceptualization of the developing ego. Instead of conforming to the obligatory rules of society, thereby assigning external responsibility to actions, the higher stage individual accepts responsibility, recognizes limitations and is somewhat freed from the demands of conscience which mark lower ego stages. For example, the Preconformist cognitive style is defined by stereotypy, self-protection and conceptual confusion, the Conformist maintains a belief in the importance of outward appearances, the validity of overt behaviours and external rules, the Postconformist mode is marked by a transformation to self-chosen standards of responsibility, concern and tolerance for others and objectivity (Loevinger, 1976; Redmore and Loevinger, 1979).

Perceived sources and appraisal of threat appear to be mediated by inner resources associated with the ego. Because the system develops over time there should be developmental differences in the perceived source of the stressor and in its evaluation. Individuals at lower levels of ego functioning would be expected to locate the cause of stress as external to the self, violating convention and due to interpersonal conflict. Individuals at higher levels should perceive the threat as having

an internal locus (Labouvie-Vief, et al, 1987), violating self-chosen standards of justice and as having negative consequences for human development.

Individual differences may exist in the way the hierarchy of beliefs is organized and this might account for differential appraisal of and emotions elicited by specific situations. One study of bulimics' conceptualizations of their disorder (Teusch, 1988) showed that bulimics at higher ego levels were able to understand the motives for their behaviour more clearly, expressed greater complexity of insight, and associated the development of bulimia with negative interpersonal beliefs than bulimics at lower ego levels. It was concluded that only Postconformists located the causes of their disorder within themselves, thus supporting the notion that higher levels of ego functioning encompass internal loci of control.

The level at which the ego is functioning may determine the way an individual processes data. The perception of the severity of an event appears to be encompassed by the appraisal process and varies with developmental changes in cognitive complexity (Labouvie-Vief et al, 1987). Accordingly, research findings showed that older individuals demonstrated greater flexibility (Blanchard-Fields and Irion, 1985) and maturity (McRae, 1982) than did younger individuals. Thus similar events may elicit different amounts of affect and will be ascribed different evaluations depending upon the level of cognitive complexity at which the individual is functioning.



Models of ego functioning suggest that the same amounts of affect can occur for various reasons (Loevinger, 1976) and that the consequences of the threat depend upon the response to it (Haan, 1977). Using a conceptualization based on Loevinger's (1976) theory to understand the response to threat shifts the focus away from the amount and intensity of the stress to the strategies used to manage the affect that accompanies the experience. The way an individual responds to stress should indicate the unique framework of meaning the individual imposes upon the event and should reflect the set of commitments and beliefs the individual possesses. Moreover, which properties of an event receive attention, type of appraisal assigned the event, and the coping strategies selected to manage the event depend upon the individual's commitments and beliefs. Clearly both internal and external factors impact upon each other and combine to effect a unique perception which is appropriate to the individual's framework of meaning.

#### Situation variables influencing appraisal

Several formal properties of encounters that generate stress may be defined. These include novelty, the degree of uncertainty inherent in the event, the timing and duration of the event, and the degree of ambiguity of the event (Lazarus and Folkman, 1984).

Novelty. A novel situation may be experienced as threatening if some aspect of it has been associated previously with harm. An individual's prior experience, direct or vicarious, determines appraisal (Schank and Abelson, 1977). Or,

a novel situation may be processed through existing systems of general knowledge to assign meaning to the particular event. However the use of general knowledge to infer meaning to a novel situation might increase the risk of interpretation error or may elicit inadequately developed coping skills.

Event uncertainty. Event uncertainty, or degree of predictability, introduces the notion of probability as a factor contributing to appraisal. Individuals vary in the way they make probabilistic judgments about events because of the heuristics they apply (Kahneman & Tversky, 1971) and the heuristics appear to be as much characteristics of the individual as they are properties of the event. One reason that event uncertainty may generate appraisals of threat is that it has the effect of disabling the anticipatory coping process. Preparatory coping strategies for anticipating an event's occurrence are generally incompatible with strategies in effect during anticipation of an event's nonoccurrence. Event uncertainty may lead to mental confusion caused by the inability to decide on an appropriate response and by the necessity to consider several possible outcomes. Not knowing if an event will occur generates conflict by initiating a process of appraisal and reappraisal (Abramson, Seligman and Teasdale, 1978; Alloy, 1982; Miller and Seligman, 1982). The intensity of these effects should be correlated with the extent to which the event is appraised as significant.

Temporal factors. Temporal factors influence the appraisal process. Generally when cues signal the imminence of a

threatening event, appraisal becomes more intense. For example when an individual having a high level of involvement in an anticipated event perceives that there is insufficient time available in which to consider alternatives to select the most effective coping strategy the individual will exhibit a hypervigilant, highly stressed decision-making style. In such a pattern of decision-making the individual engages in nightmarish fantasies, ignores evidence that suggests the improbability of catastrophic occurrences and may choose the first alternative that offers an escape from apparent danger, thus ignoring the possible consequences of hasty inappropriate selection of a coping strategy (Janis and Mann, 1977).

Similarly, temporal uncertainty, not knowing precisely when a threatening event is going to happen is stressful when cues indicate that the aversive event is imminent. When an electric shock was used as a stressor the early phase of a laboratory experiment resulted in the manifestation of hypervigilance; the latter phase resulted in avoidant-like coping. It was concluded that temporal uncertainty allowed the individuals to engage in increasingly avoidant behaviours thus progressively lowering the levels of affective arousal (Monat, Averill, and Lazarus, 1972).

Timing of stressful events. The timing of stressful events in an individual's life may influence appraisal (Neugarten, 1979). For example when events are unexpected at the individual's phase of the life cycle the individual may be unprepared to cope effectively and those events may be judged

threatening. For instance, women suddenly widowed at a young age were more stressed than older widows (Blau, 1973) and mothers whose children were still living at home beyond the expected age were found to be stressed (Neugarten, 1979).

Additionally, hidden events, experiences for which no concept exists, such as male menopause, or which are suppressed in thought (Brim and Ryff, 1980) and the timing of stressful events in relation to other events, such as marital breakdown closely followed by childbirth (Brown and Harris, 1978) may increase stress.

Moreover a series of negative events may cause the individual to question their general competence or luck. Each negative event may be interpreted as confirmation of ineptness or bad luck thus imposing a negative perspective on the way the individual views the world. The definition, or appraisal, of an event is directly related to the degree of significance of the event to the experiencing individual. Clearly, whether an event is perceived as significant depends upon the framework of meaning within which the individual interprets the world. The significance of an event may be intensified by the extent to which the situation is ambiguous.

Ambiguity. Situational ambiguity exists when the environmental configuration required for appraisal is unclear. When the data necessary for the evaluation of an event is indefinite or insufficient, the environmental configuration is ambiguous. Under such conditions the interpretation of the event

is more a function of personal characteristics than of objective stimulus constraints (Archer, 1979; Lazarus and Folkman, 1984).

An individual's general knowledge permits appraisal of an ambiguous event to the extent that relevant knowledge has been gained through experience. However, knowing an individual's experiential history is insufficient to predict the interpretations the individual will assign an event. Internal processes, such as defense mechanisms, may mediate the meaning of threatening experiences in memory, thus limiting the information that may be accessed. Knowing the individual's unique framework of meaning permits a higher degree of predictability about the types of appraisals the individual will ascribe particular stressful events and this implies that the knowledge base may be different at different levels of functioning.

It is through experience and conflict that individuals proceed through levels of ego functioning (Loevinger, 1976). Therefore differing levels of ego functioning may be expressed in responses which result from differential knowledge bases. In addition it appears that developmental transformations influence appraisal and coping processes.

Our position assumes the complexity of ego processing may be ordered along a continuum of developmental maturity and that this systematic variance can predict developmental differences in the appraisal of stress and subsequent coping. It is suggested that knowing the stage at which the ego is functioning may facilitate the prediction of those properties of an event that will receive

attention, the type of appraisal the event will elicit and the coping strategy that will be selected to manage the stress.

The extent to which an event is judged threatening or stressful depends upon "a confluence of person and situation factors in a specific transaction" (Lazarus and Folkman, 1984). Although both person and situation variables that affect appraisal must be analyzed and interpreted interdependently, their influence can be evaluated only by measuring them separately.

#### The Concept of Coping

The concept of coping derives from psychoanalytic ego psychology. Coping is defined as the thoughts and actions that are effected to solve problems thereby reducing stress (Lazarus and Folkman, 1984). Both behaviour and cognitive processes are included in the analysis. The processes used to manage person-environment situations have been described as a hierarchy in which coping is the most advanced, or mature, ego process. Less advanced processes are defense mechanisms, neuroses and ego failure or fragmentation (Haan, 1977).

Changes in coping strategies are evidenced in early development as the child's coping repertoire evolves from primitive modes of reacting to using increasingly complex cognitive processes (Murphy and Moriarity, 1976). Further it has been suggested that with age individuals decrease the use of aggressive modes of coping and increase the use of altruism, humour, and suppression (Vaillant, 1977). Interestingly, age

differences in coping are generally not revealed when objective measures of coping are used (Billings and Moos, 1981; Folkman and Lazarus, 1980); type of stress appears to be the most important predictor of type of coping strategy used (McRae, 1982). It may be argued that the decisive factor in coping with stress is the individual's perception, or appraisal, of the event and that this is dependent upon cognitive processes.

### Cognitive Processes

Cognitive processes represent an important factor in the shaping of a coping response. Cognitive activity permits emotions to be evaluated. It has been argued that cognitive appraisal always mediates emotion and that because emotion can affect cognitive appraisal, subsequent perceptual distortion may result in both inappropriate situational appraisal and the initiation of inappropriate coping efforts (Lazarus and Folkman, 1984).

Automatic responses, such as cognitive styles, which may not involve cognitive appraisal, should not be considered forms of coping because they do not require that effort be expended. Cognitive styles are thought to emerge developmentally from the struggle to manage conflict and instinctual impulses safely and effectively under stressful conditions and result in automatic styles of perceiving, thinking and acting (Piaget, 1936). The early stages of acquisition of the skills required for human adaptation require effort, coping processes; the later stages become automatized.

Novel situations elicit coping processes because situational demands exceed the resources of the individual, often necessitating cognitive manipulation and reasoning which reflect levels of maturity (Murphy, 1974). This hierarchical conceptualization implies that an ordered sequence of coping responses may indicate level of maturity. Further, individual coping strategies appear to be somewhat characteristic when the individual is presented similar conflictual situations. Cognitive styles, via their role as control mechanisms, are thought to be the mediators that may account for individual consistency in attitude and may be conceptualized as adaptive processes of ego that facilitate equilibrium when conflict arises between internal pressures and the demands of reality (Gardner, Holzman, Klein, Linton, and Spence, 1959).

Models of coping. Conceptualizations and measures that evaluate coping along a single dimension do not adequately reflect the multidimensional quality of the process invoked to manage stressful situations. Traditional models of coping suggest that ego structures function as stable dispositions over the life cycle and present a perspective of coping as a static concept. This assessment of coping appears to have low predictive value for actual coping processes in specific demand situations (Cohen and Lazarus, 1973). Further, coping with multiple sources of stress requires that a combination of coping strategies be effected simultaneously.

While an individual does not respond to all situations in



predetermined ways preferred modes of coping with similar types of stress are generally exhibited (Gorzynski et al, 1980). There appears to be both stability and change in coping responses, the nature of which may depend upon the level of maturity, or level of ego functioning, reached.

Loevinger's model. The idea of maturity advanced by Loevinger is that of a process of ego development encompassing gradual internalization of social rules with an increasing respect for mutuality. Personal maturity may be conceptualized as intrapsychic differentiation which leads to autonomy and refers to the usual way in which the ego deals with conflict (Helson and Wink, 1987). Loevinger's (1976) conceptualization of maturity suggests a growth of cognitive complexity, tolerance of ambiguity and objectivity. High ego levels have been associated with cognitive (intellectuality) and self-reflective coping (tolerance of ambiguity), reality-oriented and flexible coping (Bond, Gardner, Christian, and Sigal, 1983), and with responsibility, tolerance and sensitivity (Lorr and Manning, 1978; White, 1985) and have been negatively correlated with repression (Holstein, Stroud, and Haan, 1974).

No simple relationship has been found to exist between ego level and adjustment, rather the relation seems to be dependent upon the nature of the variables chosen to represent adjustment and their relevance to the specific characteristics inherent in the ego stage reached (Helson and Wink, 1987). The nature of the coping response may depend upon the particular aspects of the

situation which elicit attention and those aspects vary with ego level; the coping strategy chosen may indicate the relevance of the stimuli to the particular ego stage. Thus individual differences in patterns of coping responses should be associated with individual differences in patterns of ego functioning.

Definition of coping. Coping is defined as a process with multiple functions, having cognitive and behavioural correlates, influenced by the context of the stressful situation, internal or external, that have been appraised as exceeding individual resources, and includes the analysis of individual thoughts and actions under particular conditions. Coping activities are considered to be distinct from automatized responses, require expenditure of effort, and are not equated with mastery over the environment or with adaptational success.

Coping strategies are defined independently of outcome and efficacy and include failures as well as successes (Kahn et al, 1964). Further no particular coping strategy is classified according to any predetermined evaluative criteria. While solving problems may be the desired outcome of a coping effort, not all sources of stress are amenable to solution or fit within a problem-solving framework. Other functions of coping may include tolerating irreconcilable situations and maintaining self-confidence and self-esteem.

Function of coping. The function of coping refers to the purpose that the coping strategy serves, is independent of outcome and is dependent upon context and upon the theoretical

framework in which coping is conceptualized. For example, it has been argued that the primary role of coping may be to evaluate information relevant to decision-making (Janis and Mann, 1977), to reduce tension (Haan, 1977), and to create the motivation to meet environmental demands (Felton, Brown, Lehman, and Liberatos, 1980; Folkman and Lazarus, 1980; Mechanic, 1974).

Coping appears to serve two main functions; managing or altering the person-environment situation to reduce stress (problem-focused coping) and regulating the emotional response to the situation (emotion-focused coping). The former has been equated traditionally with confrontational mechanisms (approach behaviour) but may also include impulse control, and information-seeking. The latter traditionally has been equated with defense mechanisms (avoidant behaviours) and may include altering the meaning or significance of a negative event, avoidant thinking and self-medicating.

Effective coping has been found to incorporate both functions. For example, the use of problem-focused, in particular confrontive, coping strategies has been associated with better adjustment when stressful situations can be altered (Holm, Holroyd, Hursey, and Penzier, 1986). Conversely, when stressful situations cannot be altered emotion-focused behaviours such as denial may serve a positive function. These strategies may help to maintain a sense of well-being in a threatening situation with limited possibilities for direct action which would otherwise be overwhelming (Engood, Holroyd, Frank,

Pilkonis, and Anderson, 1984). Behaviours which may be optimal in one situation may have devastating consequences in another.

Differential coping strategies appear to be, at least partially, a function of individual evaluations of personal investment and of the coping options available. One study which examined intraindividual coping approaches across a variety of stressful situations indicated that coping patterns could be most reliably predicted when self-esteem or the well-being of a loved one were threatened (Folkman, Lazarus, Dunkel-Schetter, DeLongis and Gruen, 1986). Surprisingly, these encounters resulted in two contradictory forms of coping, confrontive coping and escape-avoidance. It was suggested that individuals might alternate coping strategies within an encounter or might behave in a confrontive way while wishing they were elsewhere.

It has been found that four forms of problem-focused coping emerged when encounters were perceived to be amenable to change: confrontive coping, planful problem-solving, positive reappraisal (Folkman and Lazarus, 1980) and accepting responsibility (Bulman and Wortman, 1977). Conversely when events were perceived as unalterable, emotion-focused forms of coping such as distancing and escape-avoidance were used (Folkman et al., 1986). The former type of strategy focuses directly on the situation; the latter strategies are deliberately focused away from the situation. Neither form of coping is inherently more effective or more adaptive than the other.

Choice of coping strategies. The most effective coping

strategy addresses the situation as it affects the individual and employs a pattern of responding that ensures the most satisfactory and desirable outcome. Effective coping strategies are not static but vary to reflect the demands of the situation. Moreover individual differences may account for the selection of one coping strategy instead of another and this selection may not be the most effective.

For example, distancing could be either an adaptive response (Collins, Baum and Singer, 1983) to an unalterable encounter or a maladaptive response used instead of attending to the problem (Katz et al, 1970). Similarly positive appraisal could either facilitate problem-solving or could be a reinterpretation of a situation in which problem-focused effective strategies are replaced by maladaptive defense mechanisms. Although emotion-focused coping strategies may be damaging when they interfere with direct action, they may also be useful under conditions that might otherwise lead to psychological disintegration (Lazarus, 1983). Selection of coping strategies is determined, at least partly, by available resources, skills and beliefs, and commitments and constraints.

Generally it is believed that coping strategies change over the lifespan. These changes may be in response to changes in the perceived source of stress and may have a correlate of maturity rather than be due to a simple temporal effect. A developmental approach will help to identify how changes in cognitive complexity and flexibility are related to changes in the

perceived stressors and appraised meaning of situations.

The general hypothesis of the present research is that under stressful person-environment conditions level of ego development is associated with type of event appraisal assigned and coping strategy selected. The main purpose of the study is to relate individual differences in the choice of responses to stressful life events to a theory of personality so that level of conceptual complexity (the cognitive component) may be used to predict type of coping response (the overt behavioural component) selected. It has been argued that degree of conceptual complexity influences the way personality is organized and parallels maturity of coping strategies (Haan, 1977; Vaillant, 1977). Furthermore it has been suggested that coping strategies may be ordered along a continuum that parallels level of ego development (Labouvie-Vief et al, 1987). However, it is not sufficient to examine only the strategy used; the reasoning employed to arrive at the decision to use the strategy must be included in the analysis. It appears that subjective perception of an event greatly determines subsequent behaviours.

Specifically, the hypotheses are: (a) The type of stimuli within a stressful encounter that receives attention predicts ego level in a way that is congruent with ego level as measured by a sentence completion test, (b) the type of coping strategy used varies with and can predict ego level as measured by the Event Appraisal, (c) the type of coping strategy used varies with and can predict ego level as measured by the Washington University

Sentence Completion Test. In addition the present study has investigated the coping strategies which are expressed under specific environmental conditions, are congruent with level of ego functioning, and are dependent upon cognitive appraisal.

The next chapter describes the methodology used in the present research.

## CHAPTER 3

### METHOD

#### Subjects

Eighty-four undergraduate students from the faculty of Education at McGill University who volunteered for the study served as subjects. There were 44 women and 40 men. The subjects represented six ego levels.

#### Materials

##### Washington University Sentence Completion Test

To assess ego development according to Loevinger's (1976) model a sophisticated scoring system, consisting of a 36-stem sentence completion test has been developed (Loevinger and Wessler, 1970; Loevinger, Wessler, and Redmore, 1970) and has been found to be a reliable and valid measure of the construct.

The Washington University Sentence Completion Test (WUSCT) ascertains "core" level of functioning by assigning the responses to the sentence stems to one of the nine measurable levels of ego development. This categorization is accomplished by comparing the responses given with response categories in a scoring manual (Loevinger, 1985; Loevinger and Wessler, 1970).

The individual is asked to complete each sentence stem in the most appropriate way. Thus the manner in which the sentences are completed should reflect accurately the individual's customary orientation. Each item (stem) is scored separately. In the most frequently used algorithm for deriving an overall score the cumulative frequency distribution of the scores is



matched with a table of values (Loevinger and Wessler, 1970) and the ego development level is calculated according to the configuration of scores which appears. This scoring technique, known as the Total Protocol Rating (TPR) was used in the present study.

Reliability. Initially raters were trained to score the WUSCT by Loevinger and her associates. Subsequently Loevinger and Wessler (1970) constructed a series of exercises consisting of responses to the 36 items and of completed protocols. Raters were thus able to train themselves to use the WUSCT. The interrater correlation between raters trained by Loevinger and her group and self-trained raters was between .89 and .92 (Loevinger and Wessler, 1970). Further reliability studies (Cox, 1974; Hoppe, 1972) are in accord with the finding that when ego level scores are reported by different raters high agreement is maintained and that personally trained raters and self-trained raters may be assumed to have used assessment procedures which are congruent with the procedure developed by Loevinger.

Additionally studies reveal that the scoring procedures maintain consistently high reliability values when various analyses are used. Redmore and Waldman (1985) found that internal consistency coefficients, and split half and test-retest correlations, when subjects were told that the purpose of the retest was to assess the reliability of the scores, were statistically significant and in agreement with earlier studies (Loevinger and Wessler, 1970). However when subjects were not

told the purpose of the retest the scores decreased significantly from the first to the second session. The authors concluded that motivational factors could moderate the sensitivity of the test. This finding implies that changes revealed from one time of testing to another may be a consequence of external factors and underlines the necessity for cautious interpretation of changes in scores which pertain to measure shifts either induced by training or occurring through the course of development.

Recently data from an adult clinical sample (Weiss, Zilberg and Genevro, 1989) and an adolescent clinical sample (Noam and Houlihan, 1990) were found to be consistent with those reported previously by Loevinger and others, thus indicating strong interrater reliability and internal consistency. These findings support the reliability of the measure and demonstrate that the psychometric properties of the WUSCT are not compromised by more than one setting and that the scoring algorithms are not affected by the cognitive distortions which might exist in the responses of a clinical sample. Clearly the WUSCT has been found to be a reliable technique to measure ego development. Furthermore data which indicate that personality scales could predict levels of ego functioning as measured by the WUSCT support this notion (Lorr and Manning, 1978).

### Validity

Empirical studies that examine, if the phenomena measured by the WUSCT are different from those measured by other instruments (discriminant validity), if the WUSCT can imply patterns of

behaviour (predictive validity), and if the WUSCT accurately reflects the theory from which it is derived (construct validity) have been reported:

Discriminant Validity. Evidence suggests associations between ego development and education (Browning, 1987; Hansell, Sparacino, Ronchi and Strodbeck, 1985; McRae and Costa, 1980), and ego development and socioeconomic status (Loevinger, 1979) and that gender differences in ego development may exist among late adolescents (Loevinger et al., 1985). Correlations between ego development levels and intelligence suggest that while some overlap appears to exist in childhood (Blasi, 1972) this may depend upon socioeconomic factors (Hoppe, 1972; Redmore and Loevinger, 1979).

Loevinger and Wessler (1970) found a small but significant correlation between number of words in women's responses and TPR of ego level. In addition responses on the WUSCT were found to correlate well with responses to verbal interviews that were intended to elicit extensive, varied ideas and behaviours. It remains unclear if high verbal fluency is a component of high ego levels, or rather, is an artifact of the testing instrument (Hauser, 1976).

In sum, available data support the claim that the WUSCT does not simply reflect level of intelligence or verbal fluency, but that these measures may influence and/or be influenced by the various levels of ego functioning. Loevinger's conceptualization posits that the relationship between variables and ego stage is

not linear, but rather, is curvilinear, as is implied by a "milestone sequence model (Hauser, 1976); thus the relationship among variables appears to be interactive.

Predictive Validity. Loevinger's model makes no predictions about any relationship between observable behaviours and level of ego development. However she describes particular characteristics of personality manifest at each stage and these patterns should have measurable behavioural correlates. Data from a study of children's modes of taking responsibility (Blasi, 1972) and conforming (Hoppe, 1972) appear to be congruent with the specific behaviours suggested by Loevinger's (1976) conceptions of levels of ego functioning. Furthermore perceived source of stress, type of defense mechanism elicited, and type of coping strategy selected could be predicted by level of ego development (Labouvie-Vief, Hakim-Larson and Hobart, 1987).

Links between ego development and predictable behaviours may be amenable to study only under specific conditions that examine variables which have been determined to reflect those particular characteristics described by various ego levels.

Construct Validity. Construct validity studies of ego development have examined both the construct itself and its measure. For example, several studies by Redmore (1976) indicated that scores on the WUSCT could be lowered but not increased by "faking" responses; however these attempts at lowering scores could be identified. Additionally specific predictions generated by the assumptions of the model have been

investigated. Frank and Quinlan (1976) found that delinquent adolescents were more often at lower ego levels than nondelinquent adolescents of the same gender, social class and ethnic background and Hauser et al (1984) showed that adolescents at higher ego levels used more problem-solving behaviours and contributed more to discussions, and that adolescents at lower ego levels used more constraining behaviours and more redundant speech when discussing moral issues.

Further evidence suggests that ego level may be related to defense mechanisms expressed; total defense scores showed a trend of increasing as ego level increased (Haan et al., 1973), and to conforming behaviour; conforming behaviour showed a systematic increase followed by a decrease with the maximum amount of conformity during the Conformist Stage (Loevinger, 1976) (Haan et al., 1973). Additionally Candee (1974) showed that individuals at different ego levels differentially conceptualized their political activity and Haan et al (1973) found that individuals at different ego levels differentially exhibited moral development (Kohlberg Moral Judgement interview).

In sum when level of ego development has been examined in comparison to specific personality and cognitive variables the results offer limited evidence for construct validity (Hauser, 1976). However data imply that conceptually predicted links may be revealed when behaviours which are generated by the interaction between situational cues and levels of ego development are sought. Additionally behaviours in interpersonal

situations may be predicted by level of ego functioning.

The assumption of invariant order of ego functioning has been investigated. It has been suggested that age may be a necessary but not sufficient condition for the development of higher levels of ego functioning; progressive age differences have been observed at all ages (Loevinger, 1973; Loevinger and Wessler, 1970). Further support for this notion comes from data which showed that ego levels increased during adolescence (Redmore and Loevinger, 1978) and during post-secondary education (Loevinger et al., 1985; Redmore, 1983). Additionally ego level at one school grade predicted ego level at another grade (Redmore and Loevinger, 1978).

In conclusion, empirical evidence for validity has been found in those studies which predict nonmonotonic relationships among ego development and other variables. Conversely little evidence supports the assumption of the invariant order of stages (Hauser, 1976). These data support the need to use an interactive paradigm to reveal links between level of ego functioning and appraisal and coping.

#### Ways of Coping

The Ways of Coping questionnaire (Lazarus and Folkman, 1984b) was developed from the Ways of Coping checklist (Folkman and Lazarus, 1980) and will be referred to as "The Ways of Coping". The Ways of Coping is a self-report measure that requires the individual to indicate on a 4-point Likert scale to what extent the thoughts, feelings and behaviours elicited by a

specific event were experienced. The responses can then be classified according to the coping function they serve (problem- or emotion-focused) and/or the type of coping strategy they are (such as avoidant, information-seeking or another). The instrument contains 67 items that define qualitatively different coping strategies.

The Ways of Coping has been widely applied to examine the strategies that individuals use to manage or alter the internal and/or external demands of a stressful situation. Recent factor analyses suggest that a number of coping scales may be defined (Folkman and Lazarus, 1986a; Vitaliano, Russo, Carr, Maiuro and Becker, 1985): Two of the scales, confrontive coping and planful problem-solving, have been found to have problem-focused functions; four of the scales, distancing, self-control, accepting responsibility, and positive reappraisal were shown to have primarily emotion-focused functions; seeking social support serves both functions. One factor analysis resulted in data which suggested eight coping scales, different from the eight reported by Folkman and Lazarus (1980); another resulted in six factors and eight subscales (Folkman and Lazarus, 1988).

No standard method to score this instrument has evolved. Some investigators have added (McRae, 1984) or deleted (Folkman and Lazarus, 1985; Folkman and Lazarus, 1986a) items dependent upon the particular hypothesis of the study, the subject population, and the type of situation being investigated.

The original internal consistency of items in the Ways of

Coping checklist was assessed by several methods. First, of the original 68 items raters agreed that 27 were problem-focused and 41 were emotion-focused. Second, additional support for the internal consistency of the scales was obtained when subjects were asked to which aspect (the problem itself or the emotional response to it) of each of three stressful situation, they would apply each coping strategy on the checklist (Leigh, 1979). Seventy-eight percent of the items were in accord with the function designated by their scale membership.

Third, a principal components factor analysis calling for two factors supports the rationally derived scale. Of the 27 items classified as problem-focused, 78 percent correlated more strongly with the first factor; of the 41 items classified as emotion-focused, 68 percent correlated more strongly with the second factor. Fourth, if an item correlated very weakly with its scale, its relationship to other items and to the empirical factors, the frequency with which it was used, and its evaluation by the raters was examined. According to this procedure two items from each scale were deleted and one was removed from one scale to the other. Finally, three administrations of the Ways of Coping checklist, not used in the scale revision, were examined. The correlation between the problem-focused and emotion-focused scales confirmed that sufficient variance existed which was not shared, thus supporting both the theoretical and rational reasons to use the two scales independently (Folkman and Lazarus, 1980).



Additionally moderate to high consistency reliabilities have been reported (Aldwin, Folkman, Schaefer, Coyne and Lazarus, 1980; Folkman and Lazarus, 1980) for both the problem- and emotion-focused scales. However the finding that high correlations between problem-focused and emotion-focused coping scales (Vitaliano et al, 1985) suggests that the scales may not be measuring two incongruous coping strategies. Moreover the use of one coping response may lessen the need to use other responses from the same or other categories thus placing limits on internal consistency (Billings and Moos, 1981).

Nevertheless, despite the methodological and psychometric weaknesses of the Ways of Coping, it remains the most widely used measure of coping and modified versions have been used to assess the frequency of a broad range of cognitive and behavioural strategies elicited by specific situations. Because of the lack of empirical support and the low reliabilities of the subscales (Endler and Parker, 1990) it is suggested (Tennen and Herzberger, 1985) that investigators using the scales factor analyze the sample and use these data to generate subscales for the coping items.

While no relationships were found between age and coping in the use of either problem- or emotion-focused strategies, gender differences were demonstrated in emotion-focused coping, but these could be attributed to the source of the threat, or the context in which the threat occurred.

Despite the shortcomings of the Ways of Coping it provides

several advantages: (a) Coping may be assessed as both an intra- and inter-personal event, (b) coping may be assessed in a specific encounter, (c) an individual can indicate as many complex thoughts and actions as are relevant to an event, (d) the measure is easy to use, and (e) the measure is sufficiently indirect that it should be able to tap subjective information. Nevertheless the assessment of coping is subject to the relative efficacy of self-report versus observational and inferential methods (Folkman and Lazarus, 1980).

The next section describes the procedure used in the present study.

#### Procedure

Eighty-four (44 female, 40 male) students from the Faculty of Education at McGill University, who volunteered to be subjects were informed that they would be participating in a research study investigating how people manage stress and were told that they could leave the study at any time. They were then given a package containing a consent form (See Appendix A), a request to describe in writing an emotionally stressful life event which occurred within the last year, Event Appraisal measure (EA), (see Appendix B), the Ways of Coping questionnaire (WOC), (see Appendix C) and the Washington University Sentence Completion Test (WUSCT), (See Appendix D for women; Appendix E for men). Subjects were asked that the tasks be completed and returned within two weeks.

Loevinger's (1985) WUSCT was used to assign subjects to

level of ego functioning. Each sentence completion test was scored according to the nine level classification scheme outlined in the manual. Ogive rules were applied to the frequency distribution of item ratings for each given protocol. Automatic rules for assigning Total Protocol Ratings to the ogive of item ratings were used. Using these rules requires no judgement from the rater other than that used to rate each response. Given an ogive of 36 items only one TPR results. The rules are presented in Table 2 (Loevinger and Wessler, 1978). An overall score or total protocol rating (TPR) was computed on the basis of 36 responses.

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Insert table 2 about here

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The written descriptions which provided the negative event upon which the coping strategy responses of the Ways of Coping were based were analyzed to assess the developmental level (EA) of the described encounter. Those properties of the event which were defined as threatening were ordered along a developmental dimension based on guidelines from Loevinger's (1976) theory of ego development and from a modification of Loevinger's coding scheme (Labouvie-Vief et al, 1987). Thus each stressful event was assigned a single ego-level score (EA) based on the category of the specific stimuli within the event identified by the subjects as causing "mental anguish". The criteria specified for each level are presented in Table 3 as a modification from

Loevinger and Wessler (1978).

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Insert Table 3 about here

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Data from the Ways of Coping were analyzed to reveal the function and the type of coping strategy selected. The Ways of Coping items were analyzed using principal components factoring with oblique rotation (Folkman and Lazarus, 1980).

The data were computed and analyzed to reveal patterns that suggest congruence between the specific modes of performance on the tasks.

In the next chapter the results of the study are reported.

## CHAPTER 4

## Results

As shown in Table 4 each of six ego levels, as measured by the Washington University Sentence Completion Test (WUSCT), were represented: 3 subjects were classified *Self-protective*; 19 *Conformist*; 30 *Self-aware*; 25 *Conscientious*; 5 *Individualistic* and; 2 *Autonomous*. Because the only gender difference observed was between the *Conformist* and the *Self-aware* levels, data for men and women have been collapsed for all further analyses.

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Insert Table 4 about here

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Inspection of the scree plot resulting from the factor analysis on the items of the Ways of Coping yielded five principal components with eigenvalues greater than 2.931. These were subjected to a varimax rotation. The critical value for the factor loadings was computed using the formula  $r = t / \sqrt{t^2 + df}$ . In order to avoid artificially increasing the experiment-wise alpha a Bonferroni correction was computed. Given that there were 67 items and five factors there were a total of 335 factor loadings. Therefore .05 was divided by 335 resulting in a corrected alpha of .00014. Since the t value for df=82 was not available, the z value for alpha=.0001, 3.891, was used. With 82 degrees of freedom the difference between the t value and the z value should be minimal. Therefore the critical value for the factor loadings was  $r = 3.891 / \sqrt{3.891^2 + 82} = 0.395$ . Only factor loadings greater than

$\pm 0.395$  are considered significant. Items that did not load significantly on the first five factors were discarded. All other items including three that loaded on two scales each and eight that loaded negatively were included in the five resultant coping scales. This left a total of 40 items. The five coping scales explained 32% of the variance. The percent of the variance explained by each factor and the factor loadings are shown in Table 5.

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Insert Table 5 about here

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A description of the five coping scales follows:

Escape-avoidance (Scale 1) describes wishful thinking (e.g., "wished that the situation would go away or somehow be over with"; "had fantasies or wishes about how things might turn out"), and self-blame (e.g., "criticized or lectured myself"; "realized I brought the problem on myself"). The combination of these seemingly distinct categories of items suggests an unwillingness to accept responsibility, while maintaining guilt.

Analytic problem-solving (Scale 2) describes deliberate efforts to analyze the situation (e.g., "came up with a couple of different solutions to the problem"; "I tried to analyze the problem in order to understand it better"), coupled with deliberate behavioural attempts to accept (e.g., "I accepted the next best thing to what I wanted"), or alter (e.g., "I stood my ground and fought for what I wanted") it.

Seeking social support (Scale 3) describes efforts to seek emotional support (e.g., "talked to someone about how I was feeling") and to reveal emotions (e.g., "I let my feelings out somehow").

Optimistic reappraisal (Scale 4) describes attempts to create a positive outlook (e.g., "Looked for the silver lining, so to speak; tried to look on the bright side of things"; "I reminded myself how much worse things could be"). Another theme includes an attempt to accept unquestioningly (e.g., as shown by negative loadings for "tried to get the person responsible to change his or her mind"; "I expressed anger to the person(s) who caused the problem").

Denial (Scale 5) describes efforts to repress and escape the effects of the situation (e.g., "didn't let it get to me; refused to think too much about it"; "went on as if nothing had happened"), with a concomitant theme of seeking social interaction (e.g., as shown by negative loadings for "avoided being with people in general").

Relationships were analyzed between (a) ego level as measured by the Event Appraisal (EA) and ego level as measured by the WUSCT, (b) ego level as measured by the EA and the use of coping scales as measured by the WOC, (c) ego level as measured by the WUSCT and the use of coping scales as measured by the WOC. An alpha level of .05 was used in all analyses.

Figure 1 shows the frequency of use of each category of event (as measured by EA) by each of four ego-levels (as measured

by WUSCT).

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Insert Figure 1 about here

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The numbers of subjects rated at ego-levels *Self-protective* and *Conformist* were too small to be analyzed separately. Therefore these levels were collapsed and represented as one ego-level, *CONF*. Similarly subjects rated *Individualistic* and *Autonomous* were collapsed and represented as one ego-level, *IND*. As can be seen in Table 5 ego-level (as measured by the WUSCT) and ego-level at which the threatening event is classified (as measured by the EA) appear to be congruent.

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Insert Table 6 about here

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The Goodman-Kruskal Gamma correlation between ego-level scores as measured by the WUSCT and ego-level scores as measured by the EA was 0.671 and the Chi-Square was reliable at 43.278,  $p=0.000^1$ . This finding suggests that those properties of an event that elicit a threat response, reflect developmental differences and are congruent with the level at which the ego is functioning. Thus the first hypothesis was supported.

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<sup>1</sup>Note that more than one-fifth of fitted cells are sparse (frequency < 5): Significant tests are suspect.



Figure 2 shows the mean frequency of use of coping scales by each ego level (as measured by the EA).

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Insert Figure 2 about here

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Multivariate repeated measures analysis indicated a reliable EA by Coping scale interaction,  $F(4,16)=2.47$ ,  $p=.001$ . A univariate analysis of variance showed that there were differences in the use of coping scales among the EA levels. Post hoc testing using Tukey's HSD revealed that subjects who described events at levels *Self-aware* and *Conscientious* used Analytic Problem-solving more often than subjects who described events at *Conformist* level ( $p=.03$ ;  $p=.048$ , respectively). Differences among ego-level categories emerged only for Analytic Problem-solving. Thus the second hypothesis was partially substantiated.

Figure 3 shows the mean frequency of use of each coping scale by each (WUSCT) ego level.

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Insert Figure 3 about here

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Analysis of variance indicated that the ego levels differed significantly on frequency of use of Analytic Problem-solving,  $F(5,78)=3.22$ ,  $p=0.011$ . Post hoc testing using Tukey's HSD multiple comparisons revealed that ego-level *Self-protective* used Analytic problem-solving less frequently than ego-levels *Conscientious* ( $p=.03$ ) and *Individualistic* ( $p=.004$ ). Again

statistical analyses confirmed that there were differences among ego-levels only in the frequency with which Analytic Problem-solving was used. As was found for the second hypothesis, data revealed partial support for the third hypothesis. This finding of similar responses supports the notion that the EA and the WUSCT are measuring similar attributes.

In the next chapter the research findings are discussed.

## CHAPTER 5

### Discussion

This study suggests that differences in level of personality development could be, at least partially, predicted by variations in the perceptions of the causes of threat and the types of strategies employed to manage the resultant stress encountered during negative life events, but could not be predicted by gender. In addition a measure which appears to have the ability to order individual conceptualizations of real-life negative situations along a developmental dimension has been introduced. The implications of these findings are discussed.

#### Event Appraisal and Level of Ego Functioning

As hypothesized the properties of a negative life event that were defined as threatening could predict level of ego functioning. Types of components of events reported to elicit an appraisal of threat varied differentially with ego level. This is not surprising because the definition of "threatening stimuli" used in this study is based on theoretical considerations described by Loevinger's theory of ego development (Loevinger, 1976; Loevinger and Wessler, 1978).

Individuals who scored at the lower levels of the developmental continuum (*Self-protective* and *Conformist*) classified as threatening those properties of the reported event which: (a) blocked impulses, (b) could have led to being caught, (c) diminished social acceptability or, (d) presented the individual in a non-traditional way. Individuals who scored

around the middle of the continuum (*Self-aware and Conscientious*) listed as threatening properties of an event if they (a) elicited feelings of embarrassment, self-consciousness, and awareness of their own uniqueness, (b) represented missed opportunities for achievement or to help others or, (c) indicated time constraints and lack of organization. Those scoring at the upper levels of development (*Individualistic and Autonomous*) identified as threatening those components of the event that forced the individual to (a) cope with an emotional issue, (b) accept responsibility for the outcome of a self-prescribed decision, (c) acknowledge that an important relationship was changing, (d) acknowledge a heightened sense of social responsibility.

Whether an event is appraised as threatening and which of its facets are identified as causing the perceived threat may depend upon the unique framework of meaning that the individual uses to interpret external cues. This framework of meaning, or worldview, appears to be congruent with the level at which the ego is functioning (Loevinger, 1976). Thus level of ego functioning should influence evaluation and appraisal. The implications of the situation should be evaluated differently depending upon the degree of conceptual complexity in the individual's repertoire. Varying degrees of conceptual complexity influence the perception of stressors in the environment and result in diverse appraisals of similar situations.

Interestingly many similar sorts of experiences were

reported by subjects at various levels of ego functioning, but threatening stimuli varied congruently with the level at which the ego was functioning. For example, subjects at different developmental levels described the termination of a romantic relationship differentially. At ego level *Self-protective* some threatening elements reported were: "afraid of being alone", "thoughts of suicide", "lowered my self-esteem and confidence" and "afraid this love I had for her would make me go back to her". At level *Conformist* some threatening components defined were: "I was told of her plans to get married to someone else", "my male friend was flirting and hitting on my girlfriend and she seemed to like it", "I was completely overwhelmed, unable to sleep, not eating properly and was horribly irritable", "I felt threatening by the fact that she would see other guys", "I wondered what I had done wrong". At ego level *Self-aware* subjects reported stress from: "The thought of her being intimate with someone else... but that someone had a (known) face", "disappointed, defeated and felt that there was no more reason to hope, because I was always disappointed". At ego level *Conscientious* the manner in which subjects expressed perceiving threat included: "I had been lied to and deceived throughout the relationship", "I felt angry with myself, hurt and confused by the actions and attitudes of human beings", "Each of us had differing viewpoints...took it out on each other...not sympathetic or understanding", "my husband told me he had fallen in love with someone...we weren't ever passionately in love, so I could almost

envy him...I don't think my husband ever knew the extent to which I was hurt...his guilt was enough (for him) to deal with". Thus an event will be interpreted in congruence with the array of inferential strategies available and this array varies with the level of conceptual complexity accessible to the individual.

An individual's mode of interpreting the available environmental cues appears to be constrained by the level at which the ego is functioning. An appraisal of threat focuses on the person-environment relationship and includes an awareness of one's own beliefs and goals, perceived opportunities in the environment, including constraints and demands, and the mode of interaction of these factors (Smith, Haynes, Lazarus, and Pope, 1993) and these factors seem to vary congruently with level of ego development.

The mode of interaction of these factors may describe one of the mechanisms by which events are appraised. This mechanism appears to be influenced by the weights individuals assign the various facets of a situation. The weights are thought to reflect the values and commitments that shape an individual's sensitivity to situational cues (King and Sorrentino, 1983). Values and commitments have been shown to vary with level of ego functioning (Candee, 1974; Haan, Stroud and Holstein, 1973; Loevinger, 1976; White, 1985). The findings of the present study indicate that the categories of cues that command attention and elicit appraisals of threat can predict the level at which the ego is functioning. This suggests that cue-sensitivity depends

upon the individual significance of an event and that significant cues vary with level of ego functioning and may be placed along a developmental continuum. Thus the individual's level of maturity appears to influence the selection of the properties of the event that gain access to attention.

These observations support the notion that evaluation and appraisal are ongoing processes that allow an individual to maintain a relationship with the environment that must be continuously monitored and interpreted. Unique modes of monitoring the environment may also vary along a developmental dimension. For example, subjects who reported stressors rated *Conscientious* recounted events that described academic problems and fear of failure more frequently than other types of threat. Subjects who reported stressors rated *Individualistic* often described concern for the well-being of others and a sense of helplessness. Thus it is suggested that the content of the events as well as the stimuli perceived to elicit stress responses may also be ordered along a developmental continuum. Additionally appraisal process appear to mediate between impinging stimuli and distinctive responses to them.

#### Event Appraisal and Ways of Coping

The data showed that differential frequency of use of Analytic Problem-solving could predict level of ego functioning as measured by Event Appraisal. Individuals who reported threatening stimuli rated *Self-aware* and *Conscientious* used Analytic Problem-solving with greater frequency than did

individuals who reported threatening stimuli rated Conformist. The way an event is appraised and the particular facets of the event identified as causal should elicit specific coping behaviours. When the reported stressful elements of an event were congruent with *Self-aware* and *Conscientious* levels of ego functioning they were perceived to be amenable to change (as measured by increased use of Analytic Problem-solving).

Whether an event is perceived to be amenable to change should be influenced by the level of conceptualization at which the individual is functioning and should vary with the inner resources accessible to the individual. The coping behaviours evoked by a stressful episode should be mediated by inner resources. These inner resources might influence the framework in which the individual places the self in relation to the external environment. Thus differential perceptions of the causal agents of stress appear to reflect differentially available resources. The availability of accessible resources and strategies is thought to reflect conceptual capacity and maturity and to vary congruent with level of personality development (Loevinger, 1976).

The finding that individuals at higher levels of ego development choose an analytical approach to manage stress more often than individuals at the lower level suggests that individuals at higher levels of ego functioning have the capacity to appraise threat in the environment objectively and the conceptual maturity to choose, appropriately, either to accept



the situation or to alter it. This observation may illustrate why more mature individuals appear to have the ability to appraise oneself and tasks objectively, to show insight and adopt reality-oriented adaptive styles (Allport, 1961) and to be committed to internal, self-generated standards (Loevinger, 1976). Thus the ability to manage stress appropriately may depend upon levels of conceptual capacity and maturity and these should be congruent with ego level.

Furthermore limits in conceptual capacity should constrain the ability to perceive alternatives and to generate multiple solutions. In support of this notion the data showed that generally only those individuals functioning at the higher ego levels perceived the possibility that the threatening elements of a negative situation were amenable to manipulation in order to achieve a desired outcome. At least two explanations may account for this finding: (a) individuals at higher levels of ego functioning may perceive that the event has an internal cause, and (b) individuals at higher levels of ego functioning may have an internal locus of control. Both these explanations imply that individuals at higher levels perceive that the problem encountered has an observable cause and a solution and attribute to themselves the capacity to find the cause and effect the solution. Thus more developmentally mature individuals appear to demonstrate greater flexibility in their approach to coping possibly because they perceive that they have more control over the outcome of the encounter. This is an important consideration

because the subjective perception of the degree of success of the outcome of an event may impact on well-being and may correspond to the developmental level at which the event is encoded.

Evidence has been presented that distinct components of events identified as stressors which may evoke distinct coping strategies and that these appear to be congruent with developmental level. In addition the data suggest that at higher levels of ego functioning individuals have greater conceptual capacity; that this capacity implies the availability of a greater array of coping strategies; and, that this larger repertoire contributes to an individual's perception of personal control, thus facilitating a more flexible approach to stress management. It is suggested that the subjective experience of external reality may be objectified by close examination of the environmental stimuli that gain access to attention.

#### Sentence Completion Test and Ways of Coping

Individuals who scored high on the developmental dimension of ego functioning (*Conscientious* and *Individualistic*) were found to use Analytic Problem-solving as a coping behaviour more than those scoring at a low level (*Self-protective*). This result is in accord with the notion that limits in conceptual capacity constrain the ability to perceive multiple alternatives and to generate numerous solutions to manage a stressful situation. The *Self-protective* stage is characterized by opportunistic concerns involving banal feelings, stereotypy, the use of cliches, exploitation, and manipulation. At the levels of *Conscientious*

and *Individualistic* concerns involve respect for others and for mutuality, self-criticism, long-term ideals, distinctions between process and outcome, and the ability to perceive patterns.

Thus more developmentally mature individuals may employ coping strategies that appear to have less self-centred, more long-term effects than do individuals who are less developmentally mature.

One explanation for this finding is that more mature individuals are thought to have greater capacity to make independent autonomous decisions (Bakan, 1966). In addition more mature individuals appear to have a tendency toward more internality as measured by the locus of control dimension (Rotter, 1966) and perceive themselves as confident and effective (White, 1985). Evidence for this notion is revealed by an inspection of the items loading on the Analytic Problem-solving scale. Items such as: "Tried to get the person responsible to change his or her mind", " I made a plan of action and followed it" and, "Changed something so things would turn out all right" indicate a belief in one's own ability to generate and execute effective solutions.

More mature individuals may have the ability to evaluate environmental conditions using a more objective perception of reality. As the transition from lower to higher levels of development occur the individual becomes increasingly concerned with deeper problems, in a broader scope, becomes increasingly able to recognize and accept conflict as part of the human condition, and makes a conscious effort to be realistic and

objective. Further the more mature individual accepts that not all problems have viable solutions. (Loevinger, 1976).

Additionally more mature individuals may have the capacity to comprehend that there are alternative perceptions and interpretations of the presenting problem; thus they may be more sensitive to and more willing to tolerate others' viewpoints even when those viewpoints are in conflict with their own. This notion is supported by items loading on the Analytic Problem-solving scale such as: "Bargained or compromised to get something positive from the situation", "I accepted the next best thing to what I wanted" and, "I tried not to act too hastily or follow my first hunch".

These data underline the need to examine traditional conceptions of what constitutes a mature approach to coping and whether coping strategies may be placed along a continuum. One traditional conceptualization of coping derives from ego psychology and evaluates responses according to criteria based on ideas about healthy and pathological functioning. The criteria determine the position of the coping behaviour along a developmental continuum. This view posits that the appropriateness of a coping strategy is determined by the event outcome, its long-term effects and the extent to which the strategy appears to adhere to reality. The central theme of this conceptualization is that the use of coping strategies which are ranked lower along the continuum are inherently maladaptive and reflect low levels of ego functioning. Conversely, the concept

of the present study views coping efforts as the thoughts and actions that are mobilized to manage the psychological stress when particular problems are present in the environment (Lazarus and Folkman, 1984). No attempt has been made to evaluate either the efficacy or appropriateness of the coping strategy in its context or of its outcome. No coping strategy has been viewed as inherently more effective than another. No attempt has been made to predict future coping responses.

#### The Coping Scales

The present study has found that reliable differences only in the frequency with which analytical problem solving strategies are effected could be predicted by ego level. Conversely Labouvie-Vief, et al (1987) concluded that differences congruent with level of ego development existed in the frequency of use of several coping scales. However that study used composite sets of variables such as, ego level and source of stress, and coping and defense, to account for differences in developmental maturity.

The lack of differential use of the coping scales underlines a need to investigate the composition of the scales used in this study. An examination of the items that loaded onto the scales and how those scales may relate to Loevinger's definitions of ego functioning follows.

Scale 1 (Escape-avoidance) presents an image of self-blame, wishful thinking and ambivalence toward the roles played by others during the encounter. According to Loevinger's (1976) theory the disparate themes included in this scale may not be

relevant to only one or, few ego levels, but instead, may be found in equal measure across several levels of development.

Scale 3 (Seeking social support) describes the coping efforts of an individual who requires and actively seeks emotional support and readily reveals emotions. The finding of no developmental variation is in accord with that of Labouvie-Vief, et al. (1987) who found no developmental differences in frequency of use of a similar coping scale.

Our finding of no developmental differences for Coping scale 4 (Optimistic reappraisal) is surprising. This scale defines optimism, acceptance and hopefulness and should be strongly related to higher developmental levels (Loevinger, 1976; Loevinger and Wessler, 1978). Participants, typically first year students, may be experiencing ongoing lifestyle changes and may be compelled to make decisions about their future orientations more often at this time in their lives than at other times. Therefore the strategies encompassed by Optimistic reappraisal should be characteristic of all the developmental levels represented in the present study.

Scale 5 (Denial) indicates denial with efforts to maintain social support. It has been suggested (Haan, 1977; Vaillant, 1977) that the less mature individual uses coping mechanisms such as denial more often than the more mature individual. Data from this study failed to show such an effect. This finding may be due to insufficient subjects operating at the lower levels or the collapsed items loading on Denial may be associated with varying

stages of maturity. Interestingly three of the eight items loading on Denial loaded negatively. Each of these items describes a coping strategy an individual would not be likely to choose; this may reduce the capacity of the scale to classify different developmental levels.

#### Level of Ego Functioning

The observation that men and women obtain levels of ego functioning which are either the same or within one level of each other during the university years is consistent with the findings of Loevinger et al. (1985). Conversely gender differences in this developmental system favouring adolescent women have often been shown (Hauser et al., 1979; McCammon, 1981; Redmore and Loevinger, 1979). For example, Cohn (1991), using the WUSCT, found that gender differences in personality development arose in late childhood, were moderately large and, relatively stable in adolescence, declined during the college years and disappeared entirely during the post-college years.

It has been suggested that the variance in personality development may be attributable to one of the following factors: That women mature (a) cognitively; (b) physiologically; (c) socially; earlier than men. However Hyde and Linn, (1988) in a review of 165 studies, could find no gender differences in vocabulary skills or reading comprehension, both skills that might affect responses on the WUSCT. Thus it seems unlikely that cognitive abilities alone could account for gender differences in personality development.

Earlier physiological maturity has been proposed as an explanation for the apparent capacity of women to attain higher levels of ego functioning earlier than men. This implication is based on the observation that pubertal changes occur in women approximately two years earlier than they occur in men (Petersen and Crockett, 1985). However this account presumes that psychological maturity accompanies physiological maturity. Furthermore that there exists a relationship between puberty and level of ego functioning is unknown.

The third explanation proposes that gender differences in personality development may be related to gender differences in social experiences. For example, Lever (1978) observed qualitative gender differences in the spontaneous play activity of fifth-grade children. He concluded that, typically, girls' play encouraged the development of impulse control and interpersonal awareness more than boys' play, two attributes associated with personality development (Loevinger, 1976).

Additionally, in early childhood and adolescence, men may be encouraged to adopt an achievement-oriented position, possibly restricting interpersonal interaction. Accordingly they may fail to distinguish between behaviours which are competitive and behaviours which are impulsive. Impulsive behaviours are rated at lower ego levels. Conversely, in early childhood and adolescence, women may be encouraged to develop interpersonal skills and awareness, thus increasing their capacity to tolerate others and to achieve early impulse control. The ability to



understand and accept others' viewpoints and to control impulsive behaviours are correlated with higher ego levels.

It has been suggested that while female adolescents consistently reach the milestones of ego development earlier than male adolescents this gender difference disappears after high school (Loevinger et al, 1985). This factor is important because the minimum age of the participants in the present study was 19 years. High school subjects who participate in studies of ego development may be assumed to be younger than 19. Therefore the participants in the present study appear to represent a group of men and women who should have reached equivalent milestones of ego development and would not be expected to exhibit gender differences. These data are in accord with the notion that men and women from diverse backgrounds reach identical levels of ego functioning although the patterns of growth and maturity may differ.

In the next section the findings of the study are summarized and conclusions are presented.

#### Conclusion

The present study has focused on the efficacy of individually perceived sources of threat and the coping efforts thus elicited to predict level of ego functioning. In general the data suggest strongly that components of a situation differentially appraised as threatening and, to a lesser extent, that the resultant coping efforts evoked, reflect the level at which the ego is functioning.

In addition the Event Appraisal measure has been introduced and it has been shown that this method reliably produces results which reflect levels of ego functioning that correspond to those produced by the Washington University Sentence Completion Test. Typically individuals scored within the same developmental category, whether this dimension was measured by the WUSCT or the EA.

Although the EA is based on the same theoretical properties as the WUSCT it is not constrained by the same parameters as a sentence completion task. Individuals have the opportunity to describe an event and list its threatening components without restricting the category of event they report or the length of the narrative. They are unobstructed to select from an array of life experiences to discuss and may address only those components of the event that they perceive to be relevant. Nonetheless these data offer evidence that level of ego functioning may be predicted from the identification of the specific stressors within a negative event. Both the WUSCT and the EA provide efficient methods of evaluating ego development, supporting the view that ego level is a robust concept. The WUSCT measures level of ego functioning by examining the types of responses individuals use to complete stimulus ideas; the EA measures level of ego functioning by examining the types of stimuli individuals appraise as causing threat.

Cognitive appraisal appears to be the expression of the individual significance of life events and stresses. Because

appraisal is a direct measure of the unique experience of a situation, it represents a method for objective, systematic investigation of the psychological level of development of the personality. Thus the EA measure appears to provide a useful tool to order the individual interpretation of impending threat in a real-life situation along a developmental dimension. This method facilitates an objective interpretation of a subjective perspective and should have wide applicability in demonstrating individual assessments of real-life situations on a developmental dimension.

Another important contribution of the EA is that it appears to have the ability to access and identify threatening stimuli without need to refer to an age-related stressor hypothesis. Conversely it has been suggested that types of events perceived to be stressful vary with chronological age as a function of age-determined expectations (Folkman and Lazarus, 1980). The EA measure has the capacity to categorize "threat" stimuli as they vary congruent with developmental level rather than chronological age.

Taken together the findings strongly support the notion of a developmental component to attributions of threat, suggesting that the appraisal process varies in congruence with changes in conceptual complexity.

Furthermore it is suggested that ego level is congruent with the types of coping strategies that an individual perceives as accessible and thus may choose to implement. The present study

has shown that an analytical problem-oriented approach to coping with threat is the preferred mode of response of individuals at higher levels of ego development. This coping strategy appears to reflect the level of character development reached, the cognitive concerns held, and the mode of interpersonal interactions habitually practised by the individual.

The type of coping strategy used may impact on the individual's perception of the event outcome and ability to respond to similar stressors in the future. Thus impaired functioning may be the result of past failure to respond to negative circumstances with appropriate coping efforts. This is a significant observation because the perceived outcome of a negative event may vary congruent with conceptual capacity and may have important implications for the subjective perception of well-being.

Both appraisal and coping are definable mechanisms that may predict event outcome. Clearly the way a negative event is resolved has great impact on the way future events, both similar and dissimilar, will be interpreted and managed. Furthermore the significance of the event and its outcome should influence the individual's concept of self-efficacy. Therefore appraising a negative event and resolving it appear to be interdependent experiences having both internal (person) factors and external (situation) factors exerting significant influence.

No substantial gender differences in level of ego development have been found in the present study. This is

interesting because gender differences in developmental maturity have been well documented (Cohn, 1991). One explanation for this finding is that Loevinger's WUSCT (1976) was originally validated on samples of women only, introducing a possible methodological bias to explain emerging gender differences. Another explanation posits that early socialization of gender roles and appropriate gender-dependent behaviours may impact strongly on personality.

Some possible determinants that may contribute to the way that personality development is expressed in the evaluation of a negative life situation and in the choice of strategies to manage the resultant stress have been defined. Nonetheless this study underlines the need for further examination of relevant issues.

#### Limitations of the Study and Considerations for Future Research

One restriction of the present study is that limited differences were found in the frequency with which the coping scales were used. Ego levels varied significantly in the frequency of use of only Analytic Problem-solving.

One possible explanation for the inability of the present study to reveal differences in the use of many coping scales may be that the lack of participants at the extremes of ego development may inhibit the ability of the scales to differentiate among users. It is expected that variation would have been revealed among more groups in the use of the coping scales if the numbers of subjects in the ego groups were increased.

Typically the coping scales in the present study include

items referring to emotional functions. The majority (88%) of the participants were classified at the *Conformist*, *Self-aware*, or *Conscientious* levels of development. Because these ego levels are in sequence, differences among them in emotional behaviours, may not have been exhibited.

Another limitation of the present study involves the similarity of the chronological ages of the participants. Most subjects were between 20 and 25 years of age. This observation offers another possible interpretation for the finding of few substantial differences in the use of the coping scales. It may be that these women and men have not become sufficiently skilled at using social and emotional support to manage stress (Folkman and Lazarus, 1988), notwithstanding the level at which the ego is functioning.

Another restriction of the study is that the subjects represent a narrow selection of the general population. Because all participants were students in the Faculty of Education there may exist some shared unspecified influence on the subjective view of the self and the external environment. These men and women may impose similar frameworks of meaning on experience because they have been exposed to similar educational experiences. Thus it might be expected that similar patterns of responding to life experiences would be found.

The present study may be limited by an inability to differentiate between levels of ego functioning of women and men. Several factors may have contributed to the essential absence of

gender differences in ego levels. Typically subjects had been exposed to similar educational experiences, the perceived significance of which may have been sufficient to negate earlier existent discrepancies due to differential gender training. The impact of these influences may have been to generate similar attitudes and responses among female and male students who are at parallel stages of maturity in their educational development. This study has found that women and men appear to exhibit similar levels of ego functioning during the university years.

In addition to defining those areas in which limitations may exist, the present study has identified several factors that require careful consideration and further research.

For example, an assessment of the role that emotions play in the appraisal of an event might reveal some answers about differential perceptions of similar events and of the role played by ego level. A widely held belief posits that emotions are dependent upon and are preceded by the appraisal of the significance of an event as it pertains to well-being. Coping has generally been viewed as a response to emotion dependent upon available coping options (Lazarus, Averill and Opton, 1970; Lazarus, Kanner, and Folkman, 1980). However an ego psychology model of coping (Vaillant, 1977) includes cognitive processes such as, denial, repression and suppression that are evoked to reduce anxious, or emotional, states that are thought to impede effective coping.

Nevertheless the relationship between emotion and coping may

not be unidirectional. For instance, the appraisal of an event as threatening elicits an emotional response. Both the appraisal and the congruent emotional state influence the coping process. Once coping strategies are evoked the person-environment relationship is altered. Thus coping may be viewed as a mediator of emotion which may affect the way an ongoing episode is reappraised and may elicit a transformed emotional response (Folkman and Lazarus, 1988).

Clearly coping behaviours that are generated during a stressful encounter are associated with a wide spectrum of ongoing emotions. The extent to which the effects of coping and the accompanying emotions are context-dependent, developmental in origin or, to which one is the cause or the effect of the other is not clear. If an understanding of how ego functioning (personality) moderates coping strategies is to be achieved the mediating role played by appraisal must be examined. This dictates acknowledging that the emotional response impacts on both the appraisal of an event and the resulting coping efforts. Conceptualizations of coping should emphasize the influence of emotions on coping and of coping on emotions.

Additionally future research should include direct assessments of outcomes of real-life negative events. Investigations that focus on the effect that the outcome of one negative event has on a similar later-encountered negative event are warranted. Similarly special attention should be paid to the extent to which appraisal and coping strategies may have changed,



relative to the first episode of a particular type of event, when a similar stressful event is encountered, the extent to which these changes are moderated by ego level and, the extent to which outcomes subjectively judged to be effective are moderated by ego level.

Classification of negative events as they illustrate individual levels of self-esteem, self-efficacy, self-awareness ability to express emotion, ability to sustain intimacy in interpersonal relations, and social and achievement needs should extend the comprehension of the mechanisms by which personality (ego level) affects appraisal and coping. Additionally the type of event an individual appraises as threatening should also reveal level of personality development. Individuals at different levels of development may experience similar events but may select differentially those events that are judged to be threatening. The EA provides an instrument by which different categories of experience may be systematically studied.

Another area of attention for future research is the way in which variations in lifestyle may correspond to developmental level and whether these variations can be predicted by appraisal and coping strategies. This type of investigation requires that all participants be exposed to similar events and that the responses of various distinct, predetermined lifestyle groups be compared. Systematic variations in threat appraisal would suggest that lifestyle influences appraisal. Differences in appraising a predetermined event as threatening and differences

in identifying the particular stressors may be expressions of variations in the synthesis of person (lifestyle) factors and situational factors. The present study has shown that the type of stimuli that are identified as threatening agents may be placed along a developmental continuum, congruent with ego level. Therefore variations in threat appraisal due to lifestyle should also reflect level of ego functioning. Such a study would add valuable information about how personality mediates the appraisal of threat.

Many factors have been delineated as potentially influencing the individual stress response and these appear to be expressions of inner functioning. A richer understanding of the extent to which these factors affect responding to stress is especially important if progress is to be made in the development of effective individually adapted strategies for managing stress in real-life situations. The challenge of managing stress-related problems remains an important incentive for research which has as its goal the improvement of the quality of life.

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## Appendix A

Consent Form

I have been informed that the research in which I will participate is part of a doctoral dissertation for the Department of Educational and Counselling Psychology and that the purpose of the research is to examine some of the ways people manage stressful situations that occur in their lives. I have been informed that my participation requires me to write a short description of a life event and to complete two questionnaires, that I may complete these in any location convenient to me, and that the total time involved to complete the tasks should not exceed 30 minutes. I have been advised that all information I provide will be treated with complete confidentiality and anonymity, that I am free to withdraw from the project at my discretion at any time, and that no risks or deception are involved. I am aware that I may expect frank and sufficient answers to any questions I may have concerning the research and my participation.

I agree to participate in this research and allow any information I provide to be used in any way deemed appropriate by the researchers responsible for this project.

**NAME** (Please print)

**SIGNATURE**

Please circle one    **MALE**        **FEMALE**

Appendix B  
Event Appraisal

Describe briefly an emotionally stressful event (one which caused you mental anguish) that occurred within the past year. Discuss what about the event made you feel most uncomfortable or threatened, how it made you feel, and what you did to manage the stress.

## Appendix C

Ways of Coping

Please read each item below and indicate, by circling the appropriate category, to what extent you used it in the situation you have just described.

	Not used	Used Somewhat	Used quite a bit	Used a great deal
1. Just concentrated on what I had to do next-the next step	0	1	2	3
2. I tried to analyze the problem in order to understand it better.	0	1	2	3
3. Turned to work or substitute activity to take my mind off things.	0	1	2	3
4. I felt that time would make a difference-the only thing to do was wait.	0	1	2	3
5. Bargained or compromised to get something positive from the situation.	0	1	2	3
6. I did something which I didn't think would work, but at least I was doing something.	0	1	2	3

	Not used	Used Somewhat	Used quite a bit	Used a great deal
7. Tried to get the person responsible to change his or her mind.	0	1	2	3
8. Talked to someone to find out more about the situation.	0	1	2	3
9. Criticized or lectured myself.	0	1	2	3
10. Tried not to burn my bridges, but leave things open somewhat.	0	1	2	3
11. Hoped a miracle would happen.	0	1	2	3
12. Went along with fate; sometimes I just have bad luck.	0	1	2	3
13. Went on as if nothing had happened.	0	1	2	3
14. I tried to keep my feelings to myself.	0	1	2	3
15. Looked for the silver lining, so to speak; tried to look on the bright side of things.	0	1	2	3
16. Slept more than usual.	0	1	2	3



	Not used	Used Somewhat	Used quite a bit	Used a great deal
17. I expressed anger to the person(s) who caused the problem.	0	1	2	3
18. Accepted sympathy and understanding from someone.	0	1	2	3
19. I told myself things that helped me to feel better.	0	1	2	3
20. I was inspired to do something creative.	0	1	2	3
21. Tried to forget the whole thing.	0	1	2	3
22. I got professional help.	0	1	2	3
23. Changed or grew as a person in a good way.	0	1	2	3
24. I waited to see what would happen before doing anything.	0	1	2	3
25. I apologized or did something to make up.	0	1	2	3
26. I made a plan of action and followed it.	0	1	2	3

	Not used	Used Somewhat	Used quite a bit	Used a great deal
27. I accepted the next best thing to what I wanted.	0	1	2	3
28. I let my feelings out somehow.	0	1	2	3
29. Realized I brought the problem on myself.	0	1	2	3
30. I came out of the experience better than when I went in.	0	1	2	3
31. Talked to someone who could do something concrete about the problem.	0	1	2	3
32. Got away from it for a while; tried to rest or take a vacation.	0	1	2	3
33. Tried to make myself feel better by eating, drinking, smoking, using drugs or medication.	0	1	2	3
34. Took a big chance or did something very risky.	0	1	2	3
35. I tried not to act too hastily or follow my first hunch.	0	1	2	3
36. Found new faith.	0	1	2	3

	Not used	Used Somewhat	Used quite a bit	Used a great deal
37. Maintained my pride and kept a stiff upper lip.	0	1	2	3
38. Rediscovered what is important in life.	0	1	2	3
39. Changed something so things would turn out all right.	0	1	2	3
40. Avoided being with people general.	0	1	2	3
41. Didn't let it get to me; refused to think too much about it.	0	1	2	3
42. I asked a relative or friend I respected for advice.	0	1	2	3
43. Kept others from knowing how bad things were.	0	1	2	3
44. Made light of the situation; refused to get too serious about it.	0	1	2	3
45. Talked to someone about how I was feeling.	0	1	2	3
46. Stood my ground and fought for what I wanted.	0	1	2	3

	Not used	Used Somewhat	Used quite a bit	Used a great deal
47. Took it out on other people.	0	1	2	3
48. Drew on my past experiences; I was in a similar situation before.	0	1	2	3
49. I knew what had to be done, so I doubled my efforts to make things work.	0	1	2	3
50. Refused to believe that it had happened.	0	1	2	3
51. I made a promise to myself that things would be different next time.	0	1	2	3
52. Came up with a couple of different solutions to the problem.	0	1	2	3
53. Accepted it, since nothing could be done.	0	1	2	3
54. I tried to keep my feeling from interfering with other things too much.	0	1	2	3
55. Wished that I could change what had happened or how I felt.	0	1	2	3

	Not used	Used Somewhat	Used quite a bit	Used a great deal
56. I changed something about myself.	0	1	2	3
57. I daydreamed or imagined a better time or place than the one I was in.	0	1	2	3
58. Wished that the situation would go away or somehow be over with.	0	1	2	3
59. Had fantasies or wishes about how things might turn out.	0	1	2	3
60. I prayed.	0	1	2	3
61. I prepared myself for the worst.	0	1	2	3
62. I went over in my mind what I would say or do.	0	1	2	3
63. I thought about how a person I admired would handle this situation and used that as a model.	0	1	2	3
64. I tried to see things from the other person's point of view.	0	1	2	3

	Not used	Used Somewhat	Used quite a bit	Used a great deal
65. I reminded myself how much worse things could be.	0	1	2	3
66. I jogged or exercised.	0	1	2	3
67. I tried something entirely different from any of the above. (Please describe).	0	1	2	3

## Appendix D

WUSCT F

1. When a child will not join group activities
2. Raising a family
3. When I am criticized
4. A man's job
5. Being with other people
6. The thing I like about myself is
7. My mother and I
8. What gets me into trouble is
9. Education
10. When people are helpless
11. Women are lucky because

12. A good father

13. A girl has a right to

14. When they talked about sex, I

15. A wife should

16. I feel sorry

17. A man feels good when

18. Rules are

19. Crime and delinquency could be halted if

20. Men are lucky because

21. I just can't stand people who

22. At times she worried about

23. I am



24. A woman feels good when
25. My main problem is
26. A husband has a right to
27. The worst thing about being a woman
28. A good mother
29. When I am with a man
30. Sometimes she wished that
31. My father
32. If I can't get what I want
33. Usually she felt that sex
34. For a woman a career is
35. My conscience bothers me if

36. A woman should always

## Appendix E

WUSCT M

1. When a child will not join group activities
2. Raising a family
3. When I am criticized
4. A man's job
5. Being with other people
6. The thing I like about myself is
7. My mother and I
8. What gets me into trouble is
9. Education
10. When people are helpless
11. Women are lucky because

12. A good father
13. A girl has a right to
14. When they talked about sex, I
15. A wife should
16. I feel sorry
17. A man feels good when
18. Rules are
19. Crime and delinquency could be halted if
20. Men are lucky because
21. I just can't stand people who
22. At times he worried about
23. I am

24. A woman feels good when
25. My main problem is
26. A husband has a right to
27. The worst thing about being a man
28. A good mother
29. When I am with a woman
30. Sometimes he wished that
31. My father
32. If I can't get what I want
33. Usually he felt that sex
34. For a woman a career is
35. My conscience bothers me if

36. A man should always

Table 1

Some Milestones of Ego Development\*

Stage	Character Development	Interpersonal Style
Presocial		Autistic
Symbiotic		Symbiotic
Impulsive	Impulsive, Fear of retaliation	Receiving, dependent, exploitive
Self-protective	Fear of being caught, Opportunistic, Externalizing blame	Exploitive, wary, manipulative
Conformist	Conformity to external rules, shame, guilt for breaking rules	Belonging, superficial niceness
Self-aware	Differentiation of norms, goals	Helping, aware of self in relation to group
Conscientious	Self-evaluated standards, self-criticism, guilt for consequences, long-term goals, ideals	Intensive, responsible, mutual, concern for communication
Individual-istic	Respect for individuality	Dependence as an emotional problem
Autonomous	Coping with inner conflict, toleration	Respect for autonomy, interdependence
Integrated	Reconciling inner conflicts, renunciation of unattainable	Cherishing of individuality

table continues

Table 1 (continued)

Stage	Conscious Preoccupations	Cognitive Style
Presocial Symbiotic Impulsive	Self vs. non-self Bodily feelings (sexual and aggressive)	Stereotyping, conceptual confusion
Self- Protective Conformist	Self-protection, advantage, control, wishes, things Appearance, social acceptance, banal feelings, behaviour	Conceptual simplicity, cliches, stereotypes
Self-aware	Adjustment, problems, reasons, opportunities	Multiplicity
Conscientious	Differentiated feelings, motives, self-respect, achievements, traits, expression	Conceptual complexity, idea of patterning
Individual- istic	Differentiation of inner from outer life, social problems	Distinction of process and outcome
Autonomous	Vividly conveyed feelings, integration of physiological and psychological, role conception, self in social context, psychological causation of behaviour	Increased conceptual complexity, broad scope, tolerance for ambiguity, objectivity
Integrated	Identity	

\* Adapted from Loevinger, 1976.



Table 2

Automatic Rules For Assigning Total Protocol Ratings to The Ogive  
of Item Ratings

TPR is:	If there are:
I-6	No more than 34 ratings at I-5
I-5	No more than 31 ratings at I-4/5
I-4/5	No more than 30 ratings at I-4
I-4	No more than 24 ratings at I-3/4
I-3/4	No more than 21 ratings at I-3
I-2	At least 5 ratings at I-2
Delta	At least 6 ratings at Delta
Delta/3	At least 6 ratings at Delta/3

Note: The present study includes the following rating:

I-3	Less than 6 ratings at Delta/3, more than 21 ratings at I-3
-----	--

Ratings for this study:

I-6=Integrated

I-5=Autonomous

I-4/5=Individualistic

I-4=Conscientious

I-3/4=Self-aware

I-3=Conformist

I-2=Self-protective

Delta=Self-protective

Delta/3=Self-protective

Table 3

Stimuli Causing Mental Anguish

<u>Ego Level</u>	<u>Type of Stimuli</u>
Self-Protective	Blocking of egocentric impulses Perception of powerlessness, others perceived to be overpowering Inability to accept blame Getting caught
Conformist	Loss of social acceptance Concern with physical appearance Inability to maintain traditional sex roles Loss of friends through physical separation
Self-aware	Self-consciousness, loneliness, social embarrassment Awareness of uniqueness Missed opportunities to succeed Missed opportunities to help others Awareness of multiple alternatives
Conscientious	Awareness of time limitations Difficulties remaining organized Striving to achieve Responsibility for others Dependence issues
Individualistic	Accepting responsibility for outcome of own decisions Attempts at coping emotionally Change in interpersonal relationships Awareness of effect on others Internalization of conflict
Autonomous	Acknowledging multiple causes of stress Social responsibility

Table 4

Level of Ego Functioning (WUSCT) by Gender

Ego Level	Women	Men
Self-protective	2 (4.5%)	1 (2.5%)
Conformist	7 (16%)	12 (30%)
Self-aware	19 (43%)	11 (28%)
Conscientious	13 (30%)	12 (30%)
Individualistic	3 (6.8%)	2 (5%)
Autonomous	0	2 (5%)
Total	44	40

Table 5

Variance Explained by Factors

Coping Scale	Eigenvalues	% of Variance explained
Scale 1 (Escape-avoidance)	5.906	7.177%
Scale 2 (Analytic problem-solving)	4.452	7.434
Scale 3 (Seeking social Support)	4.148	5.789
Scale 4 (Optimistic reappraisal)	3.527	5.649
Scale 5 (Denial)	2.931	5.242

## Factor 1 (Escape-avoidance)

Item	Item Loading
58. Wished that the situation would go away or somehow be over with.	.607
9. Criticized or lectured myself.	.559
59. Had fantasies or wishes about how things might turn out.	.556
11. Hoped a miracle would happen.	.533
51. I made a promise to myself that things would be different next time.	.518
29. Realized I brought the problem on myself.	.511
24. I waited to see what would happen before doing anything.	.470

table continues

## Factor 1 (continued)

Item	Item Loading
21. Tried to forget the whole thing.	.449
47. Took it out on other people.	.448
4. I felt that time would make a difference the only thing to do was wait.	.410

## Factor 2 (Analytic Problem-solving)

## Item

52. Came up with a couple of different solutions to the problem.	.711
26. I made a plan of action and followed it.	.641
35. I tried not to act too hastily or follow my first hunch.	.564
27. I accepted the next best thing to what I wanted.	.512
10. Tried not to burn my bridges, but leave things open somewhat.	.510
39. Changed something so things would turn out all right.	.476
49. I knew what had to be done, so I doubled my efforts to make things work.	.475

table continues

## Factor 2 (continued)

Item	Item Loading
2. I tried to analyze the problem in order to understand it better.	.470
46. Stood my ground and fought for what I wanted.	.458
5. Bargained or compromised to get something positive from the situation.	.454
7. Tried to get the person responsible to change his or mind.	.442
54. I tried to keep my feelings from interfering with other things too much.	.440

## Factor 3 (Seeking social support)

Item	
45. Talked to someone about how I was feeling.	.704
28. I let my feelings out somehow.	.673
43. Kept others from knowing how bad things were.	-.515
14. I tried to keep my feelings to myself.	-.484
37. Maintained my pride and kept a stiff upper lip.	-.468

table continues

## Factor 4 (Optimistic reappraisal)

Item	Item Loading
15. Looked for the silver lining, so to speak: tried to look on the bright side of things.	.713
17. I expressed anger to the person(s) who caused the problem.	-.585
65. I reminded myself how much worse things could be.	.584
19. I told myself things that helped me to feel better.	.552
7. Tried to get the person responsible to change his or her mind.	-.460
36. Found new faith.	.431
23. Changed or grew as a person in a good way.	.410

## Factor 5 (Denial)

Item	Item Loading
2. I tried to analyze the problem in order to understand it better.	.470

table continues

## Factor 5 (continued)

Item	Item Loading
41. Didn't let it get to me; refused to think too much about it.	.675
3. Turned to work or substitute activity to take my mind off things.	.609
13. Went on as if nothing had happened.	.609
40. Avoided being with people in general.	-.530
22. I got professional help.	-.446
54. I tried to keep my feelings from interfering with other things too much.	.441
46. I stood my ground and fought for what I wanted.	-.437
53. Accepted it, since nothing could be done.	.406



Table 6

Table of Frequencies

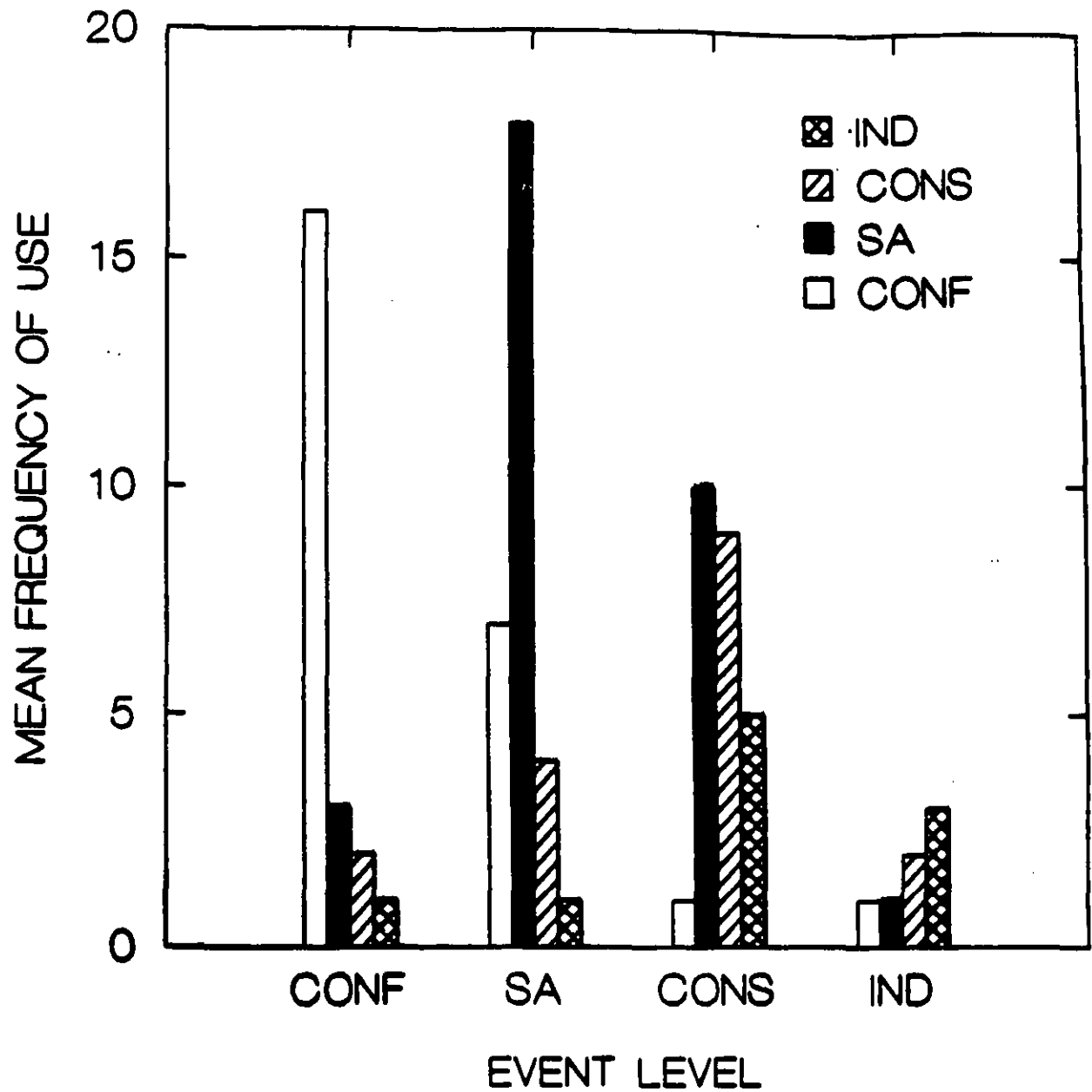
Ego Level by WUSCT	Ego Level by EA			
	CONF	SA	CONS	IND
CONF	16	3	2	1
SA	7	18	4	1
CONS	1	10	9	5
IND	1	1	2	3

CONF=Conformist

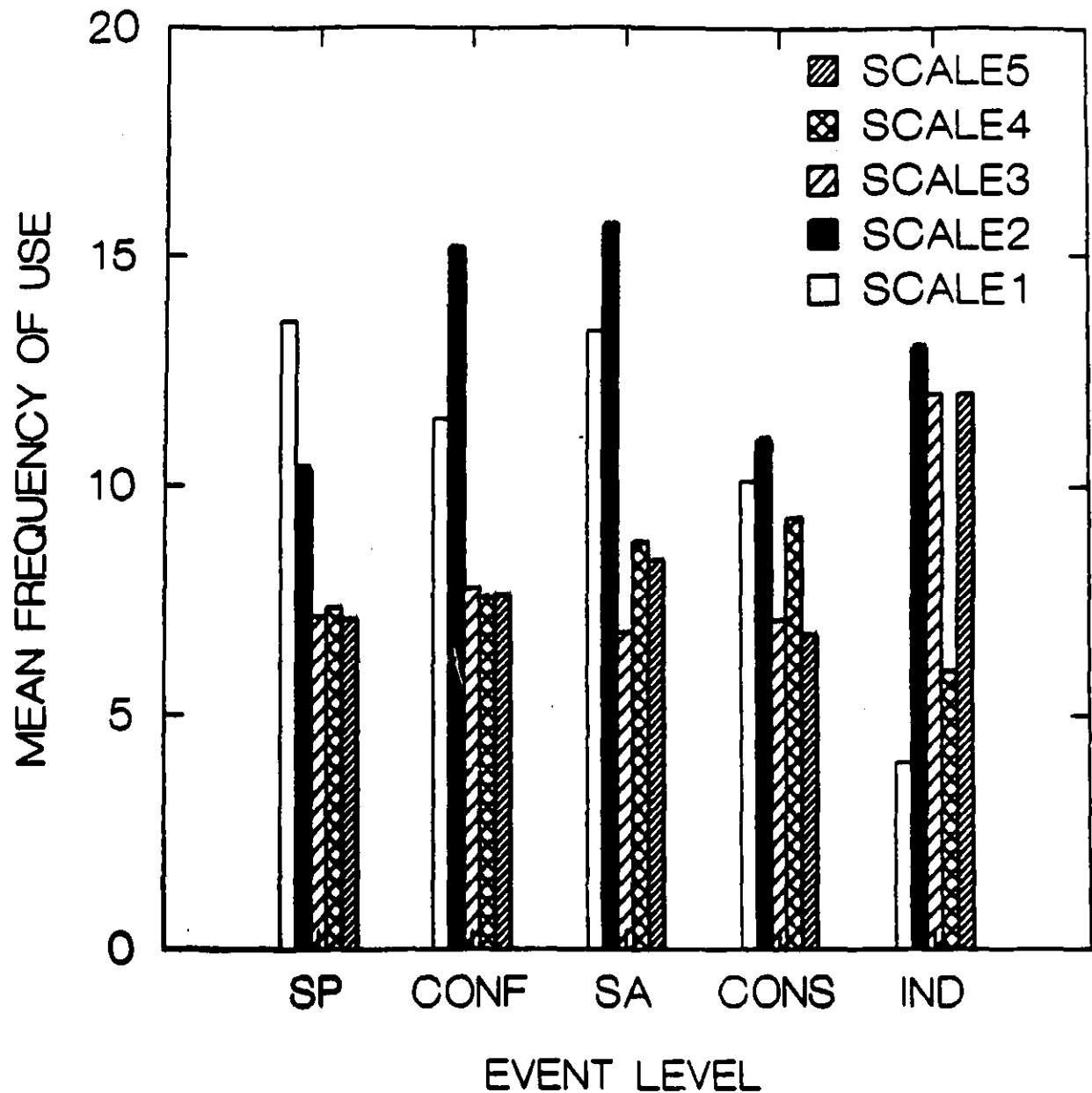
SA=Self-aware

CONS=Conscientious

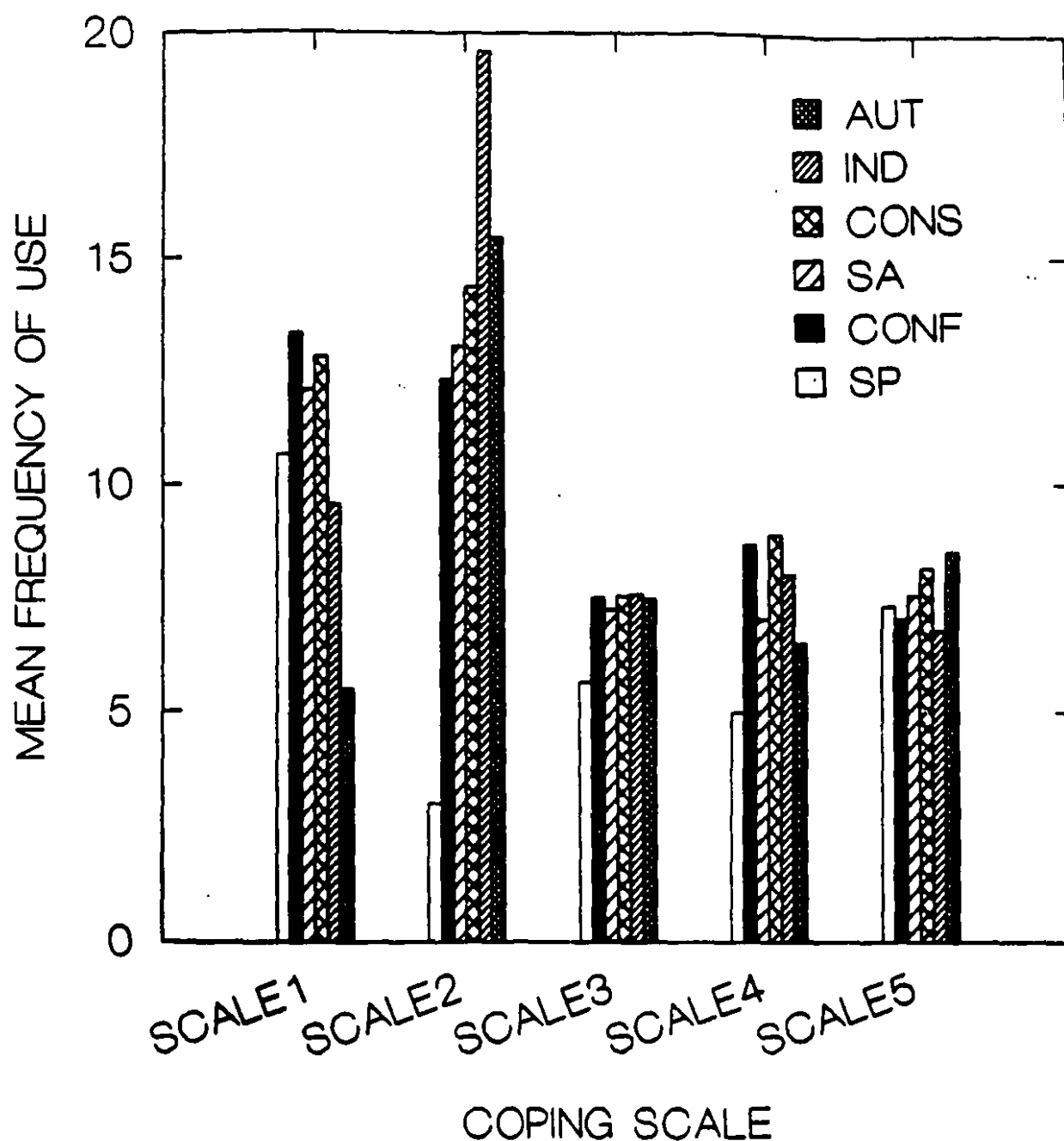
IND=Individualistic



**Figure 1.** Mean frequency of use of each category of event as defined by EA for each of four ego levels as measured by WUSCT. CONF=Self-protective and Conformist, SA=Self-aware, CONS=Conscientious, IND=Individualistic and Autonomous.



**Figure 2.** Mean frequency of use of each coping scale for each of five ego levels as measured by EA. SP=Self-protective, CONF=Conformist, SA=Self-aware, CONS=Conscientious, IND=Individualistic. Scale1=Escape-avoidance, Scale2=Analytic Problem-solving, Scale3=Seeking social support, Scale4=Optimistic reappraisal, Scale5=Denial.



**Figure 3.** Mean frequency of use of each coping scale for each of six ego levels as measured by WUSCT. CONF=Conformist, SA=Self-aware, CONS=Conscientious, IND=Individualistic, AUT=Autonomous. Scale1=Escape-avoidance, Scale2=Analytic Problem-solving, Scale3=Seeking social support, Scale4=Optimistic reappraisal, Scale5=Denial.