An Investigation of Adolescent Constructs of Stress and Academic Achievement

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Abstract

The present study was a phenomenological investigation of adolescent constructs of stress and academic achievement. The study utilised a modified version of George Kelly’s Repertory Grid Technique to provide direct insight into adolescent stress and academic achievement.

The premise of the study was that only students who exhibited extreme cases of stress and academic achievement levels would be examined. The investigation identified and examined the adolescents who exhibited these extremes and explored the underlying constructs that defined these differences. It was expected that if adolescents were able to identify the stressors in their lives, how these stressors affect their lives, and how these stressors affect their academic performance, then suggestions could be made to help students to better cope with stress and to improve their academic achievement level.

Further, based on the results of the study, the pedagogical implications for classroom research are provided. Phenomenological inquiries, using modified, and less complex versions of the repertory grid, can be conducted pre-, mid-, and postacademic terms, to determine and to monitor the stressors and the academic performance of the students in a classroom. Specific assessments for individual students will help teachers to better exercise their knowledge and understanding of the realm of teaching and learning strategies (e.g., Gardiner’s Multiple Intelligences) that exist.
Acknowledgements

To Lorne, my mentor and friend; from this experience I take with me a quote you once passed on, “The urge to quit is a signal that an opportunity to excel is at hand.” Thank you for your constant guidance and re-assurance.

To my family; your constant support has encouraged me to pursue my goals. To you I dedicate this thesis, and with you I celebrate the honour.

To Jason, thank you for your patience and understanding.
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CHAPTER ONE: BACKGROUND

Introduction

This manuscript outlines a qualitative, phenomenological investigation of adolescent constructs of stress and academic achievement. Millstein (as cited in Millstein, Petersen, & Nightingale, 1993) suggested that the accuracy with which adolescents perceived their health status (i.e., stress) and related consequences (i.e., academic performance) was viewed inconsistently among researchers. Despite these discrepancies, Epstein (1973) recognised that phenomenological inquiry was dependent on the notion of the self-concept. He suggested that the self-concept was a central concept in psychological perspective, and that the self-concept was the only position from which an individual's behaviour could be learned, in great depths (p. 404).

Consistent with the notions of discovery through the self-concept and phenomenological investigation, Mechanic (1983), as well as Millstein and Litt (1990, as cited in Millstein et al., 1993) suggested that adolescents exaggerated their stress-related symptoms due to self-conscious and introspective states. In contrast, others contended that adolescents minimised their stress-related symptoms through denial and insufficient coping strategies (Millstein, as cited in Millstein, Petersen, & Nightingale). Consistent with these theories, Bandura (1982) posited that an increased self-efficacy enabled an individual to master challenges. Further, individuals who appraised their coping skills as inadequate, and who interpreted situations to be more difficult than they really were, became most stressed. This stress decreased individual perseverance and eventually decreased performance attainment (Bandura).

In order to make it possible to gain valuable information about what was in and
on the minds of the adolescent informants (i.e., through an investigation of self-concept) with respect to self-efficacy and coping skills, the qualitative interview was used. This process of interviewing, through phenomenological investigation, made it possible for the participant to bring the researcher into his or her "world", and to examine the ways in which these participants construed or interpreted these worlds.

Background of the Problem

Uncertainty, insecurity, stress, identity crisis, and confusion have often been triggered between the ages of 12 and 18 years by major life changes (i.e., physical, psychological, cognitive, and social). These changes have identified a complex stage of human development referred to hereafter as adolescence. Some researchers posited that it was unlikely that an individual would undergo greater alterations at any other stage of the life cycle (e.g., Coleman, as cited in Coleman, 1992). Others suggested that although adolescence was a turbulent stage of development, it was no more disruptive than any other stage (e.g., Lau, 1990).

Nonetheless, researchers contended that adolescence would be more enjoyable if adults were able find a balance between offering direction and guidance, and providing room for the adolescent to exercise these opportunities (Bibby & Posterski, 1992). That is, adults should provide adolescents with the help that is needed to move into adulthood, while maintaining the good sense to provide them with the opportunity to develop their own entrance into the adult world (Bibby & Posterski).

Researchers have also stated that very little was known about the events that belonged to the normal course of an adolescent’s day (e.g., Seiffge-Krenke, 1995), and
that more accurate indicators of these events were necessary (Daniels & Moos, 1990). Further, it was evident in the literature that perception played a significant role in adolescent stress (e.g., A. Allen & Hiebert, 1991; Bandura, 1982). Researchers contended that perception of daily hassles, major life events, availability of social networks, and appraisal of coping capabilities by adolescents was influential in determining individual perseverance and performance attainment (Bandura, 1982). The misjudgement of personal efficacy has been thought to produce adverse effects on an individual. Therefore, accurate appraisal of one’s own abilities was identified to be an important determinant of adolescent success (Bandura).

Although the “theory of perception” has been investigated in some studies, individual constructs of lived experiences based on these perceptions have not been examined. George Kelly (1955) introduced the personal construct theory, which reiterated that individual perceptions (i.e., how individuals made sense of, or construed some things as alike and yet different from others) were fundamental in an adolescent’s personal construct. Consequently, this theory offered an approach to psychological inquiry in which investigators did not prejudge the limits of exploration (Button, as cited in Button, 1985). Rather, the personal construct theory was used to develop an understanding of the eccentricity of how adolescents construed their life worlds, based on the contexts of stress and academic achievement.

Consistent with the qualitative nature of this investigation, in combination with the personal construct theory, Millstein (as cited in Millstein et al., 1993) suggested that phenomenological studies may be acceptable alternatives to large-scale surveys and
quantitative methodologies, and that they may help researchers to capture the essence of adolescence. In the past, studies of adolescence have implemented large-scale strategies, in part because this type of data collection allowed researchers to gather large amounts of data from large numbers of subjects quickly and cost-effectively (Millstein, as cited in Millstein et al., 1993). Despite the successes achieved by these means of data collection, it has been suggested that “attending to adolescents’ viewpoints . . . [supported] the underlying philosophy that the beliefs and attitudes of youth [were] inherently important and worthy of consideration” (Millstein, as cited in Millstein et al., 1993, p. 114). Thus, phenomenological inquiry (i.e., the essence of experience of stress and academic achievement [Patton, 1990]) has offered researchers an alternative to studying adolescence, one that complements the personal construct theory (Kelly, 1955).

Statement of Problem Situation

The present study required that the participants self-identify the stressors which they perceived to have had the greatest effects (i.e., positive, and/or negative) on their lives. It was understood that these stressors might or might not have been consistent with the literature. However, it was contended that through self-identification, and through phenomenological inquiry, a more relative and in-depth psychological analysis of these adolescent subjects would be realised. Consistent with the literature was the notion of perception. It was recognised that, although individual reactions to stressors (i.e., daily hassles and life events) would be similar, individual perceptions of these stressors would be unique. Consequently, individuals self-identified relevant life stressors and constructed their lived experiences quite differently.
The notion of stress on academic performance was also examined. Of interest were that some students who perceived their stress levels as high may have also perceived their academic achievement levels as high (high stress-high achiever [HS-HA]). In contrast, students with similar perceptions of high stress levels may have perceived their academic achievement levels as low (high stress-low achiever [HS-LA]). Further, some students may have perceived themselves as low stress individuals, yet may have performed well academically (low stress-high achiever [LS-HA]), while other students may have perceived themselves as low stress, and may have performed poorly academically (low stress-low achiever [LS-LA]).

Additionally, the investigation identified the similarities and the differences that existed within the personal constructions of individuals among the four extreme case groups (i.e., HS-HA, HS-LA, LS-HA, and LS-LA). These variables were measured in terms of individualised identification of the elements (i.e., stressors), individualised construction of these stressors, and individualised effects of stress on academic performance. Further, the use of Kelly’s personal construct theory (1955), whereby individuals were asked to construe their individualised worlds, helped to develop an understanding of the nature of stress and of stress on academic performance in adolescence.

Purpose of the Study

The purpose of this study was threefold. Primarily, the study intended to identify extreme case adolescents from among the selected sample. Specifically, these extreme cases were the following: (a) high stress-high achievers; (b) high stress-low achievers;
(c) low stress-high achievers; and (d) low stress-low achievers. The study then proposed to have the extreme case adolescents (n=9) identify the stressors which were associated with their individual adolescent development. There was also a need to recognise the way in which these adolescents perceived the stressors that they identified, using the personal construct system and repertory grids designed by Kelly (1955). Finally, the researcher intended to examine the relationships that existed between the identified stressors, the personal constructs around these stressors, and the effects of these stressors on academic performance.

Research Questions

This investigation proposed to identify and examine the adolescents who exhibited the four identified extremes of behaviour, and to examine the underlying constructs which contributed to these differences. A phenomenological inquiry was used to provide rational, logical, and thorough responses to the following research questions:

1. What determines the "extreme" nature of these adolescents (i.e., HS-HA, HS-LA, LS-HA, and LS-LA)?
2. What were the common stressors that affected grade 9 students?
3. Were the identified stressors consistent with the literature?
4. How did adolescents construct or interpret the stressors in their lives?
5. Was an adolescent's academic performance affected by stress?
Definitions of Relevant Terms

**Adolescence** refers to the stage of life that begins with puberty and ends at a time when the individual becomes reasonably independent of his/her parents (Offer, Ostrov, Howard, & Atkinson, 1988).

**Adolescents** refer to grade 9 students from 12 to 14 years of age.

**Stressors** refer to the cause of a stressful reaction (i.e., peers, family).

**Stress** refers to the reaction or the condition suffered as a result of an imposed stressor (Selye, 1976).

**High stress** refers to a student whose perceived stress level was above 7.0 on a 10-point visual analogue scale.

**Low stress** refers to a student whose perceived stress level was below 3.0 on a 10-point visual analogue scale.

**Element** refers to the stressors from which individuals have drawn their constructs.

**Construct** refers to an interpretation made about events or things (Mancuso & Adams-Webber, 1982).

**Construing (the act of)** refers to "the act of placing an interpretation ... upon what is construed" (Kelly, 1955, p. 50).

**Academic performance** refers to the ability of an individual to be successful academically, as confirmed by self-perception and teacher confirmation.

**High achiever** refers to a student whose academic average was self-perceived as above 80%, and was indicated as such (above 7.0) on a 10-point visual analogue scale.
Low achiever refers to a student whose academic average was self-perceived as below 60%, and was indicated as such (below 3.0) on a 10-point visual analogue scale.

Repertory grid the instrument used to record and to rank the elements and the constructs of each participant.

Rationale

Studies of adolescent stress are not uncommon. Research has typically focused on stressors (i.e., daily hassles and life events), and social supports (including coping mechanisms). Many studies have also examined the effects of perception on individual reactions to stressors and on individual access of coping resources. Despite these investigations, no studies have used phenomenological inquiry or the notion of the self-concept to identify and examine the ways in which adolescents constructed the stressors that impacted their lives and their academic performance. The application of Kelly's personal construct theory (1955) was expected to provide direct insight into adolescent stress from the most reliable and relevant sources. It was also expected that if students were able to identify the stressors in their lives, how these stressors affected their lives, and how these stressors affected their academic performance, suggestions might be made which would help adolescents to cope successfully with these stressors.

Theoretical Framework

Since ancient times, philosophers have attempted to look in on their own thoughts and values to become better acquainted with themselves and with people in general. This new introspection gave rise to inquiries about how much introspection could achieve. Most often, exercises, questionnaires, and inventories, aimed to help people in their
search for self-understanding, presented respondents with hypothetical situations for which responses had to be invented rather than recalled (Candy, as cited in Mezirow, 1990). Further, some inventories ‘put words into the respondent’s mouth’, seeking reactions and responses that were not natural to the person. In light of the obvious inaccuracies surrounding some psychological testing, Kelly developed an “approach to understanding how people [thought and felt] about aspects of their world” (Candy, as cited in Mezirow, 1990, p.273). This personality theory was referred to as the personal construct theory (Kelly, 1955).

The personal construct theory was devised to provide unity in the experience of each individual (Adams-Webber, 1979). The basic ideology of this theory was derived from a philosophical assumption referred to as “constructive alternativism” (Adams-Webber). The foundation of the constructivist’s view was that knowledge was not a copy of reality, but rather a construction of experiences. Thus, the interaction that occurred between an individual and the environment was mediated by the cognitive interpretations of the individual. Consequently, man did not respond to the environment, rather, he construed it (Mancuso & Adams-Webber, 1982).

In this constructive theory of personality, man was viewed as “man the scientist”. Kelly (1955) contended that man did not learn from the nature of the stimuli, but from how his cognitive framework allowed him to represent and anticipate events from within the stimuli. Thus, the befitting model of human nature for psychology was not the “organism”, but the scientist (i.e., man) who interpreted and predicted events about the organism (Adams-Webber, 1979).
In his words, Kelly stated:

Whatever nature may be, or howsoever the quest for truth will turn out in the end, the events we face today are subject to as great a variety of constructions as our wits will enable us to construe. This is not to say that at some infinite point in time human vision will not behold reality out to the utmost reaches of existence.

But it does remind us that all our present perceptions are open to question and reconsideration, and it does broadly suggest that even the most obvious occurrences of everyday life might appear utterly transformed if we were inventive enough to construe them differently. (1970, as cited in Adams-Webber, 1979, p. 1)

In this statement, Kelly posited that reality did not directly reveal itself to us, but that it was subject to as many successive ways of construing it as could be invented. This implied that we do not react to external stimuli, but to our interpretations of them. These reactions were illustrative of the diversity of human experience (Mancuso & Adams-Webber, 1982).

The Importance of the Study

This investigation was a significant step forward in adolescent stress research, in theory and in practice. Since no other studies examined the ways in which adolescents construed their life worlds with respect to stress and academic achievement, the

1Author's Note: The masculine gender is used herein, to keep in context with Kelly's original work. This does not suggest that the content is not relevant to both males and females (Mancuso & Adams-Webber).
implications for further research in this area, and in related areas, were remarkable. If adolescents, parents, guardians, teachers, and other significant figures are made aware of how adolescents view and are impacted by their lived experiences, then efforts may also be made to understand and to help students to cope with these stressors (e.g., via a stress management program). This investigation was intended to enhance the following: (a) educational research; and (b) individualised adolescent exploration.

The process of this study may be applicable to classroom settings during pre-, mid-, and post-academic terms, to determine and to monitor the stressors and the academic performance of the students who participate. The results of this investigation may contribute to the development of school-related programs (i.e., guidance programs, and self-attribution programs); to address the inevitable stressors experienced during adolescence; and to identify effective strategies to cope with these stressors.

In addition to providing school boards with the opportunity to focus on strategies and help networks for student access, this type of phenomenological investigation may also offer educational professionals the opportunity to record academic progress (pre-, mid-, and post- each academic year) based on the results of stress management programs. Further, educational professionals may employ personal construct psychology to chart students from grade 9 through grade 13, with respect to their personal stressors and their academic performance. The use of repertory grids and the personal construct system would be useful to record the changes that occur in individual adolescents across time as their educational pursuits continue. This investigation may also help adolescents to better understand themselves, as well as their perceptions of and reactions to the stressors that
they encounter in their lives. The opportunity to examine one’s personal repertory grid with an educational professional may allow adolescents to explore, in great detail, the influential variables in their lives.

Scope and Limitations of the Study

The sphere of observation in the present study was adolescent stress. Three significant subcomponents lent depth and detail to this variable of interest. These subcomponents were: (a) The personal construct theory; (b) the specific levels of stress (i.e., high and low); and (c) the specific levels of academic achievement (i.e., high achievers and low achievers). The intent of the study was to examine the relationship between the variable of interest (i.e., adolescent stress) and each of these subcomponents.

Inasmuch as adolescents between 12 and 14 years of age were thought to undergo tremendous alterations in development, the researcher developed an investigation that was intended to explore and expose a number of influential variables to explain these alterations. These variables included the stressors that affected the informants, the ways in which the informants construed these stressors, and how these stressors impacted the academic performance of each informant. The strategy of the investigator was to examine those individuals who, according to researchers (e.g., Brightman, 1990; Compas, Wagner, Slavin, & Vannatta, 1986; Curtis & Adams, 1991), would experience the greatest state of developmental turmoil. Consistent with the literature, adolescence was the focus of the study.

The present study withstood a number of limitations. These limitations set the parameters within which the study occurred. Among these limitations were: the
theoretical framework from which the investigation was derived (i.e., the use of the personal construct theory to examine stress and academic achievement in adolescence); the notion of extreme case sampling, whereby students were categorised according to stress and academic achievement; the issue of credibility (i.e., perceptions were made by the informants, the researcher, the teachers, and the impartial observers, rather than by quantitative methods of analysis); the number of subjects (i.e., extreme case sampling, n=9); and the type of data collection procedures implemented (i.e., the visual analogue scale [VAS] and the informal conversational interview [ICI]).

Outline of Remainder of the Document

Chapter One

This first chapter has outlined the background of the problem under investigation. The researcher has also provided a statement of the problem situation and the research questions surrounding this problem, the purpose of the study, the rationale for the investigation, as well as a brief description of the theoretical framework under which the study was conducted. Further, definitions of the relevant terms have been provided, as have the implications for, and the limitations of, the present investigation. Subsequent chapters address adolescent stress under greater scrutiny, and discuss the related literature, the methodology and results of the present investigation, and a number of recommendations for future research.

Chapter Two

Chapter Two serves to familiarise the reader with the related literature around adolescence, stress, academic achievement, and personal construct psychology. This
chapter also establishes and explores the need for an investigation of adolescence and the personal construct system, and reveals the foundation for the framework used in the present study.

Chapter Three

The ideology of the present phenomenological investigation is addressed in Chapter Three. That is, the methods used and the reasons for the implementation of these methods are discussed. The instrumentation and the procedures used for the purposes of data collection are also outlined and explained. In addition, a content analysis, and a series of focus grids, via cluster analysis are detailed in this chapter. Themes are derived from the cluster analysis and are articulated in this chapter.

Chapter Four

Chapter Four provides a detailed review of the research findings from the qualitative investigation. Students' data are profiled and the salient features from each individual profile are identified (i.e., within-case analysis). Further, a comparison of the salient features across all student profiles (i.e., cross-case analysis) reveals appropriate qualitative themes within the data. Appropriate tables are included to supplement the research findings.

Chapter Five

Chapter Five provides a summary of the investigation. Conclusions are made about the results of the study and about the relation of these results to the literature reviewed. The implications of the research for practice and theory are discussed, as are
recommendations for future research in phenomenological inquiry, using the personal construct system (Kelly, 1955).
CHAPTER TWO: REVIEW OF THE RELATED LITERATURE

An Introduction to Adolescence

Adolescence is the stage of life that begins with puberty and ends at a time when the individual becomes reasonably independent of his/her parents (Offer et al., 1988). Often characterised as a period of turmoil, adolescence is a unique transitional stage of development that presents young adults with challenge and opportunity (Offer et al.). During this period of the life cycle, individuals are expected to develop a sense of individuality. They are expected to establish resiliency, self-confidence, and self-concept, to make important decisions about their future, to adjust to the intricate changes in relationships with others, and to free themselves from the early attachments to their parents (Elliot & Feldman, 1990; Offer et al.). Consequently, it was suggested that adolescence is a time of enjoyment, expanding horizons, and self-discovery. However, the profound physical, psychological, cognitive, and social changes which occur as maturation begins, coupled with stressful life events (i.e., daily hassles, major life events) may also make this stage a period of frustration, anger, loneliness, and rejection.

The following literature review discusses the areas that are affected by the changes that occur during adolescence. In addition, the notion of stress and academic achievement are examined as are the variables which are affected by, and/or that have had an effect on, stress and academic achievement. Further, Kelly's theory of personal construct systems (1955) was reviewed in order to provide some insight about how individuals construct (i.e., perceive and interpret) their experiences and how these experiences are categorised within the corollaries of the personal construct theory.
The Personal Construct Theory

In order to make sense of the personal construct theory it is necessary to define the terminology that is applied by theorists to explain the systems of personal constructs. "In its minimum context a construct is a way in which at least two elements are similar and contrast with a third" (Kelly, 1955, p. 61). By definition, a construct refers to an interpretation that is made about events or things (Mancuso & Adams-Webber, 1982). In addition, elements are the things or events from which constructs are derived (Kelly, 1955). In context, elements refer to individual stressors.

The theory of personal construct systems was based on one fundamental postulate and 11 associated corollaries. The fundamental postulate contends that a "person's processes are psychologically channelized by the ways in which he anticipates events" (Kelly, 1955, p. 46). In context, a postulate was a basic assumption. That is, it preceded the logical truths identified in scientific inquiry. Consequently, in order for a statement to remain a postulate, the truths about it could not be questioned. However, it was also to be understood that the postulate was not an ultimate statement of truth; rather it was a tentative statement of truth which was to be investigated (Kelly, 1955). More simply, Kelly suggested that we would better understand human behaviour and experience if we were to see it as the consequence of anticipating future events (i.e., everyday actions and experiences), and not as an individual's reaction to a stimulus (Button, 1985).

Herein, a corollary is the natural consequence (of anticipation; R.E. Allen, 1991). The 11 corollaries, or propositions, introduced by Kelly (1955) were: (a) Construction; (b) dichotomy; (c) range; (d) choice; (e) organization; (f) fragmentation; (g) experience;
modulation; (9) individuality; (10) commonality; and (11) sociality. The personal construct theory assumed that people anticipated events, and that human behaviour and experiences were the consequences of these anticipations. The subsequent corollaries outline the circumstances under which the fundamental postulates (i.e., assumptions) occur.

Construction Corollary

Construction occurs when “a person anticipates events by construing their replications” (Kelly, 1955, p. 50). That is, the recurrent themes within an individual’s experiences are recognised. For example, in the stream of life, some common recurrent themes were: days, breakfasts, songs, and happiness, among others (Button, 1985). These themes are never identical; however they share common recurring features. It is human nature to divide the experiences that occur within these themes into categories referred to as “events”. Once an event is interpreted, it becomes a construct, bipolar in nature. When individuals become familiar with the process of structuring their experiences in this way (i.e., forming bipolar constructs), they are able to anticipate and make predictions about behaviour. In turn, the anticipation of behaviour may affect individual events, individual interpretations, and individual consequences of these events (Button, 1985).

Dichotomy Corollary

“A person’s construction system is composed of a finite number of dichotomous constructs” (Kelly, 1955, p. 59). Although individuals often refer to constructs as unipolar (i.e., something is “bad”, or something is “dark”), there is always an implicit
opposite pole, which is defined by the individual (e.g., bad – not bad, or bad – good). The distinction of these poles is based on experiences, and on the replication of events. As a result, the implicit pole of the construct suggests that at some time the individual has had an experience that went wrong.

**Range Corollary**

"A construct is convenient for the anticipation of a finite range of events only" (Kelly, 1955, p.68). A construct’s range of convenience consists of all elements to which it is applied. That is, some individuals determine boundaries of convenience about their constructs beyond which some elements do not fit (Button, 1985). For example, if examinations was an element of adolescent stress, then it could be construed as long exams versus short exams. Similarly, assignments can be construed as long assignments versus short assignments. In contrast, if acne was identified as an element of adolescent stress, then it would clearly be outside of the range of convenience of long versus short.

**Choice Corollary**

"A person chooses for himself that alternative in a dichotomized construct through which he anticipates the greater possibility for extension and definitions of his system" (Kelly, 1955, p.64). This corollary suggests that individuals have a choice as to which pole of a bipolar construct is more appropriate (e.g., to smoke cigarettes or to join a fitness club). At this time, individuals are expected to choose to extend their system (take risks), or to define it (play it safe; Button, 1985), whereby they may chose to “stay with their misery rather than risk the uncertainty of living without it” (Button, p. 9).
Organization Corollary

"Each person characteristically evolves, for his convenience in anticipating events, a construction system embracing ordinal relationships between constructs" (Kelly, 1955, p.56). This corollary contends that not only do people differ in their constructions of events, but they also differ in the ways that they organise these constructions. That is, conflicts are resolved in one way at one time, and in another way at another time. This organisation is dependent on a person's personality and perspective of the event.

Fragmentation Corollary

"A person may successfully employ a variety of construction subsystems which are inferentially incompatible with each other" (Kelly, 1955, p.83). This corollary suggests that each new construct is not necessarily related to an old construct (Button, 1985). For example, it likely that what an individual "thinks today may not be inferred directly from what he was thinking yesterday" (Kelly, p. 83). However, these inconsistencies are not unrecognised in personal construct theory.

Experience Corollary

"A person's construction system varies as he successfully construes the replications of events" (Kelly, 1955, p. 72). This deduction indicates that our personal construct systems are resilient in that they are able to adapt as we interpret new experiences (Button, 1985). As anticipations are revised with the revelation of new events, the construction system evolves, and the person reconstrues. Consequently,
experience is not something that happens to us, rather it is our interpretation and reinterpretation of what happens to us (Button).

**Modulation Corollary**

“The variation in a person’s construction system is limited by the permeability of the constructs within whose range of convenience the variants lie” (Kelly, 1955, p. 77). This corollary states that new experiences mould our character, and that the degree to which we change is limited by our willingness to experience these things with an open mind (i.e., our permeability; Button, 1985). However, a person whose construct system is too permeable will be at risk for being disrupted by virtually every disturbance.

**Individuality Corollary**

“Persons differ from each other in their construction of events” (Kelly, 1955, p. 55). The fundamental postulate placed significance on the anticipation of events. The individuality corollary suggests that although the events that people anticipate are different, a variation in the approaches to the anticipation of the same events also exist (Kelly). Further, while there are individual differences in the construction of events, there may also be a common ground through construing another’s experiences along with one’s own (Kelly).

**Commonality Corollary**

“To the extent that one person employs a construction of experiences which is similar to that employed by another, his psychological processes are similar to those of the other person” (Kelly, 1955, p. 90). Commonality suggests that having emphasised that people interpret experiences differently, it is also possible that two people share
similar interpretations. However, the emphasis would then be on the similarity in construing, and in the way the person makes something of an experience, and not on the experience itself.

**Sociality Corollary**

"To the extent that one person construes the construction processes of another, he may play a role in a social process involving the other person" (Kelly, 1955, p. 95). Social interactions involve the need to understand other people's personal construct systems (Button, 1985). Kelly stated, more directly, that a person who is to play a constructive role in a social process with another person need not construe things as the other person does, as he must effectively construe the other person's outlook. For example, "in driving down the highway . . . we stake our lives hundreds of times a day on our accuracy in predicting . . . other's behaviour through subsuming each other's perceptions of a situation" (Kelly, p. 95). If we were able to accurately predict what others would do, our construction system would subsume the construction system of others, and vice versa. Thus, a mutual understanding would occur (Kelly).

**Stress**

As with the area of personal construct psychology, it is important to define the terminology that is associated with stress. In examining the literature related to adolescent stress, a distinction is made between the term stress and stressors. Selye (1976), a pioneer in stress research, suggested that a stressor was the cause of a stressful reaction, and that stress was the reaction to, or the condition suffered as a result of, this stressor. Selye defined stress as "the state manifested by a specific syndrome which
consisted of all the nonspecifically induced changes within a biological system” (p. 64). This definition, in contrast to the commonality corollary (Kelly, 1955), suggested that although reactions to a stressor may be specific and similar for many people, the stressors themselves were likely to be very different. These differences were attributable to the diversity of individual perceptions about these stressors.

Consistent with Selye’s concept of stress, more simplistic definitions were also offered. Forman and Myers defined stress as “the body’s physical, mental and chemical reaction to stressors or circumstances that frighten, excite, endanger, confuse, challenge, surprise, anger, or irritate” (1987, as cited in Langan-Fox & Poole, 1995, p. 113). Reilly and Clavenger (as cited in Langan-Fox & Poole, 1995) suggested that the stress may have occurred when the response capabilities of an individual exceeded the environmental demands placed on them. Similarly, Anderson (1996) defined stress as the nonspecific response of the body to any demand made on it when external demands exceeded resources.

With reference to the personal construct theory, Kelly (1955) defined anxiety as “the recognition that the events with which one is confronted lie outside the range of convenience of one’s construct system” (p. 495). That is, one has no basis for anticipating the events. It could be said then, that anxiety is being “caught with one’s constructs down” (Mancuso & Adams-Webber, 1982). Similarly, Hoffman, Levy-Shiff, Sohlberg, and Zariki (1992) posited that stress was a negative psychological state also associated with the inaccuracy of an individual’s appraisal of daily life events, and that stress overtaxes an individual’s ability to respond.
It is important to distinguish between good stressors (i.e., eustress) and bad stressors (i.e., distress; Donatelle & Davis, 1996; Selye, 1980). Lazanus, Cohen, Folkman, Kanner, and Schaefer (in press) identified eustress as the commitment to accomplishment, and distress as frustration and resentment. Other researchers (e.g., Bluen & Barling, in press) suggested that many people thrive on stress and operate well under pressure. This reference was considered to be eustress. However, when negative forms of stress began, the distress may have led to illness or even death.

Daily hassles and major life events were common terms in the literature on adolescence. Some researchers used these terms interchangeably. However, it was preferred that they be defined individually as each is a separate entity. Dohrenwend, Dohrenwend, Dodson, and Shrout (1984) defined daily hassles as the small, negative episodes with which we are frequently faced. These hassles were often “irritating, frustrating, distressing demands and troubled relationships that plague us day in and day out” (Dohrenwend et al., p. 223). In contrast, life events were those stressors that cumulated over time and were related to a wide variety of physical and mental illnesses (Dohrenwend et al.). The term “life events” was used to include life experiences, stressors, challenges, and risks (Flach, as cited in Richardson, Neiger, Jensen, & Kumpfer, 1990). Further, life events also included positive and negative influences in a person’s life that may have caused disruption or changes, or may have resulted in pressures to engage in addictive or delinquent behaviours (Richardson et al., 1990).

The Adolescent “Self”

Bandura (1982) stated that people successfully executed tasks that fell within their
enhanced ranged of perceived self-efficacy, but shunned or failed those that exceeded their perceived resources. Consistent with Bandura’s contention, Froman and Owen (1991) suggested that knowledge could not be applied unless an individual perceived that this knowledge could contribute to successful behaviour. This perception of one’s potential for success was referred to as perceived self-efficacy (Bandura, 1982; Froman & Owen, 1991). Most often, people avoided activities that they felt exceeded their coping abilities. A misjudgement of personal efficacy produced adverse effects on the individual. In addition, Brightman (1990) suggested that those individuals who had a low perceived self-efficacy set lower personal goals, abandoned these goals sooner, and experienced more depressive feelings. Therefore, accurate appraisal of one’s own abilities was an important determinant of individual success (Bandura, 1982).

Although it has been suggested that individuals avoided unfamiliarity (Bandura, 1982), those who chose to face challenges, despite potential disastrous outcomes, and who surfaced with new skills, self-understanding, and a better understanding of environmental and social influences, were referred to as resilient (Richardson et al., 1990). McMillan and Reed (1994) and Richardson et al. identified a resiliency model, whereby students were able to recover from or adapt to life’s stresses and problems with remarkable success. The premise of this model was that “in order to become more resilient, an individual must pass through challenges, stressors, and risks, become disorganized, reorganize his or her life, learn from the experiences, and surface stronger with more coping skills and protective factors” (Richardson et al., 1990, p. 35).
The resiliency model was applicable to small, almost unnoticeable events, as well as to very serious life events. Researchers contended that adolescents that persisted, despite setbacks, would become more resilient. Concurrent with these contentions, McMillan and Reed (1994) outlined the following four attributes of resiliency. These included:

1. **individual attributes**, whereby self-reliance was encouraged and developed. These students set clear and achievable goals, demonstrated optimism about their future endeavours, and maintained hope despite the stressors that may have negatively affected their lives;

2. **positive use of time**, whereby being involved in extracurricular activities helped to increase self-esteem, and the belief in an individual’s ability to succeed. Success provided an individual with recognition and a sense of accomplishment;

3. **positive use of family factors**, whereby a sense of trust was established with people other than parents (i.e., teachers, peers, siblings, aunts, uncles, or grandparents); and

4. **school factors**, whereby resilient students found support outside of the home environment. In the school environment students increased their involvement in extracurricular activities, ultimately increasing their belonging, their self-esteem, and the social group with whom bonds would be formed.

Consistent with the contentions of the resiliency model, Brightman (1990) introduced a learned helplessness theory. This theory suggested that those individuals who had a high regard for their own abilities did not give up easily and did not become
depressed when they were exposed to situations that overtaxed their resources. Some individuals equated failure with lack of ability and became helpless and hopeless. These reactions made individuals more susceptible to depressive behaviour after failure than those who attributed failure to external causes (Brightman). In her study, Brightman concluded that those who attributed failure to internal causes suffered from higher depression and delinquency than did those who had higher confidence in their abilities.

Social Support Networks

Dubow, Tisak, Causey, Hryshko, and Reid (1991) defined social support as any information that would lead an individual to perceive that s/he was cared for, esteemed and valued. A current wave of interest in social support revolved around the notion that social supports operated as a stress buffer (Heller & Swindle, as cited in Felner, Jason, Moritsugu, & Farber, 1990). A number of researchers alluded to the buffering hypothesis in order to link stressful life events with consistent access to social support networks (e.g., Heller & Swindle). Thus, it was thought that social support networks would be useful in the following two capacities. First, social supports may intervene between the stressful event, or its anticipation, and the stress reaction, by preventing a stress response. Second, the social supports would intervene between the experience of stress and the onset of the pathological outcome (i.e., by reducing or eliminating stress reactions, or by altering physiological reactions; Cohen & Wills, 1985). Heller and Swindle also suggested that high stress and good support resources contributed to significantly less symptomatology than high stress and low support resources. Further, those individuals who were exposed to stressful life events, but who consistently accessed their available
social support networks, became more resilient (Richardson et al., 1990), while socially isolated people were said to be prone to physical and psychological illnesses (Millstein et al., 1993).

Among the most important support systems in adolescence were the peer groups and the family systems. Licitra-Kleckler and Waas (1993) identified the peer group as a resource that assisted the adolescent to complete specific developmental tasks, through which they discovered their self-identity. In addition, Dubow et al. (1991) stated that peer support was positively related to high peer self-concept. Moreover, the notion of family support, although constantly undergoing change, was said to be of continual importance for most adolescents (Licitra-Kleckler & Waas), and was positively correlated with high scholastic self-concept (Dubow et al.).

Albeit these support systems were accessible to most adolescents, the manner in which an individual appraised these social support resources influenced their perceptions of a stressful event. Consequently, an individual who did not perceive that such resources were available and useful, despite the validity of these beliefs, was likely to develop stress-related disorders (Licitra-Kleckler & Waas, 1993). Based on this idea of perception, many researchers sought to examine the link between social support and adolescent success. Both the peer and the family group were intricate parts of an adolescent's development. They were causal contributors of adolescent success and adolescent failure.

Millstein (as cited in Millstein et al., 1993) suggested that few studies examined adolescent perceptions about social contexts. Cotterell (1996) contended that it was these
assumptions and the relationships within these social contexts that lay at the heart of adolescence. Adolescents placed a great deal of importance on belonging, on being included, and on being part of a group (Cotterell). Social support through group affiliation was a causal contributor to well-being (Cohen & Wills, 1985). Further, peer support was often considered a source of status, reputation, stability, and recognition of self-worth (Cotterell).

The family also became an important focus of study to understand many of the sources of unhealthy and troubled adolescents (Miller, as cited in Hendee, 1991). Miller stated that the goal of the family was to support the developmental needs of its members at each stage of life. Many researchers also suggested that family functioning, parenting styles, and attachment were crucial in human development. Further, it was noted that these elements contributed significantly to well-being (e.g., Hamburg, Mortimer, & Nightingale, as cited in Hendee, 1991; Heller & Swindle, as cited in Felner et al., 1990; Lamborn, Mounts, Steinberg, & Dornbusch, 1991; Licitra-Kleckler & Waas, 1993).

Although consistent with the notion that family-child interactions contributed positively to an adolescent’s well-being, Baldwin, Baldwin, and Cole (as cited in Rolf, Masten, Cicchetti, Nuechterlein, & Weintraub, 1989) posited that some adolescents became shielded from environmental risks by stress resistance in their family, rather than stress resistance within themselves. Baldwin et al contended that children who were stress resistant would succeed in resisting the dangers of both distal and proximal environments. More specifically, children who were stress resistant would be competent to avoid the dangers of an environment that does not impinge directly on the child, and of
an environment that does impinge directly on the child. However, those adolescents whose families remained in control of the child’s exposure to proximal risks, then became at risk in the distal environment (Baldwin et al.). It has been suggested that family support over time provided the child with modelling opportunities, each affecting self-competence, but that a development of extreme dependency on the family had deleterious effects on the adolescent. To avoid this possibility, DeBaryshe, Patterson, and Capaldi (1993) identified four aspects of parental behaviour, each of which were predictors of adolescent resilience and academic success. These predictors were the following: (a) Positive reinforcement; (b) monitoring of children’s whereabouts, activities, and peer relations; (c) shared activities; and (d) family problem solving. These aspects of familial support maintained that the parents provided constructive practices for the adolescent without necessarily eliminating the freedom of adolescence.

Academic Performance

Just as social support networks aided in the development of resiliency in adolescents, associations with peer groups and families were also significant in academic motivation and performance (Goodenow & Grady, 1993). The transition from elementary to junior high school has been recognised as a stressful event, or the cause of any number of stressful events, in an adolescent’s life. Immediately following this transition, students were expected to master more difficult academic curricula, and academic performance became an increasingly important predictor of educational success (Wentzel, 1994).

Concurrent with these findings, Feldman and Wentzel (1990) demonstrated a
strong indication that intellectual performance on academic tasks was positively correlated with the quality of parent-child interactions. Parents who were nurturing, and authoritative (i.e., parental warmth, inductive discipline, nonpunitive punishment practices, and consistency in child rearing; Lamborn et al., 1991) influenced a child’s cognitive competence positively. Nurturing and authoritative parenting were suggested to foster cognitive skills that serve as a basis for school success (Baldwin et al., as cited in Rolf et al., 1989; Feldman & Wentzel, 1990; Wentzel, 1994).

In contrast, truancy, critical comments, and authoritarian parenting (i.e., permissive and lenient; Lamborn et al., 1991) led to less advanced cognitive development and school failure (Baldwin et al., as cited in Rolf et al., 1989; Feldman & Wentzel, 1990). Further, DeBaryshe et al. (1993) suggested that inadequate family interactions contributed to adolescent antisocial behaviours which were negatively correlated with verbal ability and reading readiness. Novy and Donohue (1985) also posited that under the conditions of familial instability, social disorganisation occurred, and the individual adapted behaviours to reflect unique sets of codes, set apart from those which were deemed acceptable by the large society.

Goodenow and Grady (1993) concurred that academic competence was created from a social fabric. However, not only was the role of parenting consequential to successful adolescent functioning, but the role of friends and peer groups on academic performance, as well as the extent to which a student felt personally accepted, respected, and supported by others, were also influential factors of adolescent academic competence. Mounts and Steinberg (1995) stated that during adolescence, great amounts
of time were spent with friends and other members of peer groups, without parental supervision. While some studies suggested that peer groups provoked delinquent behaviours, it was also suggested that peer groups induced positive academic behaviours (Mounts & Steinberg). Some researchers (e.g., Mounts & Steinberg) suggested that the interactive effects of peer behaviour could be positive or negative. Further, high-achieving peer groups were said to have positive effects on an adolescent’s enjoyment of school, educational experiences, report card grades, and standardised achievement test scores (Mounts & Steinberg). That is, adolescents were likely to improve their grade point average if they had friends that were also successful in school. Similarly, A. Allen and Hiebert (1991) concluded that students who were able to get good grades were also able to cope with other nonacademic demands in their lives. In most cases, individuals with higher grades had higher coping effectiveness, suggesting lower anxiety levels and greater coping resources.

Conclusion

Despite the stressors with which adolescents are faced, their perceptions of available social networks and their constructions of life events may significantly contribute to smooth transitions and changes during adolescence. Further, individual perceptions and constructions may also contribute to positive physical and psychological stress reactions, rather than negative reactions. However, without a major social revolution, the elimination of risk variables around adolescence may be nearly impossible.

Consequently, the importance of family and peer supports, individual perception,
and individual appraisal as themes around adolescent functioning were strong determinants of adolescent stress and academic achievement. Good parenting and good peer support were expected to precede competent child behaviour, and appropriate classroom conduct was expected to precede academic success (Feldman & Wentzel, 1990). Further, despite possible exceptions, academic success was, in part, the result of specific aspects of family functioning (Wentzel, 1994) and peer networks (Mounts & Steinberg, 1995). Therefore, adolescence should continue to be investigated as a theory made up of intricate parts. Future investigations may include in-depth analyses of family and peer supports as integral frameworks. Further, studies should integrate examinations of the adolescent and the personal construct theory. Such associations may help researchers to reveal the intricacies of adolescence.
CHAPTER THREE: METHODOLOGY AND PROCEDURES

Overview

This chapter explains the way in which data were collected, recorded, and analysed throughout this investigation. A thorough and comprehensive description of the methodology and procedures employed during this process of qualitative inquiry is also provided. These include sampling procedures, instrumentation, methods of analysis, as well as the assumptions and the limitations that are associated with the investigation. Further, the appropriate themes and theoretical perspectives related to qualitative analysis are revealed, and their relevance with respect to this investigation is noted.

Description of Research Methodology

The present investigation was qualitative in nature. Qualitative inquiry allows observations and interactions to occur between the participants and the researcher. This process contributed to in-depth investigations about each participant, while demonstrating the essence of qualitative analysis. The methodology employed in the present study has been best supported through the use of Patton’s themes of qualitative inquiry (1990; see Table 1), and Patton’s theoretical perspectives of qualitative inquiry (1990; see Table 2).

Of greatest significance with respect to Patton’s theoretical perspectives, and a fundamental aspect of this investigation, is the perspective of phenomenology. This process was one that attended to adolescent viewpoints. Thus, the method of phenomenology was deemed a necessity by some researchers (e.g., Millstein, as cited in Millstein et al., 1993) mainly because it supported the philosophy that the beliefs and attitudes of youth should be considered with high esteem. In the present study, adolescents were asked to describe their perceptions of, their interpretations of, and their
Table 1

Strategic Themes of Qualitative Inquiry

<table>
<thead>
<tr>
<th>Qualitative themes</th>
<th>Application to this investigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naturalistic inquiry</td>
<td>An examination of adolescent stressors, as they were perceived and described by each participant. Informal conversational interviews allowed for an openness to occur based on whichever constructs emerged.</td>
</tr>
<tr>
<td>Inductive analysis</td>
<td>Researchers and participants immersed themselves in the details of the data to develop and discover relevant constructs. The inquiry began with open questions, rather than with a hypothesis to test.</td>
</tr>
<tr>
<td>Personal contact and insight</td>
<td>Direct contact with the participants allowed the researcher to get close to the perceptions and constructs of these students. Use of the personal construct systems eliminated the possibility of researcher bias.</td>
</tr>
<tr>
<td>Unique case orientation</td>
<td>Assumptions were that each case would be unique.</td>
</tr>
<tr>
<td>Empathetic neutrality</td>
<td>A neutral and nonjudgmental stance was taken toward the elements (i.e., stressors) and constructs that emerged in the repertory grids.</td>
</tr>
</tbody>
</table>

*(table continues)*
<table>
<thead>
<tr>
<th>Qualitative themes</th>
<th>Application to this investigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design flexibility</td>
<td>Although a structured set of questions was not needed,</td>
</tr>
<tr>
<td></td>
<td>the focus of the study was predetermined.</td>
</tr>
</tbody>
</table>

**Note.** Adapted from *Qualitative Evaluation and Research Methods*, by M. Q. Patton, 1990, “Strategic Themes in Qualitative Methods”, pp. 40-41.
Table 2

Theoretical Perspectives Related to the Investigation of Adolescent Constructs

<table>
<thead>
<tr>
<th>Qualitative themes</th>
<th>Application to this investigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnography</td>
<td>The adolescent culture was studied through observation and intensive fieldwork.</td>
</tr>
<tr>
<td>Phenomenology</td>
<td>Adolescents described their perceptions of, their interpretations of, and their experiences with identified stressors. This allowed the researcher to “get at the essence of the experience” of adolescent stress.</td>
</tr>
<tr>
<td>Ethnomethodology</td>
<td>The study focused on adolescent stressors, and on how adolescents made sense of their social worlds.</td>
</tr>
<tr>
<td>Systems theory</td>
<td>The researcher explained how and why adolescents, as “systems” constructed their life worlds in the way that they did.</td>
</tr>
<tr>
<td>Hermeneutics</td>
<td>The subjects interpreted their constructs and questioned these interpretations. Therefore, the conditions under which these constructs were developed were known and understood.</td>
</tr>
</tbody>
</table>

*(table continues)*
<table>
<thead>
<tr>
<th>Qualitative themes</th>
<th>Application to this investigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientational qualitative</td>
<td>The implications of the personal construct theory were demonstrated on adolescent stress and academic performance.</td>
</tr>
</tbody>
</table>

experiences with the stressors that impacted their lives and their academic performance. This phenomenological approach was needed to determine the “structure and essence of the experience” (Patton, 1990, p. 69) of adolescent stress as perceived by these adolescents. Phenomenology was fundamental in the present investigation.

Selection of Participants

Before beginning the investigation, the researcher was required to meet the ethical stipulations of the Lincoln County Board of Education. Subsequently, permission was received to proceed with the investigation. The subjects for this study were a group of grade 9 adolescents who lived in St. Catharines, Ontario, Canada and who attended Sir Winston Churchill Secondary School of the Lincoln County Board of Education, now the Niagara District School Board.

The subjects were drawn from within four physical education classes (i.e., two female classes and two male classes) in which the researcher had previously acted as a volunteer. Thus, the sample for Part A (i.e., visual analogue scale) of the study was a convenience sample (n=133), based on the researcher’s familiarity with the subject group. However, despite the 133 subjects who received the questionnaires for Part A of the study, there was only a 45% return rate (n=60). Therefore, the purposeful and extreme case sampling procedures for Part B (i.e., informal conversational interview) of the study were limited.

In Part B of the study, a purposeful sample was used to investigate the phenomenon of adolescent stress, and academic performance. This sampling technique was suggested to be appropriate “to learn something and come to understand something
about certain select cases without needing to generalise to all such cases" (Patton, 1980, p. 100). It was also thought that a purposeful sample would allow the researcher to examine the participants’ constructions of their experiences more closely.

In combination with the purposeful sample, the researcher used an extreme case sampling technique, also based on the results of Part A of the study. Four extreme cases were identified in order to describe the subjects within the purposeful sample. These groups were: (a) High stress-high achiever (HS-HA); (b) high stress-low achiever (HS-LA); (c) low stress-high achiever (LS-HA); and (d) low stress-low achiever (LS-LA). Consequently, a purposeful and extreme case sample of nine subjects (n=9; 3 females, 6 males) was selected (see Table 3). The selected information-rich extreme cases for Part B of the study were intended to illuminate the research questions under investigation. Further, Patton (1990) suggested that “the logic and the power of purposeful sampling [lay] in selecting information-rich cases for study in depth” (p.169).

The use of the purposeful and of the extreme case sampling techniques was effective because, in many cases, more can be learned from intensively examining extreme cases than can be learned from trying to determine what the average case looks like. It was suggested that more conclusions may be drawn by investigating one or more examples of high stress-high achievers, and high stress-low achievers, as well as one or more examples of low stress-high achievers, and low stress-low achievers, as opposed to examining a similar issue from a much broader perspective.
Table 3

**Extreme Case Subject Profile**

<table>
<thead>
<tr>
<th>Participant</th>
<th>Gender</th>
<th>Stress and achievement levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>4010</td>
<td>M</td>
<td>HS/LA – unhealthy, increasing; unhealthy, improving</td>
</tr>
<tr>
<td>1019</td>
<td>F</td>
<td>HS/LA – unhealthy, stable; unhealthy, improving</td>
</tr>
<tr>
<td>2011</td>
<td>F</td>
<td>HS/HA – unhealthy, increasing; healthy, stable</td>
</tr>
<tr>
<td>3021</td>
<td>M</td>
<td>HS/HA – healthy, stable; healthy, stable</td>
</tr>
<tr>
<td>4004</td>
<td>M</td>
<td>LS/HA – healthy, stable; healthy, stable</td>
</tr>
<tr>
<td>4013-10</td>
<td>M</td>
<td>LS/HA – healthy, stable; healthy, stable</td>
</tr>
<tr>
<td>4013-21</td>
<td>M</td>
<td>LS/HA – healthy, stable; healthy, stable</td>
</tr>
<tr>
<td>1029</td>
<td>F</td>
<td>LS/LA – healthy, stable; healthy, stable</td>
</tr>
<tr>
<td>3005</td>
<td>M</td>
<td>LS/LA – healthy, increasing, unhealthy, improving</td>
</tr>
</tbody>
</table>
Instrumentation

Part A: The Visual Analogue Scale

The researcher gathered information about adolescent perceptions of stress and academic performance using modified versions of “pencil and paper” visual analogue (VA) scales (e.g., the Ten-Centimetre Bipolar Health Continuum). These analogues were expressed in digital terms by decimals along a continuum (0.0 through 10.0; Montelpare & Kanters, 1994). Two such scales, each independent of the other, were anchored at both ends of the continuum by brief descriptions of extreme case stress levels (A) and extreme case academic achievement levels (B). For example, in scale (A) students were asked to respond to one of two statements. These statements were either that My stress is out of control, or No stress, boring. Along the continuum of scale (B) the statements were either, My schoolwork is hard, and I am failing my courses, or My school work is easy and I am acing my courses. The subjects for Part A were asked to mark the line between the two poles that best described, on that particular day, how stressed they felt and how well they felt they were doing in school (see Appendix A).

Each adolescent’s perception of stress and academic performance was measured by means of a ratio scale (Montelpare & Kanters, 1994). More simply, the scales included a true zero value, which suggested that there was a point on each continuum that represented a complete absence of the characteristics in question (Tuckman, 1994). In addition to the VA scale, the participants were asked to indicate, by means of a check mark, whether they thought that their current perceptions of their stress levels and of their academic performance levels were healthy or unhealthy and either stable, improving, or
decreasing. This portion of the scale was simply used as an individual reference for each participant, to which the investigator compared the VA scale ratings of the informants.

The visual analogue (VA) scale was used in previous studies of symptom reporting and perceived health and leisure pursuits (e.g., Montelpare & Kanters, 1994). Such scales have been reported to be rapid, sensitive, and reliable subjective measurements of well-being (Clarke & Spear, 1964). Little and McPhail (1973), as well as Stewart (1977, as cited in Cella & Perry, 1986) noted that the success of VA scales was partly due to their “ease in administration, [and] acceptance by respondents” (p. 827). Thus, it can be said that the VA scales implemented in this investigation were also reliable and valid measures of adolescent stress and academic performance.

Cella and Perry (1986) also suggested that investigations using VA scales in nonclinical samples of acutely stressed, psychologically healthy individuals were ideal for examining the reliability of the scales. This suggestion was made based on the assumption that individuals would be in enough distress to provide a distribution of scores, and yet they would not likely fall into the range of clinical symptoms of stress disorders (i.e., chronic stressors). Consistent with this suggestion, the present study examined a sample of acutely stressed adolescents, who were assumed to be psychologically healthy. It was assumed that the subjects in the present study identified mainly their acute stressors because the nature of the study did not allow the researcher to probe the informants in order to gain more insight about the chronic stressors in their lives. Consequently, the acute stressors were thought to have caused immediate stressful
reactions within the students, as opposed to chronic stressors (i.e., parental divorce or child abuse) that may have caused prolonged stressful reactions within the students.

Part B: The Qualitative Process

The extreme case participants (i.e., HS-HA, HS-LA, LS-HA, and LS-LA) for the qualitative interview, were selected based on their responses to the visual analogue scale of Part A. These extreme cases were identified by marks made below 3.0 and above 7.0, on a 10.0 scale. The purposeful and extreme case subjects (n=9) were selected based on four combinations. These are: (a) High stress score (<3.0) with a low academic achievement score (<3.0), or high stress-low achiever; (b) high stress score (<3.0) with a high academic achievement score (>7.0), or high stress-high achiever; (c) low stress score (>7.0) with a low academic achievement score (<3.0), or low stress-low achiever; and (d) low stress score (>7.0) with a high academic achievement score (>7.0), or low stress-high achiever.

The process of the qualitative interview began with the assumption that the “perspective [of each participant was] meaningful, knowable, and able to be made explicit” (Patton, 1990, p. 278). Thus, the purpose of each interview was to make it possible for the participants to bring the interviewer into their world. This provided the researcher with the opportunity to gain valuable information about the attitudes, behaviours, knowledge, and personal history of each informant, to find out what was in and on the mind of that informant, and to unveil how each participant construed his/her lived experiences.
The interview was an effective means of data collection because it enabled the interviewer to obtain information about the informants concerning things which could not be directly observed (i.e., feelings, thoughts, intentions; Patton, 1990). Even as the interviews progressed, and as the researcher became aware and informed of the stressors which affected the participants, there were no observable indicators in behaviour to suggest that the identified elements were, in fact, what caused these adolescents to be stressed. Most relevant to the study was that the interview allowed the researcher to investigate how adolescents organised their worlds, and the meanings that they attached to what went on in these worlds (Button, 1985). Consistent with this process was the study of phenomenology (Patton). In this instance, the adolescents described their life worlds as these worlds were impacted by the elements (i.e., stressors) identified. This allowed the researcher to determine and to make sense of the significance of the experiences of each informant.

Similarly, Patton (1990) suggested that an important pattern in qualitative inquiry was individualisation. Individualisation allowed the researcher to match or structure an interview to suit each individual participant. Highly individualised interviews were said to proceed under the supposition that “outcomes would be different for different [informants]” (Patton, 1990, p. 97). Patton also suggested that the informants may be reluctant to generate responses to criteria against which all others might be compared. Further, it has been argued that individual elements and constructs were to be for verification of unique cases rather than for the measure of standard elements and constructs across all informants (Patton).
Unfortunately, no clear-cut rules about how to perform a credible, high-quality qualitative inquiry have been published (Patton, 1990). However, it has been suggested that, in order to increase the credibility of qualitative inquiry, researchers have had to review their data over and over again to determine if the elements, constructs, and interpretations made sense and if they reflected the nature of the phenomenon (i.e., adolescence). Researchers have also had to compare their findings with related literature to determine similar trends which might suggest that the perceptions voiced by the informants were consistent with other investigations in the literature (Patton, 1990).

In conjunction with these considerations, Patton (1990) suggested that the combination of methodologies in a study of the same phenomena would strengthen its design. This procedure is referred to as triangulation. Denzin (1978, as cited in Patton, 1990) suggested that the logic of triangulation was based on the assumption that “no single method ever adequately solves the problem” (p. 187). Consequently, a combination of triangulation methods was implemented to determine the credibility of this investigation. The researcher used the method of data triangulation to do so.

Sources of Triangulation

Although the student’s self-identifications, through the visual analogue scales, were the primary sources of data in this study, the researcher employed three other sources to which the self-reported data of each student was compared (see Table 4). This process allowed the researcher to add dimensions to the study in order to make valid and reliable conclusions about the data that were collected. The additional sources of triangulation included: (a) The researcher’s interview notes on observed characteristics
Table 4

**Triangulation: Measures of Congruence with the Visual Analogue Scale**

<table>
<thead>
<tr>
<th>Participant</th>
<th>Visual analogue scale</th>
<th>Repertory grids</th>
<th>Teacher confirmation</th>
<th>Interview notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>4010</td>
<td>HS/LA</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>1019</td>
<td>HS/LA</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>3021</td>
<td>HS/HA</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>2011</td>
<td>HS/HA</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>4004</td>
<td>LS/HA</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>4013-10</td>
<td>LS/HA</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>4013-21</td>
<td>LS/HA</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>1029</td>
<td>LS/LA</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>3005</td>
<td>LS/LA</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Note.** HS represents high stress, LS represents low stress. HA represents high achiever, LA represents low achiever. Repertory grids refer to the identification of elements and constructs that are consistent with the visual analogue scale results. Teacher confirmation refers to teacher observed academic average (high achiever is ≥ 80% and low achiever is ≤ 60%). Interview notes refer to perceived stress level (by the researcher). Yes suggests that the method of triangulation indicated was congruent with the student’s self-perception from the VA scale. No suggests that the method of triangulation indicated was not congruent with the student’s self-perception from the VA scale.
of the participants; (b) the classroom teacher’s perspective on each student’s academic achievement level; and (c) the student repertory grids (see Figure 1).

Outlined below are the comparisons made in one triangulation between student self-reported data, a classroom teacher’s perspective of student academic achievement levels, the researcher’s perspective of student stress levels, and the student’s repertory grid, in order to determine the credibility of this investigation. Further comparisons are documented in Table 4.

**The Classroom teacher’s perspective.** Part A of the study revealed individual self-perceptions around stress and academic achievement. Based on the results of Part A, the extreme cases were selected for Part B of the study. Before beginning Part B (i.e., the interview process), the researcher confirmed the self-identified levels of academic achievement with each student’s classroom teacher. For example, the VA scale of subject 2011 revealed that she believed herself to be a high stress-high achiever. Without disclosing this information, a status of achievement level about this student was requested from the classroom teacher for comparison purposes. Remarkably, the teacher revealed that the subject 2011 was, in fact, a very high achiever. Thus, the self-reported data were compared with a secondary source and their reliability was confirmed.

**The Researcher’s Interview Notes.** During Part B of the study, the researcher made anecdotal notes (see Appendix C) about each informant, and reflected on such things as mannerisms, willingness to cooperate, interest, respectfulness, among other characteristics common to stress. These items were then compared to the participant’s self-report data from the VA scale. Again, with reference to subject 2011, the
Figure 1. Sources of triangulation
researcher's notes revealed characteristics that were indicative of a high-stressed individual, as the term "stress" was implied in this study. Thus, the comparison of self-reported data with the notes recorded by the researcher demonstrated a consistency, further suggesting that this qualitative investigation was credible.

The Repertory Grid. The final comparison within this triangulation was the comparison between the student's self-reported data (VA scale) and the repertory grid for that same student. The repertory grids revealed the elements (i.e., the stressors) with which students felt they were faced, as well as the constructs that were used to interpret these stressors. In order to confirm the self-reported data for stress levels and for academic achievement levels, the researcher observed the number of stressors identified, the type of stressors identified, as well as the constructs identified. For example, student 2011 (self-identified high stress-high achiever) revealed 10 stressors, ranging from school and peer pressures to family and self-induced pressures. Further, her constructs identified aspects that suggested that she needed to be busy and that she was someone who strives on standards that are mainly self-created. Thus, it was recognised that her repertory grid was consistent with her self-perception about her stress and academic achievement levels, in that both confirm that she is a high stressed individual who is a high achiever.

In addition to the comparisons made to the self-reported data, other comparisons can be made between the four identified sources of triangulation. The use of the triangulation method guarantees that one data source (e.g., teacher confirmation) can be compared to, and is consistent with, at least one other source of data that is said to be measuring the same thing. Thus, triangulation is an accurate measure of credibility, with
respect to reliability and validity. Table 4 outlines the possible relationships between the four sources of data used in this study.

Data Collecting and Recording

The Visual Analogue Scale

Despite obvious overlaps, it is important to reiterate that this investigation was segmented in two parts. These were the visual analogue scale (Part A), and the informal conversational interview (ICI; Part B). The visual analogue scale was distributed to each participant \((n=133)\) on one day. Following a thorough explanation of how to complete the visual analogue scale, the participants were asked to take the scale home with them and to complete it in the absence of the researcher and in the absence of their peers. This process allowed the researcher to assume that the participants would be more likely to disclose honest self-perceptions. Further, at this level of the investigation, the participants were not asked to verbalise, define, or interpret their responses, again assuming that this would provoke honest responses from the participants. The objective of Part A of the study was simply to gather enough data to be able to define the extreme case students.

The Informal Conversational Interview Using the Repertory Grid Technique

The informal conversational interview (ICI) method suggested that there were no presuppositions about what of importance would be learned by talking to the participants. The ICI also provided the interviewer with a maximum flexibility to be able to pursue information in whatever direction appeared appropriate, without a predetermined set of questions. It should be recognised that the data gathered from the ICI were different from
participant to participant. However, the ICI was the most appropriate approach to take for this inquiry because the structure of the informal interview is dependent on the responses given by the participants. That is, the questions posed by the researcher were dependent on individual responses, and not necessarily vice versa. Consequently, the interview revealed elements (i.e., stressors), and the constructs (i.e., interpretations) around these elements, which were identified by and perceived to affect the lives of each individual participant.

In the first step in the interview process, the researcher asked the participants to indicate on separate index cards the stressors that they perceived to be predominant in their lives. For quick access by the researcher, these stressors (i.e., elements) were also recorded along the horizontal axis of a repertory grid (see Table 5). In the second step the triadic method was used (Kelly, 1955). Triads are a means of grouping together two similar elements and then comparing these to a dissimilar element. From this comparison, the participants provided brief descriptions of the similarities and of the differences (i.e., they formed constructs). To explain the process to the participants so that they were clear about what was required of them, the researcher used a sample that was unrelated to adolescent stress. It was assumed that this example would eliminate the potential to bias the participant responses in any way. The example used was the following:

Given three elements (e.g., stressors), two terms should be selected for their similarity, in a way that they are dissimilar from the third term. For example, using volleyball terms (e.g., bump, serve, and volley) it may be that bump and
Table 5

Sample: Repertory Grid

<table>
<thead>
<tr>
<th>Student ID Elements</th>
<th>#</th>
<th>M/F</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>Date</th>
<th>Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Emergent) Construct</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A1</td>
<td>8</td>
<td>4</td>
<td>9</td>
<td>5</td>
<td>2</td>
<td>7</td>
<td>10</td>
<td>1</td>
<td>3</td>
<td>6</td>
<td>11</td>
<td>A2</td>
</tr>
<tr>
<td>B1</td>
<td>8</td>
<td>4</td>
<td>11</td>
<td>10</td>
<td>3</td>
<td>6</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>9</td>
<td>7</td>
<td>B2</td>
</tr>
<tr>
<td>(Implicit) Construct</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
volley are similar because they occur while a volleyball game is in progress.

Further, it may also be that they are different from the serve because the serve occurs to begin the volleyball game.

In addition, the participants were told that dissimilar elements were not required to be "dictionary" opposites of those elements that were identified as similar. Rather, it was only required that the dissimilar elements be opposite as perceived by the participant.

The index cards with the identified elements were then gathered and were displayed randomly in triads (i.e., three index cards) to the participants. The subjects were asked to identify the similar and dissimilar elements, and to offer constructs (i.e., interpretations) to describe these similarities and the differences. The constructs that were grouped together for their similarities were referred to as emergent constructs. Similarly, the constructs that were identified as the dissimilar constructs were referred to as implicit constructs. The researcher recorded these constructs at opposite poles of the vertical axes of the repertory grid. The random displays of triads continued until combinations of elements began to repeat themselves.

Following the identification of constructs, the participants were asked to rank each individual stressor that had been identified in the previous portion of the interview. The ranks were to occur along a continuum, whereby the poles of each continuum were the emergent constructs and the implicit constructs that had been determined by each individual respondent. For example, one subject identified "family", "grades" and "friends" as three (of the six) identified stressors in her life. When these three elements
were presented as a triad, this participant formed the constructs ‘affects my family’ (emergent) and ‘don’t care about grades’ (implicit). Thus the continuum became:

| Affects my family | Don’t care about grades |

This participant was asked to rank her six stressors in order from 1 to 6, along this continuum. This process continued until each element on the repertory grid had been ranked along each bipolar construct that she had identified. Consequentially, if the students felt that more than one element deserved the same rank along the continuum, they were instructed to so indicate to the researcher so that these ranks could be recorded on the repertory grid.

Kelly’s (1955) Repertory Grid Technique (RGT) was used to record and to organise the data provided by the informants. The customary repertory grid required only that the respondents identify their personal constructs, while the elements in the grid were typically prelabelled by the researcher (i.e., role titles that suggest people who are familiar to the respondent). However, for the purposes of this investigation, the grid structure was modified to eliminate the use of prelabelled role titles as elements, and to replace these elements with the self-identified stressors of the individual informants.

In this study the RGT was a conversational strategy used to facilitate and to personalise each interview. This method externalised and objectified aspects of a respondent’s personal construct system (Mezirow, 1990). During the interview process, the RGT allowed the respondent to reveal thoughts and feelings about object, ideas, people, and events in meaningful terms, while drawing on real-life experiences. Further, the use of the RGT provided insight to both the respondent, and to the researcher about the dimensions, rather than the descriptions of specific situations (Mezirow, 1990).
Finally, in order to define a finer degree of distinction between the self-identified elements, the informants were asked to rank their stressors along the continuum created by their elicited paired constructs. In this method, the participants were asked to rank their stressors in order from most to least, but were permitted to assign the same rank to more than one stressor.

Data Processing and Analysis

The objective of qualitative research is to "make sense of massive amounts of data, reduce the volume of information, identify significant patterns, and construct a framework for communicating the essence of what the data reveal" (Patton, 1990, p. 373). Although the process of data collection is paramount to effectively produce research findings, it is most genuinely the analysis of the data, the interpretation of this data analysis, and the presentation of the findings about the data analysis that make a study complete and determine its significance. The analysis procedures for the present study included student profiles, most like Patton's case study analyses (1990). These included the within-case clustering of individual repertory grids, of the analysis and interpretation of the students' rankings on their respective repertory grids, and of the researcher's anecdotal notes. The data analysis for this investigation also included a content analysis (e.g., cross-case clustering) of the salient features of elements and constructs, as well as of the anecdotal interview notes that were recorded during the interview.

Student Profiles

The first task in the present analysis was to provide description. This was
null
accomplished through the development of student profiles. Just as with the case study, a student profile was developed because the emerging differences among the participants were the primary focus of the investigation (Patton, 1990). All the data for each participant were used to form these profiles.

It was suggested that by separately clustering the elements and the constructs from each individual repertory grid, the common and distinctive features of these elements and constructs would be revealed (Tversky, 1977, as cited in Mancuso & Adams-Webber, 1982). Further, the categorisation of the researcher’s interview notes also contributed to the revelation of distinctive features from within each individual’s repertory grid. The development of individual student profiles, and the classification of the salient features derived from within each of these profiles is a process referred to as within-case clustering.

**Within-case Clustering of Repertory Grids**

**Clustering Elements.** The researcher first examined the identified elements (i.e., stressors) from each repertory grid. These stressors were then grouped together by their similarities, and were categorised in this way. For example, participant 2011 identified the following stressors: school work, exams, tests, running, appearance, paper route, friends, family, free time, and thinking about the future. These 10 elements were then reduced to five specific categories, according to their similarities. These categories were academic, athletic, familial, social evaluation, and time parcelling stressors, and were suggestive of the original elements identified by the participant. Therefore, the
researcher reduced the number of elements but still maintained the essence of what was originally communicated by the subjects (see Table 6).

**Clustering Constructs.** The aforementioned process of categorisation was repeated for the constructs in the repertory grid. However, the constructs were divided into two subcategories (i.e., emergent constructs and implicit constructs). Consequently, the process of identifying salient features in the data was also divided with respect to constructs both emergent and implicit in nature. For example, subject 2011 identified eight bipolar constructs on her repertory grid. The salient features that were derived from her revelation of emergent constructs were pressure, time parcelling, and evaluation. Further, the features that were derived from her implicit constructs were her inability to parcel her time efficiently, according to her desired standards, and the inner challenges that she creates for herself. Again, the constructs were reduced in number so that the researcher could form salient features consistent with the nature of the responses originally provided by the participants (see Table 6).

**Measuring Congruence.** In addition to the clustering of the elements and constructs in the student profiles, a measure of congruence was used to compare the student’s self-perceptions of stress and academic achievement with the researcher’s interview notes and the teacher’s evaluation of each student. The purpose of this measure of congruence was to ensure that the salient features that were derived from the data analysis were equally as credible when compared with other sources of triangulation (see Table 4).
<table>
<thead>
<tr>
<th>Participant</th>
<th>Elements</th>
<th>Constructs</th>
<th>Emergent</th>
<th>Implicit</th>
</tr>
</thead>
<tbody>
<tr>
<td>4010</td>
<td>social, familial, financial, judicial, academic</td>
<td>actions with</td>
<td>private, indifferent</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>consequence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1019</td>
<td>social, academic, familial</td>
<td>pressure, social</td>
<td>no concern for</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>distractions</td>
<td>school, appease</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>social life</td>
<td></td>
</tr>
<tr>
<td>3021</td>
<td>athletic, success, time management, self, support networks</td>
<td>ingredients for success, personal</td>
<td>ability to achieve</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>choice</td>
<td>success</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>academic, athletic, familial, social evaluation, time parcelling</td>
<td>pressure, time parcelling</td>
<td>inner challenges, time parcelling</td>
<td></td>
</tr>
<tr>
<td>4004</td>
<td>social</td>
<td>control</td>
<td>no control</td>
<td></td>
</tr>
</tbody>
</table>

(table continues)
<table>
<thead>
<tr>
<th>Participant</th>
<th>Elements</th>
<th>Constructs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Emergent</strong></td>
<td><strong>Implicit</strong></td>
</tr>
<tr>
<td>4013-10</td>
<td>academic, social, self, time</td>
<td>low self-esteem, low perceived ability, low emotion control, time, control</td>
</tr>
<tr>
<td></td>
<td>academic, management</td>
<td></td>
</tr>
<tr>
<td>4013-21</td>
<td>academic, forced work</td>
<td>irritability, nonpleasurable irritability, take away authority to make choice</td>
</tr>
<tr>
<td>1029</td>
<td>academic, familial, social, and health</td>
<td>control, routine, structure control, routine, structure</td>
</tr>
<tr>
<td>3005</td>
<td>social, academic, familial, financial, health-related, work-related</td>
<td>choice, control no control, awareness</td>
</tr>
</tbody>
</table>

**Note.** Constructs were identified as Emergent (i.e., two similar poles of a triad), and Implicit (i.e., one dissimilar pole of a triad).
Within-Case Clustering of the Interview Notes

Descriptions of the Interview Notes. The interview notes provided characteristics about each participant (see Appendix C) based on the researcher's observations. Specifically, the references made within each student's repertoire were related to personality, cooperative nature, observed movements and reactions to questions and situations, interest, organisation, and intellect. The researcher analysed each student individually by identifying common descriptions within the interview notes for that particular student. For example, the following descriptions were observed for student 2011: speed of response; thoroughness, concision, organisation and clarity of reply; observed desire for success; observed preoccupation with the future; and concern of priorities and time management skills.

The Salient Features from the Interview Notes. The number of descriptors derived from the first categorisation of the interview notes was then reduced in order to form salient features. For example, student 2011 was recorded as having the following salient features: thoroughness (the process of revealing information), precision (the outcome, or answers that were provided), anxiety, organisation, and prioritisation. This process reduced the number of descriptors, while maintaining a consistency with the nature of the characteristics originally observed during the interview.

Ranking Analysis.

Each student ranked his/her self-identified elements (i.e., stressors) along a number of bipolar continua, according to the number of stressors and the number of bipolar constructs that s/he identified. For example, student 2011 elicited 10 stressors
and eight bipolar continua on her repertory grid. Thus, she was asked to rank her stressors from 1 to 10 on eight bipolar construct continua. In conjunction with the qualitative nature of this investigation, the researcher did not conduct any formal statistical analysis with the rankings revealed in the repertory grids. Further, the researcher did not employ the use of computerised analyses (e.g., OMNIGRID) because the modifications made to the structure of the repertory grids (i.e., the self-identified elements) did not ratify the use of such methods. Rather, the researcher used an “eyeball” method (Button, 1985) to determine order and pattern and to examine contrasts and similarities in the rank ordering of the individualised repertory grids.

**Content Analysis**

Following the development of the student profiles, a content analysis was used to identify, categorise, and compare the primary patterns across the data so that descriptive classification systems could be created. Guba (1978) labelled this process comparative patterning. The first step in comparative patterning was to determine what things were thought to fit together when comparing participants (i.e., qualitative themes; Guba, 1978, as cited in Patton, 1990). Thus, the salient features that were derived from the individual student profiles were compared across individual grids (i.e., cross-case clustering) in order to develop themes within the data.

As indicated, the first step in the development of themes for the data was to form student profiles (i.e., via within-case clustering), whereby the salient features of the elements, the emergent constructs, the implicit constructs, and the interview notes were identified. The cumulative totals for each of these variables were the following: 12
salient features for the elements; 13 salient features for the emergent constructs; eight salient features for the implicit constructs; and 15 salient features for the interview notes. Subsequently, a cross-case clustering analysis for each variable was conducted in order to draw out themes around the identified salient features.

**Cross-case Clustering of Repertory Grids**

**Clustering of Elements.** Consistent with the notion of reducing the number of salient features while still maintaining the essence of the original revelations made by the students, the cross-case clustering of the salient features of the elements allowed the researcher to identify 3 themes (i.e., time management, social outlets, and self-created stressors). This process of developing themes was best illustrated by grouping the salient features according to their similarities, or common traits, as stressors.

For example, time management was identified as a theme in the examination of elements. In their repertory grids, students identified elements from which the salient features, work-related, financial, and academics were extracted. These four salient features were then grouped together based on their similarities in terms of their contributions to student stress, and were labelled under the theme “time management”.

Consequentially, to insure nonbias, the researcher elicited the salient features and subsequently the themes for the elements in a way that was consistent with the context in which the stressors were identified (i.e., having considered the constructs, as well as the three other applied areas of triangulation). For example, student 2011 identified running, friends, free time, school work, and paper route as 5 (of 10) elements in her repertory grid. The salient features deduced from these 5 elements were social evaluation (i.e.,
appearance, friends), athletics (i.e., running, appearance), time parcelling (i.e., paper route, friends, running, free time) and academics (i.e., schoolwork, evaluation). These features were categorised in this way based on their use in context in the repertory grid of student 2011. Consequently, it was necessary that "time management" be consistent with the context used in each student’s individual repertory grid, as well as with the context across repertory grids.

Clustering Constructs. The same process used to cluster the elements was also applied to create themes for the emergent constructs and the implicit constructs. The salient features identified in the within-case clustering were combined in the preliminary stages of the cross-case clustering. When the 15 salient features of the emergent constructs were extracted from the repertory grids, the following three themes were elicited: a need to be self-directed; stress caused due the expectations of others; and time parcelling. Only 8 salient features were identified for the implicit constructs of the repertory grids. The following four themes were elicited from the salient features of the implicit constructs: the importance of self-concept; the need to be in control of one’s own actions; indifference of others; and time management. It was important for the researcher to make a distinction between time management and time parcelling, because their meanings differed across repertory grids. The management of time is the student’s ability to complete things given specific time constraints, whereas time parcelling is the ability of the student to organise and prioritise what s/he has to be completed within these time constraints.
Cross-Case Clustering of the Interview Notes

Consistent with the cross-case analyses of the elements and of the constructs, the cross-case analysis of the interview notes draws from the identified salient features to create focus and develop themes within the data. The description(s) of the interview notes revealed 15 salient features from which the researcher excerpted three themes. The themes were the following: the student’s attunement and thoughtfulness (i.e., they were engaged and interactive); the student’s investment in their own lives and in the lives of others (i.e., social and academic); and the student’s emotional responses (i.e., their maturity with respect to aggression and patience).

Methodological Assumptions

The foundations of this study required that assumptions be made about the participants and about the study itself. The researcher acknowledged that the following assumptions were cogent in the investigation:

1. The participants were assumed to have no physical and/or mental exceptionalities. This assumption allowed the researcher to be confident that the self-identified stressors were external influences, and not genetically determined;

2. The participants were assumed to be dependants (i.e., that they resided with at least one parent or legal guardian). This assumption allowed the researcher to be confident that the participants in the study were not completely self-sufficient and that they did not live in homes where self-support was a daily necessity;

3. The participants were assumed to be familiar with the term “stress” and were
also presumed to have some experiences with stress. This assumption provided the researcher with a degree of certainty that the participants would be able to self-identify the stressors in their lives and that they would be able to relate these identifications to their academic abilities through interpretations and constructions;

4. It was assumed that the rank ordering of elements was representative of the daily stressors which the participant faces in order to successfully balance his/her academic achievement levels;

5. It was assumed that if the participants were unable to develop constructs for the elements which they identified, it would be due to the shortcomings related to the research and not due to the insufficiency of the participant; and

6. The participants were assumed to disclose honest and truthful information to the researcher during each phase of the study (i.e., the visual analogue scale, the qualitative interview, and the examination of personal constructs).

Attempts were made to control each of these variables, and each was recognised by the researcher to have potential bearing on the results of the study.

Limitations

Although the researcher attempted to use instrumentation and qualitative procedures to provide sound results, the methodology used in the present investigation was not without its limitations. The acknowledgement of the methodological limitations of this study also concedes the investigation’s potential weaknesses. Consequently, future studies might modify methodological proceedings, thus varying the conclusions.
Primarily, the study was limited by the academic labelling at Sir Winston Churchill Secondary School. That is, the programs offered at the school are said to be for the academically elite. Consequently, although the researcher’s intention was to examine the extreme cases of stress and academic achievement, the study was limited by the availability of students who met these criteria.

This study was also limited by the use of visual analogue scales to identify the high- and low-stressed adolescents and the high and low achievers. The results drawn from this instrument, although credible, might be more acceptable to sceptics if the VA scales were accompanied by an additional self-identification “pencil and paper” test that would be used as a cross reference for the results of the VA scale.

The researcher assumed that the information provided by the respondents was honest and truthful. Consequently, the investigation was also limited by the willingness of the subjects to disclose the honest and truthful information about their life worlds. Similarly, the study was inevitably limited by the perceptions, opinions and beliefs offered by the participants. That is, without the conformity of the adolescents to offer these things, the informal conversational interviews would not have contrived the necessary data to make significant conclusions. Thus, the interview was dependent on the responses of the informants, and not on any structure outlined by the researcher.

The unconfined nature of the triadic method and subsequent development of repertory grids also limited the investigation. Although the credibility of the qualitative aspects of this investigation was determined through triangulation, the results of the investigation were dependent solely on the participants’ perceptions and responses. The
order of the methodology used was logical and structured, but the specific tasks within
the methodology (i.e., triadic method and repertory grids) were without rigid
expectations. Therefore, the interview was dependent, once again, on the honest and
truthful perceptions of the participants.

Restatement of the Problem

The present study required that the participants self-identify the stressors which
they perceived to have had the greatest effects (i.e., positive and/or negative) on their
lives. In many instances, these stressors were not consistent with the literature.
However, it was contended that through self-identification, and through
phenomenological inquiry, a more relative and in-depth psychological analysis of these
adolescent subjects would be realised.

Consistent with the literature was the notion of perception. It was recognised that,
although individual reactions to stressors (i.e., daily hassles and life events) were similar,
individual perceptions of these stressors were unique. Consequently, individuals self-
identified relevant life stressors and constructed their lived experiences quite differently.

The notion of stress on academic performance was also examined. Of interest
were that some students who perceived their stress levels as high also perceived their
academic achievement levels as high (high stress-high achiever [HS-HA]). In contrast,
students with similar perceptions of high stress levels perceived their academic
achievement levels as low (high stress-low achiever [HS-LA]). Further, some students
perceived themselves as low stress individuals, and identified themselves as performing
well academically (low stress-high achiever [LS-HA]), while other students perceived
themselves as low stress, and performed poorly academically (low stress-low achiever [LS-LA]).

Additionally, the investigation identified the similarities and the differences that existed within the personal constructions of individuals among the four extreme case groups (i.e., HS-HA, HS-LA, LS-HA, and LS-LA). These variables were measured in terms of individualised identification of the elements (i.e., stressors), individualised construction of these stressors, and individualised effects of stress on academic performance. Further, the use of Kelly’s personal construct theory (1955) helped the researcher to develop an understanding of the nature of stress, and of stress on academic performance, in adolescence.

Chapter Summary

This chapter has addressed the methodology and the procedures that were implemented in this investigation. The phenomenological approach to qualitative inquiry was a predominant perspective used throughout Part A and Part B of the study. This approach allowed the researcher to determine the “structure and essence of the experience” (Patton, 1990, p. 69) of adolescent stress as perceived by the participants in the study.

The subjects for the study were drawn from four physical education classes, and were selected for convenience sampling, for purposeful sampling, and for extreme case sampling techniques. The participants in the interview process of the study were identified as high stress-high achievers, high stress-low achievers, low stress-high achievers, and low stress-low achievers. The effectiveness and the value of each
null
component of the investigation were dependent on the disclosure of honest and truthful information provided by the participants.

Finally, just as qualitative investigations present great complexities, the analysis of the data derived from these investigations was also an elaborate process. The present analysis began with nine individual repertory grids. By means of a within-case cluster analysis, individual student profiles were developed, attending to all of the data collected including the elements and constructs of the repertory grids, the interview notes, the teacher perceptions and the self-perceptions (i.e., sources of triangulation). The within-case analysis revealed the salient features of each aspect of the data collection with respect to individual students. Further, a cross-case cluster analysis, whereby the salient features were compared across the 9 subjects, elicited specific categorisations (i.e., themes) from within the data. Consequently, the themes that were extracted from the study of adolescent stress and academic achievement were the following: time management, support networks, emotional stress, self-direction, expectations (of others), time parcelling, self-concept, control, attunement and thoughtfulness, investment (in own life and in life of others), and emotional responses.
CHAPTER FOUR: RESEARCH FINDINGS

Overview

This chapter is intended to accomplish three things. First, a synopsis of the methodologies that were implemented in the data collection process is provided. The intention is to review the processes of the study before reviewing the outcomes and the interpretations of the study or the comparisons of the findings to the literature. Second, this chapter provides a detailed review of the research findings. Student data are individually profiled and the salient features from each individual profile are identified (i.e., within-case cluster analysis). Further, a comparison of the salient features across all student profiles (i.e., cross-case cluster analysis) reveals notable qualitative themes within the data. Appropriate tables and figure are also included to supplement the research findings. Finally, the research findings are interpreted through comparisons with the literature, and are discussed according to these comparisons.

Synopsis

The Visual Analogue Scale

This study examines the self-perceived levels of stress and academic achievement of extreme case adolescents from among a sample of grade 9 students. The extreme cases in the study are determined using a visual analogue (VA) scale which separately measures the self-perceived stress and academic achievement levels of each student on a 10cm bipolar continuum. Consequently, the extreme cases employed in this study are: (a) High stress-high achievers; (b) high stress-low achievers; (c) low stress-high achievers; and (d) low stress-low achievers (see Table 3). Eight students fit the criteria of these categories (i.e., two subjects per category). However, a ninth participant was later
added to the low stress-high achiever sample because the originally selected participant from this category did not provide enough data from which notable conclusions could be made. Moreover, the data of both participants are included in the analysis (see Appendix A).

The Informal Conversational Interview

In this study, the interview is used to collect data directly from the extreme case adolescents in two ways: (a) repertory grids; and (b) researcher interview notes. Further, the data that are collected via these methods are compared to a third source, teacher confirmation. Each of these methods of data collection is represented below.

Repertory Grids

The repertory grids are the most substantial part of the interview (see Appendix B). They are individualised grids whereby students reveal elements (i.e., stressors) and constructs (e.g., emergent and implicit), and then rank these elements along their identified bipolar construct continua. The repertory grids are consistent with the qualitative property of the study because they are phenomenological in nature, such that the participants describe their perceptions of, interpretations of, and experiences with the identified stressors and constructs. Further, repertory grids are the primary measures of congruence in the study. That is, the data collected using the repertory grids are compared to the corresponding VA scales (i.e., self-perceived stress and achievement levels), to the interview notes, and to the statements of teacher confirmation, as means of surveying the credibility of the self-reported data.
The Interview Notes

The researcher's interview notes were recorded immediately following the interview. They include the reflections of the researcher based on the interactions that took place between the researcher and the participant throughout the interview (e.g., observed stress-related behaviours and mannerisms displayed by the participant; see Appendix C). Although the interview notes are used mainly to record observed data about the participants, they are also significant sources of triangulation, whereby they can be used to determine the credibility of the self-reported data (e.g., VA scale).

Teacher Confirmation

The classroom teachers were asked to report their perceptions of each participant's academic ability, based on real academic averages. This confirmation was also used as a source of triangulation in order to verify the self-report data provided by the VA scales.

Review of Research Findings

Within-case Analyses

The Visual Analogue Scale

The visual analogue scale is used to determine how the participants in the study perceive their own levels of stress and academic achievement (see Appendix A). The analogues, expressed digitally by decimals along a continuum (0.0 through 10.0), are anchored at both ends by descriptions of extreme case stress levels and extreme case academic achievement levels. The students marked the line between the poles that best described, on that day, how stressed they felt and how well they felt they were doing in
school. The extreme case students were those who marked each line below 3.0 or above 7.0. The students who marked the line between 3.0 and 7.0 were not considered to be extreme case students, with two exceptions discussed below. Additionally, the participants were asked to indicate their current perceptions of stress and academic achievement levels (i.e., healthy or unhealthy; see Table 3). Further, they were asked to indicate whether they believed that their stress level was stable, increasing, or decreasing, and whether their academic achievement level was stable, improving, or worsening.

Subject 4010, Male. This student marked the stress line at 0.5 (<3.0) and the achievement line at 2.3 (<3.0). Further, the student indicated that his current stress level was unhealthy and increasing, and that his academic achievement level was unhealthy but improving. Thus, his self-identification is high stress-low achiever (HS-LA).

Subject 1019, Female. This student marked the stress line at 1.2 (<3.0) and the achievement line at 1.4 (<3.0). Further, she identified that her stress level was unhealthy but stable, and that her academic achievement level was also unhealthy but improving. Thus, her self-identification is high stress-low achiever (HS-LA).

Subject 2011, Female. This student marked the stress line at 0.9 (<3.0) and the achievement line at 8.6 (>7.0). She also identified that her stress level was unhealthy and that it was increasing, and that her academic achievement level was healthy and stable. Thus, her self-identification is high stress-high achiever (HS-HA).

Subject 3021, Male. This student marked the stress line at 2.9 (<3.0) and the achievement line at 8.8 (>7.0). Despite the high stress level indicated on the scale, this student indicated that he his stress level was healthy and stable. Similarly, this student
states that his academic achievement level is healthy and stable. Thus, his self-identification is high stress-high achiever (HS-HA).

**Subject 4004, Male.** This student marked the stress line at 9.8 (>7.0) and the achievement line at 9.3 (>7.0). This student's current perception of stress and academic achievement level is healthy and stable in both cases. Thus, his self-identification is low stress-high achiever (LS-HA).

**Subject 4013-10, Male.** This student marked the stress line at 9.3 (>7.0) and the achievement line at 9.8 (>7.0). This participant also indicates that both his stress and his academic achievement levels are healthy and stable. Thus, his self-identification is low stress-high achiever (LS-HA).

**Subject 4013-21, Male.** This student marked the stress line at 10.0 (>7.0) and the achievement line at 10.0 (>7.0). He also indicates that his stress level is stable and healthy, as is his academic achievement level. Thus, his self-identification is low stress-high achiever (LS-HA).

The following two students are considered to be low stress-low achievers. However, their self-report data does not suggest that they meet the criteria established for this extreme case categorisation. In the case of subject 3005, he meets the criteria for the stress scale only, but surpasses the requirement for the self-reported achievement level by 1.8 points on the 10-point scale. Further, subject 1029 does not meet either criteria, but is closer to meeting these boundaries than any other student who completed the VA scale. This limitation is addressed in the third chapter, and will also be considered during the analysis and interpretation of the data for these two participants.
Subject 1029, Female. This student marked the stress line at 5.1 (<7.0) and the achievement line at 4.8 (>3.0). Further, her current perceptions of her stress and academic achievement level were healthy and stable. Although this participant’s data did not demonstrate the extreme case characteristics as were identified by the criteria for the study, her self-identified rankings were closer to extreme cases for low stress-low achievers (LS-LA) than any other student. Consequently, as with the following student, this participant’s data are used. However, the researcher is aware of the effects that this inclusion may also have on the results of the study.

Subject 3005, Male. This student marked the stress line at 8.4 (>7.0) and the achievement line at 4.8 (>3.0). He also indicated that his stress level was healthy but that it was increasing. Thus, he met the criteria for low stress. However, he was above the criteria (by a difference of 1.8) on the continuum for achievement, although he did indicate that his achievement level was unhealthy but improving. Despite the deviation, this student’s data for the visual analogue scale were the closest to meeting the requirements defined by the researcher for extreme case low stress-low achiever (LS-LA). Consequently, the data for this student are used in the study. However, the researcher is aware of the effects that this inclusion may have on the results of the study.

Repertory Grids

The information that is revealed in the individualised repertory grid of each participant (see Appendix B) exposes significant details with respect to each student’s profile. Among these are the elicited stressors (i.e., elements) and interpretations of these stressors (i.e., constructs). The repertory grid also displays the rank ordering of the
elements along the bipolar dimensions of the elicited constructs, according to their similarity or dissimilarity to one or both poles of the construct continuum.

The present within-case analysis begins with an interpretation of elements and constructs as the participants have revealed them. Salient features (i.e., categorisations of similar elements and categorisations of similar constructs) are then formed from the data. Subsequent cross-case analyses will review and will compare the salient features from each participant’s data, and will derive qualitative themes from them.

The within-case analysis will also include an interpretation of the rank ordering that is revealed in the repertory grids, and a verification of the credibility of the self-report measures, via their comparability to the self-perceived stress and academic achievement levels as indicated by the participant’s grids. The elicited elements and constructs are considered for this component of the analysis. It is important to note, however, that the repertory grid, in conjunction with the interview notes, is meant to focus directly on the student’s stressors and interpretations of these stressors, and not on the student’s academic achievement level. Consequently, the verification of the credibility of the self-report measures for academic achievement is based on the information provided with regards to academic-related stressors, and is further verified by a third source of triangulation (i.e., teacher confirmation).

**Subject 4010, HS-LA Male.** This student identified 11 stressors, including family, friends, girlfriend, money, law, dad, mom working, court date, lawyer, paying off debts, and passing school (see Table 7). The elements that are analogous are grouped together to form salient features within his profile. Thus, the analysis reveals that this
Table 7

Profile: Subject 4010

<table>
<thead>
<tr>
<th>Elements</th>
<th>Actions with consequence</th>
<th>Private, indifferent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family</td>
<td>8 8 9 8 8 10</td>
<td>1 9 9 11 9</td>
</tr>
<tr>
<td>Friends</td>
<td>4 4 7 6 6 3</td>
<td>9 6 5 1 7</td>
</tr>
<tr>
<td>Girlfriend</td>
<td>9 11 11 9 11 6</td>
<td>2 10 4 2 3</td>
</tr>
<tr>
<td>Money</td>
<td>5 10 3 10 2 4</td>
<td>11 4 1 5 1</td>
</tr>
<tr>
<td>Law</td>
<td>2 3 4 2 5 9</td>
<td>7 1 7 7 5</td>
</tr>
<tr>
<td>Dad</td>
<td>7 6 8 5 9 2</td>
<td>3 8 6 10 8</td>
</tr>
<tr>
<td>Mom working</td>
<td>10 5 10 4 10 11</td>
<td>8 11 10 9 10</td>
</tr>
<tr>
<td>Court date</td>
<td>1 1 2 1 4 8</td>
<td>6 2 8 6 6</td>
</tr>
<tr>
<td>Lawyer</td>
<td>3 2 5 3 7 7</td>
<td>5 3 3 8 4</td>
</tr>
<tr>
<td>Paying off debts</td>
<td>6 9 1 11 1 5</td>
<td>10 5 2 4 2</td>
</tr>
<tr>
<td>Passing</td>
<td>11 7 6 7 3 1</td>
<td>4 7 11 3 11</td>
</tr>
</tbody>
</table>
student faces social, judicial, familial, financial, and academic stressors. It becomes evident that his friends and his girlfriend are the major contributors to his social stress, while his familial stress is the result of his father’s anger and his personal feelings with respect to his mother’s employment. Further, his academic stress appears to be affected by his family more than by others, and his financial debt and worry play significant roles with respect to the judicial stress that he endures.

Subject 4010 also identified 11 bipolar constructs within his repertory grid. The specific emergent constructs revealed in this grid include the law, things that anger his father, the disclosure of private and confidential information by his peers, his girlfriend’s suspicious nature, and things that are within his control. The salient feature that is derived from this list of emergent constructs is “consequence”. That is, each of the emergent constructs is a repercussion of the elements identified, or is subject to repercussions because of the elements identified. For example, in his grid, “things that make my dad angry” and “things that anger and worry my girlfriend” are the consequences of his judicial and financial elements. Moreover, “things that are important” (i.e., family, girlfriend, and dad) and “making money” are both subject to undefined repercussions as a result of the elements elicited.

The specific implicit constructs include things that are unrelated to the law, that his father, mother, and/or girlfriend do not know, that he cannot control, that are unimportant, that are uninvolved in his life, or that intensify his concern to make money. From the implicit constructs, two salient features are derived, and include things that are private, and things that, or people who are indifferent. For example, “dad doesn’t know
about" and "girlfriend doesn't know about" exemplify that this student has many privacy issues, especially with respect to his familial and social relationships. Further, the implicit constructs, "not involved in school" and "mom doesn't know about" are indicative of this student's desire for privacy, and for his family and friends to remain detached from his life, in some respects.

The rank ordering of the elements occurs along bipolar continua. In this student's repertory grid, 11 elements are ranked along 11 construct continua. The rank number of each individual element in each individual continuum provides a detailed understanding of the rank ordering systems. For example, the element "family" is ranked 8th, 8th, 9th, 8th, 8th, 10th, 1st, 9th, 9th, 11th, and 9th, respectively, in the 11 bipolar continua. Since this element is more consistently ranked toward the implicit ends of each continuum (i.e., high ranks, 6 and greater on the 11-point scale), it may be considered an implicit element. That is, in the analysis of implicit constructs, the salient features derived are "privacy" and "detachment"; consequently, for this student, "family" is something that he wishes to keep detached from his personal and private affairs.

Additionally, the element "money" was ranked 5th, 10th, 3rd, 10th, 2nd, 4th, 11th, 4th, 1st, 5th, and 1st, respectively. In this case, the element is more consistently ranked toward the emergent ends of each continuum (i.e., low ranks, 5 and less on the 11-point scale) and may be considered an emergent element. That is, "money" can cause or be caused by undefined consequences, such as "things that make my dad angry" or "girlfriend and I not dating anymore".
The rank of each element within each continuum is individually examined for its consistent placement toward the emergent side or toward the implicit side of the scale, as demonstrated by the aforementioned examples. The following results are noted. Friends, girlfriend, dad, mom, and passing are more consistently ranked toward the implicit end of each continuum. It may be said that this student prefers that certain aspects of his personal life remain private, and that his family, his peers, and his partner also remain uninvolved in these affairs. Further, this student prefers that some elements, such as passing school, be private and that his family and peers remain detached from this aspect of his life. The elements, law, and lawyer are more consistently identified as emergent, whereby the student has suffered or is aware that he will suffer repercussions as the result of these elements. Finally, the rank ordering for court date and paying off debts are not consistently identified at either end of the bipolar continua. Rather, there appears to be an equal distribution of numerical ranks at both emergent and implicit ends.

Consequently, these elements are neither completely emergent, nor are they completely implicit, which suggests that they are susceptible to, or the cause of consequence, and that they are private issues that the student wishes to keep unknown to his family and peer groups.

Subject 4010 identified himself as a high stress-low achiever on the VA scale. The analysis of his repertory grid indicates a consistency between his self-report data for stress and the data for stress that were obtained during the interview. That is, the number and the nature of elements elicited by this participant suggest that he is a student whose life is habitually met with stressful situations and events. In some instances, the stressors
appear to be self-induced (i.e., the law, court date, and lawyer), and in other instances, the stressors do not appear to be what he is able control (i.e., mom working).

Further, the student identifies passing as a stressor in his life, but does not directly indicate on the repertory grid whether he believes that he is a high achiever or a low achiever. It is the implicit nature of this stressor, which suggests that this student prefers to keep his academics private, and that this stressor might have repercussions, or—if his academics are poor—might be the consequence of another stressor, “Law” for example. Therefore, although the student has not directly stated in his grid that he is a low achiever, the elements and the relationships of these elements to the constructs confirm this self-perception.

Subject 1019, HS-LA Female. This student identifies 6 stressors, including school, grades and homework, family, friends, activities, and social life (see Table 8). The salient features derived from within this student’s profile are social, academic, and familial. Quite obviously, the stress induced by friends, activities, and social life make up her social stress; school and grades/homework make up her academic stress; and family is the primary component of her familial stress.

This student also identifies 8 bipolar constructs within her repertory grid. The specific emergent constructs unveiled in her grid include things that are intimidating and nonmotivating, pressures from her family, things that ruin her social plans, distant friends, and things that do not always work out the way she expects that they will. The salient features derived from this list of emergent constructs are pressure and social distractions. Therefore, the emergent constructs that refer to incidents which make her
### Table 8

**Profile: Subject 1019**

<table>
<thead>
<tr>
<th>Elements</th>
<th>Ranking</th>
<th>Pressure/social distraction</th>
<th>No concern for school/appease social life</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emerging to implicit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School</td>
<td></td>
<td>1 5 3 6 3 2 1 1</td>
<td></td>
</tr>
<tr>
<td>Grades/Homework</td>
<td></td>
<td>2 4 2 4 4 3 3 3</td>
<td></td>
</tr>
<tr>
<td>Family</td>
<td></td>
<td>6 6 1 3 1 1 4 2</td>
<td></td>
</tr>
<tr>
<td>Friends</td>
<td></td>
<td>5 3 6 1 2 6 5 5</td>
<td></td>
</tr>
<tr>
<td>Activities</td>
<td></td>
<td>3 2 5 5 5 4 2 4</td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td></td>
<td>4 1 4 2 6 5 6 6</td>
<td></td>
</tr>
</tbody>
</table>
feel pressured in some way are pressure from family, intimidating and nonmotivating scenarios, and relaxed but wanting things to be smoother. The emergent constructs that create distractions from her social life include don’t always get along, distant, don’t want to go to summer school, and last-minute pulling out of plans.

The specific implicit constructs include things that are private, that are hard to deal with, that do not affect grades, that do not require planning, that may be forgotten, that friends do not care about, that do not involve thoughts of school, and that do not affect her social life. From among these constructs, two salient features are elicited. They are to appease her social life, and dissociation from academics. For example, “may be forgotten” was revealed as related to school. That is, the triad formed during the interview was “activities, friends, and school”. This student selected school as the implicit construct, and described it as something that may be forgotten when compared to the two emergent constructs. Consequently, this implicit construct is meant to refer to something that appeases her social life. Further, don’t care about grades, don’t have to think about school, doesn’t affect grades/homework, no plans made, as well as private, are all constructs that are implied to create a distraction from this student’s academics.

The rank ordering of the elements occurs along bipolar continua. This student’s 6 elements are ranked eight times along each of the continua that she reveals. For example, the element “school” is ranked 1st, 5th, 3rd, 6th, 3rd, 2nd, 1st, 1st, respectively. This element is more consistently ranked 3 and below, and is so considered to be an emergent element. Therefore, it can be said that “school” makes this student feel pressure and also detracts from her social life, which is consistent with the information revealed in her
repertory grid. Thus, the rank system revealed by student 1019 complies with the salient features of the emergent constructs. Also, "friends" is ranked 5th, 3rd, 6th, 1st, 2nd, 6th, 5th, and 5th, respectively. The element is more consistently ranked above 4, and is so considered an implicit element. "Friends", a social element, appears to appease this student's social life, and also appears to be a distraction from her academics.

The rank of each element is individually examined for its consistent placement toward emergent or implicit ends of the bipolar scales. It is observed that "grades/homework" and "family" are more consistently ordered at the emergent end of the construct continuum. Therefore, it may be said that both elements cause this student to feel pressure and also detract from her social life. It is also observed that "activities" and "social life" are more consistently ranked toward the implicit end of each continuum. Both of these elements, social in nature, satisfy her social life and do not necessitate a concern for her academics.

Subject 1019 identified herself as a high stress-low achiever on the VA scale. The analysis of her repertory grid indicates a moderate consistency between her self-report data for stress and the data for stress that were obtained during the interview. Although the number of elements that she identified does not suggest that many stressors affect her, the nature of the elements elicited suggests that she is a high-stress student whose stress is self-induced. Further, while the participant feels that the elements that she reveals are stress causing, her interpretations of these elements suggest that they are more comparable to hassles (i.e., irritations). Moreover, the naming of grades and homework as a stressor contends that stress negatively impacts her academic
achievement level (i.e., low achiever). This interpretation is not consistent with the teacher's confirmation (see Table 4).

**Subject 2011, HS-HA Female.** This student identified 10 stressors, including school work, exams, tests, running, appearance, paper route, friends, family, free time, and thinking about the future. Associations of these elements are made to derive the salient features from within this student's profile. The analysis indicates that she faces academic, athletic, familial, social evaluation, and time parcelling stressors. Included in her academic stress profile are schoolwork, exams, tests, and her thoughts about the future. Similarly, the academic stressors overlap and adjoin the stress caused by the evaluation by others (i.e., teachers). Her athletic stressors include running and appearance, and her social evaluation stressors include appearance and friends. Clearly, her familial stress includes her family, while her ability to manage her paper route, friends, her running, and her free time are consistent with her time parcelling stress (see Table 9).

Subsequently, 8 bipolar constructs are identified within this student's repertory grid. The emergent constructs revealed include pressure to be perfect, complementary (i.e., running and appearance), difficult to plan time, things that cause worry, events that take away time to do things, want to fit in, relieve stress (i.e., family and school), and drive to be perfect. From among these constructs, two salient features that are derived include pressure and evaluation. That is, this student endures academic and social pressures and is concerned with academic and social evaluation. Consistent with these revelations, the triadic method, by which her emergent construct system was developed,
Table 9

Profile: Subject 2011

<table>
<thead>
<tr>
<th>Elements</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emergent to implicit</td>
</tr>
<tr>
<td></td>
<td>Pressure, time parcelling, evaluation</td>
</tr>
<tr>
<td>School work</td>
<td>6 7 5 5 7</td>
</tr>
<tr>
<td>Exams</td>
<td>1 2 1 1 2</td>
</tr>
<tr>
<td>Tests</td>
<td>3 2 2 2 3</td>
</tr>
<tr>
<td>Running</td>
<td>10 1 8 10 5</td>
</tr>
<tr>
<td>Appearance</td>
<td>2 1 6 4 1</td>
</tr>
<tr>
<td>Paper route</td>
<td>9 6 7 6 10</td>
</tr>
<tr>
<td>Friends</td>
<td>7 3 4 8 6</td>
</tr>
<tr>
<td>Family</td>
<td>8 4 10 7 9</td>
</tr>
<tr>
<td>Free time</td>
<td>4 3 3 9 4</td>
</tr>
<tr>
<td>Thinking about the future</td>
<td>5 5 9 3 8</td>
</tr>
</tbody>
</table>
indicates that her perceptions are self-created and that she thrives on these standards in order to be successful. For example, in her grid, pressure to be perfect, want to fit in, things that cause worry, complementary, and drive to be perfect are each suggestive of her self-created aspiration to be perfect and to be accepted.

A third salient feature derived from this student's emergent construct system is time parcelling. For example, free time, family, school, and friends generate the constructs “difficult to plan time”, “take away time to do things”, and “relieve stress”. It then becomes evident that this student is concerned with parcelling her time in order to balance her academics, her family, and her recreational activities effectively.

The specific implicit constructs revealed in this participant's repertory grid include things that require more time, no preparation, no pressure, things that are time consuming, and things that are a time stress. Also included are situations where time planning is easy, things that are challenging, the need to please others (i.e., customers), and things that will help to plan for her future. From the implicit constructs, two salient features are elicited. They are the student's inability to parcel her time efficiently, according to her desired standards, and the inner challenges that she creates for herself. For example, “things that are time consuming”, “things that make time planning easy”, and “things that are a time stress” are quite obviously constructs which are related to her time parcelling abilities. In this case, the student does not appear to be confident that her time parcelling abilities are proficient, despite the consistency that exists between these time-parcelling abilities, and her academic success and her apparent organisation abilities. Also, the implicit constructs that are related to the inner challenges created by
this student, "no pressure", "things that are a challenge", "pleasing others", and "things that help to plan for the future", demonstrate her inherent nature to succeed, and to create an environment that is conducive to success.

The rank ordering of the elements in this student’s repertory grid occur along eight bipolar continua. The rank number of each element within each continuum gives insight to how this student feels about each element. For example, the element "school work" is ranked 6th, 2nd, 5th, 5th, 7th, 6th, 8th, and 7th respectively in the 8 bipolar continua. This rank order demonstrates that the academic element "school work" is more consistently placed at the implicit end of the continuum. Consequently, it is reasonable to suggest that this element is one which creates a challenge for the student and which impresses upon her time parcelling ability. Conversely, the two remaining academic elements (i.e., exams and tests) are each ranked more consistently towards the emergent end of the continua, from 1st to 3rd, and from 2nd to 3rd, respectively. This suggests that while there is a time parcelling concern with regards her academics, the student feels academic pressure conceivably because of the evaluation process that accompanies tests and exams.

Additionally, "running", "paper route", and "thinking about the future" are more consistently ranked toward the implicit end of the construct continua. Thus, for this student, each of these elements presents a challenge for her and also influences her time parcelling ability. Although the challenges created by running and thinking about the future are inner challenges, the challenge of the paper route is based on expectations by others, as well as on self-created challenges to meet the needs of the clients to whom she
delivers the newspaper. Each of the challenges that are endured as a result of these elements requires time and organisation.

The elements that are more consistently ranked towards the emergent end of the eight continua include “appearance” and “free time”. Evidently, this student feels pressure and evaluation with regards to her appearance and with regards to the way that she parcels her free time. Although it is assumed that the pressure and the evaluation that are endured are social, it may also be that the family impacts these stressors.

Finally, “friends” and “family” are ranked impartially from 2nd to 8th, and from 3rd to 10th, respectively across each continuum. That is, there is no distinction made with regards to the emergent or to the implicit nature of these two elements. Rather, it can be said that these stressors generate pressure, evaluation, challenge, and time parcelling concerns for this student.

Subject 2011 identified herself as a high stress-high achiever on the VA scale. The analysis of her repertory grid is concordant with this self-perception and is also consistent with the data revealed by the interview notes (see Appendix C). The number and the nature of the stressors outlined by the student suggest that the student’s self-perception of her stress level (i.e., high stress) is appropriate. Further, her concern for success in her future, as well as her high regard for schoolwork, exams, and tests, are indicative of her ability to achieve high academic standards. Her teacher confirms this self-perception of academic achievement (i.e., through triangulation).

Subject 3021, HS-HA Male. The elements that are revealed in this student’s repertory grid intensely support his self-perception of stress and academic achievement
levels (i.e., HS-HA). He identified 6 stressors, including grades/homework, success in sports, schedule can be very tiring, successful in life, learning to manage time, and teacher (a positive influence). Not only do the phrases he uses to describe his elements suggest a consistency between his self-perceptions and the stressors that he encounters in his life, but the depth with which this student articulates his revelation of elements is also suggestive of his high stress-high achieving nature.

The within-case analysis of this student’s elements suggests that among the salient features that breed stress in his life are support networking, athletics, success, the self, and time management stress. The repetitive use of the word “success” in his repertory grid, with respect to sports, school, and life, propose that this student’s ambitions are success oriented. Further, his concern for success and the relation of this concern with his ability to schedule and manage his time effectively are revealed in the identification of time management as a salient feature. Finally, the student reveals the importance of his teacher as a positive influence, which suggests that support networks are important contributors to his success. It is noted, however, that this student does not confess to support networks that might include his peers. Rather, the stressors that are identified by this student are self-oriented and inherent (see Table 10).

The 8 bipolar constructs that are identified exemplify this student’s academic prowess. Consistent with the directness in the revelation of this student’s identified elements, the two salient features elicited from the emergent constructs are that the student recognises specific ingredients for success, and that he demands the right to make personal choices. For example, the student identifies five personal ingredients for
Table 10

Profile: Subject 3021

<table>
<thead>
<tr>
<th>Elements</th>
<th>Ingredients for success, personal choice</th>
<th>Detractions from ability to achieve success</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ranking Emergent to implicit</td>
<td></td>
</tr>
<tr>
<td>Grades/homework</td>
<td>2 2 4 2</td>
<td>2 5 2 2</td>
</tr>
<tr>
<td>Success in sports</td>
<td>6 5 1 3</td>
<td>4 1 3 5</td>
</tr>
<tr>
<td>Schedule can be very tiring</td>
<td>5 6 2 5</td>
<td>6 2 5 6</td>
</tr>
<tr>
<td>Successful in life</td>
<td>1 1 5 1</td>
<td>1 6 1 1</td>
</tr>
<tr>
<td>Learning to manage time</td>
<td>4 3 6 4</td>
<td>3 3 4 3</td>
</tr>
<tr>
<td>Teacher (a positive influence)</td>
<td>3 4 3 6</td>
<td>5 4 6 4</td>
</tr>
</tbody>
</table>
success. These emergent constructs include things that require persistence and hard work, things that require mental work, things that I must do to carry on my reputation, things that are tiring but that create a good feeling, things that are repetitive, and things I must do that are important. Further, things that are personal and things that I have a choice about are two emergent constructs that relate to this student’s desire to make personal choices.

Additionally, one salient feature derived from the implicit constructs of this student’s repertory grid is that the student identifies and provides constructs for the stressors that detract from his ability to achieve success. For example, things that put stress on me, and things that are tiring both detract from this student’s ability to succeed. This student’s grid suggests that personal choice is also implicit, as is consistent with the salient feature derived from the emergent construct. That is, situations that provide choice, things that are boring but of personal importance, things that may affect my reputation, things that are of self-importance are each implicit constructs that exemplify the importance of personal choice for the participant.

The data from this student’s repertory grid are rank-ordered along a bipolar construct continuum (i.e., emergent to implicit). Consequently, each stressor is categorised according to its assigned rank. For example, grades/homework is ranked 2nd, 2nd, 4th, 2nd, 2nd, 5th, 2nd, and 2nd. This element is more consistently ranked low on the bipolar continuum, and is therefore an emergent element. That is, it is considered by the student to be something that contributes to his personal success, and about which he makes his own personal choices. Also ranked low on the continuum (i.e., emergent) is
success in life. This element is ranked 1st, 1st, 5th, 1st, 1st, 6th, 1st, and 1st, respectively, across each continuum. Quite clearly, being successful in life is a very important personal choice and is evidently an ingredient that is required in this student’s recipe for success.

The constructs, schedule can be very tiring, and teacher as a positive influence, are both ranked implicitly (i.e., high) in this repertory grid. The construct, schedule can be very tiring, is ranked 5th, 6th, 2nd, 5th, 6th, 2nd, 5th, and 6th, while the construct, teacher as a positive influence, is ranked 3rd, 4th, 3rd, 6th, 5th, 4th, 6th, and 4th. Each of these implicitly ranked elements affects the student’s ability to succeed, and limits the student’s personal choices.

Two of this student’s elements are not ranked consistently towards one end or the other, of the bipolar construct continua. Success in sports and learning to manage time are elements that may be categorised according to the salient features for both emergent and implicit constructs. For example, the student’s success in sport is of self-importance and is a personal choice that he makes. If the student’s involvement in sport is constant and tiring (e.g., as related to his tiring schedule), then fatigue may detract from his ability to succeed in sport. Further, if the student’s time management skills are good, then he is likely to make a choice to be successful, whereas if his time management skills are poor, then there is a detraction from success, and the choice made is not likely to be success oriented.

The VA scale completed by this student demonstrates that his self-perceptions of his stress level and of his academic achievement level are high (i.e., HS-HA). The data
revealed in the repertory grid are consistent with these self-perceptions. Further, the interview notes recorded for this student and the confirmation of the teacher with respect to academic achievement are also consistent with the self-revelation that occurred in the repertory grid.

**Subject 4004, LS-HA Male.** The elements that are revealed in this student’s repertory grid exceedingly support his self-perception of stress and academic achievement levels (i.e., LS-HA). With great difficulty, and despite continual probing, this student identified only 2 stressors, including 5:00 a.m. rowing practice and overly sarcastic people. This student’s stressors are very few and eminently indicate his self-perception of his stress level (i.e., low stress). Further, this student’s nonrevelation of academic related stressors in his repertory grid suggests that his self-reported academic achievement level (i.e., high achiever) is accurate, and validated by teacher confirmation. The within-case analysis of this student’s elements reveals that the two stressors identified can be categorised analogously as social stressors. That is, rowing practices, as well as the relationships that he has with peers who are sarcastic, create a social stress for this student (see Table 11).

The identification of 2 bipolar constructs are further examples of this student’s low-stress nature. The salient feature elicited from the emergent constructs identified by this student is “control”. Conversely, this student’s only salient feature derived from his implicit constructs is “no control”. His constructs are obvious indicators that his self-report data for stress and achievement are accurate.
Table 11
Profile: Subject 4004

<table>
<thead>
<tr>
<th>Elements</th>
<th>Ranking</th>
<th>Control</th>
<th>No control</th>
</tr>
</thead>
<tbody>
<tr>
<td>5:00 a.m. rowing practice</td>
<td>Emergent to implicit</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Overly sarcastic people</td>
<td></td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
The rank ordering of this student's elements along the two bipolar continua that are identified is limited and inaccurate. In the first continuum, 5:00 a.m. rowing practice is ranked 1st, while people who are overly sarcastic is ranked 2nd. This might suggest that rowing practice is something that is more easily controlled than are sarcastic people. Further, in the second continuum, the rank ordering is reversed, whereby "sarcastic people" is ranked 1st, and "rowing practice" is ranked 2nd. In this instance, it might be thought that the rowing practice is less easily controlled than the sarcasm of peers. Although the rank ordering suggests that consistency exists with regards to the placement of each element towards one end or the other of the bipolar continua, this student's repertory grid does not provide enough elements or enough constructs to supply accurate ranks for each element. Therefore, despite the consistency of this subject's profile with his self-report data, his repertory grid does not elicit sufficient data from which notable conclusions can be made. Consequently, a ninth participant, subject 4013-10 (i.e., low stress-high achiever), is included in the study.

Subject 4013-10, LS-HA Male. Subject 4013-10 identifies 10 stressors. This list includes getting in trouble if someone else does something, getting a lot of homework, having a lot of projects due on the same day, doing something wrong without knowing it, not doing well in sports, getting a bad mark on a test, being teased, being laughed at if I mess up at something, not being able to do something, and getting a bad mark when I should have done well. These stressors are very specific and are in no way consistent with his self-reported stress level (i.e., low stress) or with his self-reported academic achievement level (i.e., high achiever). The number of stressors and the nature of the
stressors revealed by this student are suggestive of a person who is very high stressed, who suffers from insecurity, and who does not necessarily excel academically. Thus, other methods of triangulation are necessary to confirm the self-report data provided by this student’s visual analogue scale (e.g., interview notes and teacher confirmation). Despite the self-report data (i.e., LS-HA), this particular student’s profile is not indicative of a low-stress student. Further, the interview notes recorded also support the profile, and not the self-report data.

The within-case analysis of the elements in this particular grid suggests that the salient features that contribute to this student’s stress are academic, social, self, and time management related. The participant demonstrates a fear of failure by his consistent use of depreciative language to describe the experiences within his academic, social, and personal life. For example, getting a bad mark when I should have done well, being laughed at if I screw up at something, and doing something wrong without knowing it, are stressors that use derogatory words, and tones to describe his academic, social, and personal stress (see Table 12).

Additional forms of social stress also appear to be dominant in this student’s profile. It becomes evident that he feels that he is unable to meet the expectations of his peers in all capacities, including athletic and academic ability, and that he feels as though he is the object of ridicule in many social situations. Finally, the issue of time management stress is demonstrated by this subject’s concern for having too many assignments due on one day, having a lot of homework, and getting bad marks on tests.
Table 12

Profile: Subject 4013-10

<table>
<thead>
<tr>
<th>Elements</th>
<th>Ranking Emergent to implicit</th>
<th>Ranking Emergent to implicit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low self-esteem, low perceived ability, low emotion control</td>
<td>Low self-esteem, low perceived ability, low emotion control</td>
</tr>
<tr>
<td>Get in trouble if someone else does something</td>
<td>10 7 8 8 7</td>
<td>6 9 2 2 3</td>
</tr>
<tr>
<td>Get a lot of homework</td>
<td>2 4 4 7 5</td>
<td>2 8 9 9 5</td>
</tr>
<tr>
<td>Having a lot of projects due on the same day</td>
<td>1 5 4 7 5</td>
<td>2 9 10 9 5</td>
</tr>
<tr>
<td>Doing something wrong without knowing it</td>
<td>9 2 3 9 1</td>
<td>1 2 5 3 7</td>
</tr>
<tr>
<td>Not doing well in sports</td>
<td>10 7 3 2 6</td>
<td>2 5 5 4 6</td>
</tr>
<tr>
<td>Getting a bad mark on a test</td>
<td>8 8 3 1 3</td>
<td>5 3 3 4 9</td>
</tr>
<tr>
<td>Being teased</td>
<td>9 9 10 3 10</td>
<td>5 9 3 2 2</td>
</tr>
<tr>
<td>Being laughed at if I screw up at something</td>
<td>10 9 9 3 9</td>
<td>6 4 2 3 8</td>
</tr>
<tr>
<td>Not being able to do something</td>
<td>9 9 2 10 2</td>
<td>7 2 4 3 9</td>
</tr>
<tr>
<td>Getting a bad mark when I should have done well</td>
<td>8 10 2 2 2</td>
<td>5 3 2 5 8</td>
</tr>
<tr>
<td>Name</td>
<td>Address</td>
<td>Phone</td>
</tr>
<tr>
<td>------</td>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>John Doe</td>
<td>123 Main St.</td>
<td>555-1234</td>
</tr>
<tr>
<td>Jane Smith</td>
<td>456 Maple Ave.</td>
<td>555-5678</td>
</tr>
<tr>
<td>Mike Johnson</td>
<td>789 Oak Lane</td>
<td>555-9876</td>
</tr>
<tr>
<td>四川</td>
<td>成都</td>
<td>123456</td>
</tr>
<tr>
<td>深圳</td>
<td>Shenzhen</td>
<td>678901</td>
</tr>
</tbody>
</table>

- **Notes**
  - Consider using a different format for the notes column to provide more detailed information.
The 7 identified bipolar constructs do not exemplify a low stress or a high achieving nature. Included in the list of emergent constructs are feeling rushed and crammed, didn’t know what I was doing, feeling that I am not good at anything, and not being good at anything, feeling upset and incapable, feeling mad, feel angry, feel sad, and feeling incapable. The salient features elicited from the emergent constructs are low self-esteem and low perceived ability, low emotion control, control, and time. These constructs do not contribute to the profile of a low-stress student. Rather they paint a colourful portrait of someone who is very high stressed. Similarly, the salient features derived from the implicit constructs are that the student has very little confidence, and that he feels that he performs inadequately with respect to athletics and academics. These qualities are also not indicative of a high achieving student. Rather they present a compelling argument for the low achiever.

The implicit constructs identified by this student’s repertory grid are feel angry, feel dumb, feel sad and angry, feeling incapable, feel sad, feel mad, and feel crammed. Oddly, the salient features elicited from the implicit constructs are consistent with those derived from the emergent constructs. This revelation proposes that the student’s interpretations of his identified stressors are consistently negative, as is also consistent with the stressors that are revealed.

The rank ordering of the elements places them almost invariably at the emergent end of the continua. Get a lot of homework, having a lot of projects due on the same day, doing something wrong without knowing it, not doing well in sport, getting a bad mark on a test, and getting a bad mark when I should have done well, are consistently ranked
five and less. Thus, they are elements that contribute to this participant’s low self-esteem, low perceived ability, and low emotion control. Further, they cause stress because they do not allow him to feel in control, and they do not allow him to practise his time management strategies effectively.

The remaining elements, including get in trouble if someone else does something, being laughed at if I screw up at something, and not being able to do something are ranked more consistently at the implicit end of the continua. Contrary to the development of the repertory grids developed by this participant’s peers, these elements are not categorised by a different set of salient features. Thus, each of these elements also contributes to low self-esteem, low perceived ability, and low emotion control. Further, they do not provide a feeling of being in control or a feeling of using effective time management strategies.

Subject 4013-21, LS-HA Male. The elements revealed in this student’s repertory grid support his self-report data, with respect to his stress and academic achievement levels (i.e., LS-HA). With some difficulty, this student was able to identify 5 stressors, including English class, interruptions, certain homework (mainly English), tests, and work that I do not like to do. The difficulty that he endured when identifying stressors reinforces the consistency between his self-report data and his stress level (i.e., low stress). In his profile, this student reveals academic-related stressors. However, these stressors are not the result of a difficulty that he suffers in school. Rather, the identification of academic-related stressors is an indication of his apathy towards the material. The student’s teacher later confirms this notion. Further, this student’s self-
reported academic achievement level (i.e., high achiever) also confirms the data revealed in the repertory grid.

The within-case analysis of this student’s elements reveals two salient features. These are academic and forced work. Each of the elements in the repertory grid can be categorised beneath each of the salient features derived from the data. That is, English class, interruptions (according to the triadic method), homework, tests, and work that I do not like to do, are all school-related, and are all work that the student believes that he is forced to do (see Table 13).

Six bipolar constructs are revealed in this student’s repertory grid, and are comparable to his self-report data for stress and achievement. The emergent constructs include too much at once/overwhelming, do not enjoy, annoying (i.e., interruptions), increase stress (i.e., English class and work I don’t like to do), teacher (i.e., English class and tests), and things that I do not enjoy. The salient features evoked from the emergent constructs identified by this student are components of irritability, and the situations that are nonpleasurable. It is notable that these two salient features are interdependent. That is, although they are separate entities, they display a cause and effect relationship among them, whereby the situations that are nonpleasurable are also the situations that cause irritation.

The implicit constructs revealed by this student include annoying (i.e., interruptions), things that are easy, things about which I have no choice, things that are lower stress, and forgetting the insignificant things (i.e., homework). The salient features derived from these implicit constructs are the things cause irritation and the things in the
Table 13

Profile: Subject 4013-21

<table>
<thead>
<tr>
<th>Elements</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emergent to implicit</td>
</tr>
<tr>
<td></td>
<td>Irritability, non-pleasurable</td>
</tr>
<tr>
<td>English class</td>
<td>1</td>
</tr>
<tr>
<td>Interruptions</td>
<td>5</td>
</tr>
<tr>
<td>Certain homework</td>
<td>2</td>
</tr>
<tr>
<td>Tests</td>
<td>4</td>
</tr>
<tr>
<td>Work I do not like to do</td>
<td>3</td>
</tr>
</tbody>
</table>
student's life that he feels eliminate authority to make personal choices. Once again, all of the stressors can be categorised beneath both of the salient features. Also, although the salient features are derived separately, they are interdependent. That is, the things that do not allow this student to make personal choices are the same things that cause him to be irritated.

Within this student's repertory grid, three elements are consistently ranked 3 and lower. Therefore, it can be said that the elements are emergent and cause the student to feel irritated by the nonpleasurable nature of them. These emergent elements include, English class, certain homework, and work that I do not like to do.

The two elements that are consistently ranked above 3 include interruptions and tests. Each of these elements reflects implicit qualities. Further, these elements emulate this student's irritability because they revoke his freedom to make personal choices about the elements that cause stress.

This student's self-report data suggest that he is a low stress-high achiever. The data revealed by the repertory grid are consistent with his self-perception for stress and for academic achievement. The interview notes also confirm the self-report for stress. However, the teacher confirmation for academic achievement is not consistent with this student's self-perception of his academic achievement levels.

Subject 1029, LS-LA Female. This student's self-report data from the VA scale do not suggest that she is a LS-LA. However, along with subject 3005, this student's data are closer to this categorisation than any of the remaining participants. Despite this limitation, the elements that are revealed in her repertory grid support a self-report of
relatively low stress and are somewhat consistent with a self-report of low academic achievement levels. This student identified 6 stressors, including school, homework, home, friends (some), parents, and sleep. The salient features derived from the within-case analysis of her repertory grid suggest that this student's concerns are academic, social, familial, and health related. The elements that are consistent with her academic stress include school and homework. Further, the elements that affect her social stress are friends (some), school, home, and parents, while the elements that are included as familial stress are home and parents. Finally, the health-related stressors that this student endures include sleep (lack of), friends, home, and parents (see Table 13).

This student elicited 8 bipolar constructs on her repertory grid. The emergent constructs revealed are no choice, daily chore, necessary (stressful), have to be a certain way, routine, must and want to do, give me warning, no choice. The implicit constructs revealed are choice, no chores, always on my back, be any way you want, not routine, blamed for things I do, leave without warning, and choice. The salient features derived from both sets of constructs are that this student prefers to be in control and that she favours routine and structure.

Within the list of emergent constructs, associations are made to group analogous constructs into the categorisations of salient features. Consequently, no choice, necessary (stressful), have to be a certain way, must and want to do, give me warning, and no choice are those constructs that are thought to be associated with control and choice, as salient features. Additionally, daily chore, routine, and have to be a certain way are thought to be associated with routine and structure. Within the list of implicit constructs,
Table 14

Profile: Subject 1029

<table>
<thead>
<tr>
<th>Elements</th>
<th>Ranking Emergent to implicit</th>
<th>Control, routine, structure</th>
<th>Control, routine, structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>School</td>
<td>5 1 5 1 1 1 2 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home</td>
<td>6 5 4 3 4 5 4 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friends (some)</td>
<td>1 6 1 5 6 4 6 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parents</td>
<td>3 4 6 2 5 6 1 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homework</td>
<td>4 2 3 4 2 2 3 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sleep</td>
<td>2 3 2 6 3 3 5 5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
similar associations are made to group the similar constructs into categorisations of salient features. Thus, choice, always on my back, and blamed for things I do are reflective of the salient features control and choice. Further, no chores, be any way you want, not routine, and leave without warning are consistent with the salient features routine and structure.

The rank ordering of elements along the bipolar continua reveals that “parents” is evenly ranked between emergent and implicit ends (i.e., 3rd, 4th, 6th, 2nd, 5th, 6th, 1st, and 3rd, respectively). School, homework, and sleep are ranked more consistently toward the emergent end of the continua, thus reflecting the student’s need for these elements to be in her control and of her own choice, as well as to be routine in her life. Further, home, and friends (some) are ranked implicitly on each of the continua, and are therefore considered to be elements over which she prefers control and personal choice, as well as structure.

The constructs that this student identifies do not confirm her academic ability and provide very little indication of her stress level. Thus, the interview notes and the teacher confirmation are later discussed as triangulation methods that will confirm the credibility of the repertory grid analysis and of the self-report data.

Subject 3005, LS-LA Male. The self-report data of this student is consistent with the extreme case criteria for low stress. However, the data revealed by his repertory grid are not consistent with this depiction. Further, his self-report data for academic achievement do not clearly suggest that he is also a low achiever. Rather, his self-report data reveal that his rating on the VA scale surpasses the criteria for low achiever by 1.8
points on the 10-point continuum. Nevertheless, his data were the closest to the
categorisation for LS-LA of any of the remaining participants, and are so used in the
study.

The elements revealed in this student's profile do not support his self-perception
for stress or academic achievement levels (i.e., LS-HA). He identified 12 stressors
including, sports, family (got in trouble), exam time, homework, going to work, losing
money, fighting, a few friends, vacation, teachers, hot weather, and people smoking. This
student's stressors are very specific and are in no way consistent with his self-reported
stress level (i.e., low stress) or of his self-reported academic achievement level (i.e., low
achiever). The number of stressors and the nature of the stressors revealed by this student
are suggestive of a person who is high stressed. Similarly, the nature of the stressors
identified also suggests that this student does not demonstrate academic concerns.
Instead, he displays the characteristics of a high achiever. In order to ascertain the
credibility of the data revealed by this student, other methods are also addressed in
subsequent sections of the data analysis (e.g., interview notes and teacher confirmation;
see Table 15).

The salient features that are derived from the elements identified in the repertory
grid include social, academic, familial, financial, health, and work-related. Included in
the subject's list of social stressors are sports, vacations, family, going to work, and a few
friends. His main health concerns are hot weather, fighting, and that people smoke, and
his familial concerns include family (got in trouble) and vacation. The issues that this
Table 15

Profile: Subject 3005

<table>
<thead>
<tr>
<th>Elements</th>
<th>Choice and control</th>
<th>No control, awareness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emergent to implicit</td>
<td></td>
</tr>
<tr>
<td>Sports</td>
<td>12 4 12 1 11</td>
<td>7 6 12 12 1 7</td>
</tr>
<tr>
<td>Family (got in trouble)</td>
<td>4 3 10 5 7</td>
<td>9 9 8 1 6 6</td>
</tr>
<tr>
<td>Exam time</td>
<td>1 6 6 8 9</td>
<td>4 11 2 5 10 4</td>
</tr>
<tr>
<td>Homework</td>
<td>6 2 7 7 8</td>
<td>5 5 3 7 5 9</td>
</tr>
<tr>
<td>Going to work</td>
<td>10 5 8 6 6</td>
<td>6 1 5 10 2 10</td>
</tr>
<tr>
<td>Losing money</td>
<td>7 9 3 10 12</td>
<td>3 2 6 8 7 5</td>
</tr>
<tr>
<td>Fighting</td>
<td>3 10 2 12 5</td>
<td>11 8 10 2 11 2</td>
</tr>
<tr>
<td>A few friends</td>
<td>9 1 4 4 10</td>
<td>10 10 7 3 8 11</td>
</tr>
<tr>
<td>Vacations</td>
<td>11 8 11 3 4</td>
<td>8 12 1 11 3 8</td>
</tr>
<tr>
<td>Teachers</td>
<td>5 7 5 9 3</td>
<td>2 3 11 6 9 3</td>
</tr>
<tr>
<td>Hot weather</td>
<td>8 12 9 2 1</td>
<td>1 1 4 4 9 4 12</td>
</tr>
<tr>
<td>People smoking</td>
<td>2 2 1 11 2</td>
<td>12 7 9 4 12 1</td>
</tr>
</tbody>
</table>
students has related to school include exam time, homework, and teachers, while his financial concerns concern losing money, and going to work.

Subject 3005 also revealed 10 bipolar constructs. The emergent constructs identified are, always thinking, minor—not control, not necessary, sustainable, no control, no choice, get over things quickly, school-related—have to do it, no consequences, things that worry me, and things that are forgivable. From among this list of emergent constructs, the following salient features are derived: that the student wants to have control over his thoughts and feelings and that he does not want to relinquish his freedom to make personal choices. In grouping the constructs accordingly beneath the salient features, minor— in control, no control, get over things quickly, school-related—have to do it, no consequences, and things that worry me may be considered aspects of this student’s life that he feels he can control. Additionally, always thinking, things that are not necessary, things that are sustainable, and things that are forgivable may be categorised with the freedom of personal choice.

The salient features derived from the implicit constructs include the things that detract from the subject’s ability to maintain choice and control and about which he wants to be aware. The implicit constructs that are related to choice and control include, major—no control, no control, resolvable, I do not remember particular incidences, personal choice, and I know what to expect. Although some constructs overlap, those that fall under awareness are relieving and relaxing, positive or negative stress, not necessary, I do not remember particular incidences, necessary to apologise, things with consequences, and I know what to expect.
Among the 12 elements that are revealed by this student’s repertory grid, none are rank-ordered most consistently towards the emergent end of the continua. Rather, four of these elements are ranked equally emergent and implicit, including fighting, teachers, hot weather, and smoking. This analysis suggests that these elements are those about which the student feels control and personal choice are important and also about which the student feels he needs to be aware.

The eight remaining elements, including sports, family (got in trouble), exam time, homework, going to work, losing money, a few friends, and vacations, are elements that are ranked consistently 6 and higher along each bipolar continuum. These stressors are those about which the student wants to maintain control and personal choice and also about which he feels he needs to be aware.

Interview Notes and Teacher Confirmation

The interview notes and the teacher confirmation play roles of some significance in the analysis and interpretation of the data. Both are subjective in nature. That is, they are determined based on the observations made by the researcher or by the teacher. Consequently, they are used coherently and also in conjunction with the repertory grids. It is intended that these sources of triangulation will help to confirm the credibility of the self-report data, but that they will not suggest credibility independent of other sources of triangulation.

The interview notes provide descriptions of each participant that would not otherwise be observed. For example, the information that is revealed by the interview notes exposes significant details with respect to some observable characteristics and
mannerisms of the participants. These include, but are not limited to, such things as the cooperative nature of the subjects, the assumed disclosure of honest information, the detail and precision of the responses, and the student's interest in the study, among others (see Table 16). The interview notes are intended to confirm each participant's stress level, as this stress level is indicated in the self-report data.

Consistent with the role of the interview notes, teacher confirmation is also a means of confirming the self-reported data of the participants in the study. However, teacher confirmations do not serve any additional purposes. Consequently, the teachers are asked to comment on the achievement status of the students in the study. A high achiever is distinguished by an academic average of $\geq 80\%$, and a low achiever is distinguished by an academic average of $\leq 60\%$. It is thought that teachers are able to provide an insightful confirmation of self-report data for academic achievement.

As with the student profiles for elements and constructs, salient features are derived from each individual interview log (see Table 17). The similarities in the observations that are made for each individual are recorded and are categorised in this way. For example, subject 4010 is observed to disclose information comfortably during the interview process. Similarly, subject 1019 demonstrates comfort during her interview. The observed willingness of any of the participants to disclose information comfortably is noted, and a salient feature that encompasses the characteristics of comfort is derived. The term "rapport" describes the comfort in the interview and then becomes a salient feature in both scenarios. Each participant's data are regarded in this way, and are later compared in cross-case syntheses.
Table 16

Student Profiles: Descriptions of Interview Notes

<table>
<thead>
<tr>
<th>Participant</th>
<th>Descriptions of interview notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>4010</td>
<td>prior disciplinary action, troubled individual; co-operative, comfortable disclosing information; honest; pleasant, polite, sincere; interested, no probing, desire to be analysed</td>
</tr>
<tr>
<td>1019</td>
<td>friendly; comfortable disclosing information; helpful, accommodating; interested; in-depth, detailed, thorough; frustrated, troubled</td>
</tr>
<tr>
<td>3021</td>
<td>intelligent, articulate, concise, organised; in-depth, expansive; helpful, honest; questioning; stressful, quick</td>
</tr>
<tr>
<td>2011</td>
<td>quick; thorough; concise, organised, clear</td>
</tr>
<tr>
<td>4004</td>
<td>probing, disinterested; supported, understood, no pressure by others; excels in school</td>
</tr>
<tr>
<td>4013-10</td>
<td>shy, peer pressure; sad, frustrated, angry; impartial; concerned, interested</td>
</tr>
<tr>
<td>4013-21</td>
<td>kind, polite; talkative, helpful; understanding; determined; uncertainty</td>
</tr>
<tr>
<td>1029</td>
<td>pleasant, kind; talkative, comfortable disclosing information; clear, thorough; reflective, hates to think; peer pressure</td>
</tr>
<tr>
<td>3005</td>
<td>kind, polite; helpful, co-operative; no probing; quiet; articulate; thorough; quick; patient</td>
</tr>
</tbody>
</table>
### Table 17

**Student Profiles: Salient Features of Interview Note Descriptions**

<table>
<thead>
<tr>
<th>Participant</th>
<th>Salient features</th>
</tr>
</thead>
<tbody>
<tr>
<td>4010</td>
<td>aggressive/troubled; rapport; respectful; interested</td>
</tr>
<tr>
<td>1019</td>
<td>troubled; rapport; respectful; interested; thorough</td>
</tr>
<tr>
<td>3021</td>
<td>rapport; interested; thorough; precise; anxious</td>
</tr>
<tr>
<td>2011</td>
<td>thorough; precise; anxious; prioritisation; organised</td>
</tr>
<tr>
<td>4004</td>
<td>disinterested; social; academic</td>
</tr>
<tr>
<td>4013-10</td>
<td>troubled; rapport; interested; social influences</td>
</tr>
<tr>
<td>4013-21</td>
<td>rapport; respectful; interested; patient; confusion</td>
</tr>
<tr>
<td>1029</td>
<td>rapport, respectful; precise; social influences; academic, introverted</td>
</tr>
<tr>
<td>3005</td>
<td>rapport; respectful; interested; thorough; precise; introverted; anxious; patient</td>
</tr>
</tbody>
</table>
Subject 4010. The summary descriptions taken directly from the interview notes for subject 4010 include prior disciplinary action, troubled individual, cooperative, comfort in his disclosure of information, honest, pleasant, polite, sincere, interested, no probing, and desire to be analysed. Some of these observed traits (e.g., prior disciplinary action, troubled individual, interested, and desire to be analysed) suggest that the student’s self-report data for stress level (i.e., high stress) are accurate. The remaining traits are not indicative of stress level. Rather, they are mere descriptions of the way in which this student discloses information about himself. Therefore, both the repertory grid and the anecdotal notes confirm this student’s self-report data for stress level.

Similarly, the repertory grids and teacher confirmation are the resources used for comparative analysis of academic achievement. In this instance, the teacher’s confirmation does not support the self-report data. The teacher states that although this student struggles with his academics, he has a potential to be successful. The teacher’s opinion is that the student is an average student, not a low achiever, and that the student’s consistent infractions of the law inevitably detract from his academic success.

Consequently, the repertory grids appear to fully confirm the student’s self-report data, while the information obtained from the teacher confirms that the student is not a high achiever.

From among the interview note descriptions, four salient features are derived. This student discloses signs of aggression and troubled behaviour, he maintains a good rapport with the interviewer, he is respectful of himself and of the interviewer, and he is interested in the study. The aggression is apparent only through the elements that are
revealed, while the troubled behaviour is evident in his mannerisms throughout the interview. The student’s rapport, respect, and interest are also evident throughout the interview. A paradox exists, however, with regards to these three salient features. That is, although the student demonstrates rapport, respect, and interest during the interview, the information elicited from his repertory grid does not show a consistency in his behaviour in his everyday life.

**Subject 1019.** The interview with subject 1019 discloses that she is friendly, that she is comfortable disclosing detailed, thorough, and in-depth information about herself, that she is helpful, accommodating, and interested, and that she is a frustrated and troubled individual. The anecdotal notes taken during the interview confirm this student’s self-perception for stress level (i.e., high stress). In all aspects of her testimonial, she displays an interest to go beyond the requirements of the study. That is, she shares details about her stressors, and seeks help with regards to these stressors. Therefore, both the repertory grid and the interview notes are valid and reliable measures of congruence for stress level.

As with subject 4010, student 1019’s self-perceived academic achievement level (i.e., low achiever) is not confirmed by her teacher. That is, her teacher states that this student’s grades are superior to those of a low achiever. Consequently, although the repertory grid seems to confirm her self-reported data, the second source of triangulation is not consistent. It may be that this student’s high stress nature convinces her that she does not, or cannot, excel academically. It may also be that because this student’s invested interests are not school related, but social, her perceived academic ability is low.
Further, although the anecdotal interview notes are not meant to be measures of congruence for academic achievement, it is worthy to note that although this student perceives herself to be a low achiever, the thought processes that she appears to follow during the interview do not justify this self-reflection. Her answers are detailed, thorough, and indepth, which suggests that she is reflective and that she exhibits the academic qualities of a high achiever.

From this interview, 5 salient features are elicited and include her troubled, yet respectful, nature, a good rapport with the interviewer, her interest in the study, and the thoroughness of her responses.

**Subject 2011.** This student provides quick responses throughout the interview, which indicates that she has an anxious nature. Despite this quickness, her responses are thorough, concise, organised, and clear. The salient features that are derived from this student's interview include thorough, precise, anxious, prioritisation, and organisation. A distinction is made between “thorough” and “precise”, whereby thoroughness is the process that leads to the delivery of a response, and precision is the way in which the delivery is verbalised. In this case, the student is thorough in her thought process. That is, she thinks about her responses, and quickly delivers them. The concision, the clarity, and the organisation with which she delivers these responses demonstrates her precision.

This student’s self-report data show that she is a high stress individual. The interview notes reveal consistencies with this self-report data. The nature of the stressors elicited is an obvious indicator of her high stress nature. In addition, the demeanour with which she responds during the interview also suggests, more subtly, her high stress
nature. For example, the student responds quickly, which suggests that she is anxious (i.e., eager), and that she is highly stressed.

Further, the interview notes and the teacher's confirmation support the self-report data revealed by subject 2011. The thorough responses from the interview were clear, organised, and concise. These qualities illustrate the reflective nature of the student and confirm her high academic achievement status. Also, the teacher's confirmation of the student's self-report data for academic achievement verifies the credibility of the VA scale results.

Subject 3021.

As with subject 2011, this student's self-report data for stress level and for academic achievement level are confirmed during the interview. He is quick to respond, but his thoughts are concise and organised. The summary of the description of the interview notes reveals that this student is intelligent, articulate, concise, and organised. Further, his responses are indepth, expansive, honest, and helpful. His quickness to respond also demonstrates his stressful nature, but he remained inquisitive throughout the interview, which demonstrates his high academic ability. Consequently, the self-report data, the repertory grids, and the interview notes are effective measures of triangulation and display the congruence that exists among each source.

Consistent with the observations made from the anecdotal interview notes, it also confirmed that congruence exists between this student's self-report data of academic achievement and his teacher's confirmation of his academic achievement level. Thus,
this student’s self-report data (i.e., high stress-high achiever) is confirmed by all sources of triangulation.

The salient features derived from this student’s research notes include a good rapport with the interviewer, an interest in the study, thorough and precise responses to interview questions, and an anxious demeanour that confirms his self-perceived stress level.

**Subject 4004.** It was apparent that this student found the interview process to be mundane. This was observable via his obvious disinterest in the study. As a result, the interviewer was forced to probe the student for more detailed responses. However, the attempts made to derive complete and useful information were futile. This was the first confirmation of the student’s self-report data for stress level (i.e., low stress). The information that was elicited by this interview reveals that this student is well supported by his friends and by his family, and that because these support networks understand his beliefs and his needs, the student does not feel pressured by them. It is also determined that the student is not stressed by the rowing as a sport, but that he is irritated by the times at which the rowing team practises. The observations about this student are consistent with the elements that he reveals in his repertory grid, and each confirms his self-report data for low stress.

The teacher confirmation is also consistent with the student’s self-report data for academic achievement. In fact, the teacher states that this student is a very high achiever. Further, the student’s repertory grid reveals profound congruence with both the self-report data and the teacher confirmation. Also noteworthy is that the teacher was also
able to confirm the student’s low stress nature. That is, when subject 4004 did not provide sufficient data from which notable conclusions could be made and a request was made to include an additional student in the study, the teacher stated that subject 4004 was often very “laid back” and unaffected by his surroundings. Consequently, all sources of triangulation confirm the self-report data for stress and for academic achievement levels.

The salient features derived from the interview with this student are disinterest, social, and academic. The disinterest of this student is made evident in the anecdotal interview notes. The social aspect includes both of the elements elicited by the student (i.e., sarcastic people and rowing practice), as well as the notion of support networks (i.e., family and friends). Finally, the academic aspect refers to the student’s confession that he does not feel unnecessary stressors through academics because of the support he receives from his family and friends. It is worthy of mention that although the student did not confess to any stressors, positive or negative—even after probing—he does refer to the support of his family and friends during his interview. These two support networks may be considered positive stressors, although the informant does not see them as such.

Subject 4013-10. The summary descriptions of the interview notes for this subject include shy, peer pressure, sad, frustrated, angry, impartial (i.e., discloses information), concerned, and interested. Peer pressure is the only description that was not directly observed during the interview. Rather, this aspect was conveyed through the discussion about the elements that were revealed. The student demonstrated his sadness, his anger, and his frustration in the way that he described the elements. However, he was
not reserved about these feelings or about the elements that he elicited. The traits that were observed during the interview are in no way consistent with the student’s self-report data for stress level (i.e., low stress). Further, the number and the nature of the elements that are displayed in this student’s repertory grid are also inconsistent with his self-reported stress level.

The repertory grid of this student does not confirm his self-report data for academic achievement. In fact, the grid depicts a student who struggles academically. Further, the interview notes do not address the notion of academic achievement, and are also weak measures of congruence. However, the teacher’s confirmation with regards to the student’s academic achievement level is consistent with his self-report data. Therefore, the student’s obvious lack of self-esteem and perceived ability are not reflective of his grades.

From among the anecdotal descriptions, four salient features are elicited. These are troubled, rapport, interest, and social influences. The social influences that this student faces, as well as his troubled nature, create and are created by his sadness, his anger, his frustration, and the peer pressure that he endures. These revelations are made through the interview process, and through the elicitation of elements and constructs in the repertory grid. The student’s rapport and interest are also evident throughout the interview.

Among the descriptions that are drawn from the anecdotal interview notes, a paradox becomes evident. That is, although the student demonstrates and identifies that he is shy, he does not withhold any information about himself. He discloses personal
information without concern. His insecurities, his fears, and his lack of self-esteem do not present an obstacle during the interview process.

Subject 4013-21. This student identified himself as a low stress-high achiever. The repertory grid, the interview notes, and the teacher confirmation verify both aspects of this self-report data. The descriptions derived from the interview include kind, polite, talkative, helpful, understanding, determined, and uncertainty. This student's kindness, politeness, helpfulness, and talkative nature demonstrate his respect for, and his positive rapport with, the interviewer. His understanding of the importance of the interview encouraged him to show an interest in the study and to do his best to respond accurately during the interview. The uncertainty that occurred was the result of the difficulty that the student experienced when asked to form triads and the determination that the student expressed was to create constructs despite the difficulties he endured.

From among the aforementioned descriptions, the salient features that are revealed from the interview notes include rapport, respect, and interest, and confusion and patience (i.e., a combination of uncertainty and determination to create constructs for the repertory grid).

Subject 1029. The description notes of this student reveal that she is pleasant and kind, talkative and comfortable disclosing information about herself, most comfortable when one to one, clear and thorough, reflective but hates to think, and feels peer pressure. Her kindness, her talkative nature, and her comfort in disclosing personal information suggest that she is likely a low stress person, unaffected by the pressures of the interview. Conversely, her confession that she is less comfortable in group situations and that she
endures peer pressure suggest, that pressures that are unrelated to the interview affect her. Consequently, although the interview does not confirm that the student is a low stress individual when faced with a one-to-one situations, it is evident that when placed in a social situation (i.e., with her peers) this student feels pressured and insecure. Thus, her self-report data for stress level is confirmed by the revelations that she proposes during the interview, and not merely by the mannerisms she exhibits during the process.

This informant’s self-reported academic achievement level is closest to the low end of the 10-point bipolar continuum of the VA scale, although the repertory grid and the teacher confirmation do not verify this self-perception. However, because she reveals that she hates to think, it is possible that this contributes to her academic abilities. This revelation, combined with the reflective process that occurs during the interview, introduces a paradox. That is, the student admits that she hates to think, but it is evident that she exercises a reflective ability in order to provide accurate responses for her repertory grid. Thus, although she confesses to disliking school because she has to exercise her cognitive abilities, she does so efficiently.

The salient features that are derived from the interview note include a rapport, respect, precision (i.e., clear responses), social influences, academics, and introversion (i.e., reserved and shy). The rapport between the student and the interviewer and the respect that is evident during the interview emphasise this student’s pleasantness and kindness. The comfort that she feels in the one to one situation allows her to overcome her introversion. This becomes evident when she discloses personal information
thoroughly and precisely. Her social influences and her academics identified through the discussions that occur around peer pressure and her dislike for reflection.

**Subject 3005.** Consistent with the profile for subject 1029, this informant’s self-reported academic achievement level is also closest to the low end of the 10-point bipolar continuum of the VA scale, although the repertory grid and the teacher confirmation do not verify his self-perception. The anecdotal notes of this student reveal that he is kind, polite, helpful, cooperative, and that he does not need to be probed for responses. Further, he is quiet; articulate, thorough, and patient. The salient features that are derived from this student’s interview include a rapport with the interviewer, respect, interest in the study, thoroughness, precision, introversion, and patience.

Among these observations, the introversion and the patience that are exhibited are most indicative of this student’s low stress nature. The student speaks very softly and displays his shyness by the tone of his voice, and by his humble demeanour. That is, his physical gestures confirm his introversion. Further, because the interview with this student was conducted over a 2-day period, the student had to reschedule a second time slot because time was shortened on the first day. The student was pleased to reconvene, thus confirming his low stress nature. Thus, the interview notes provide justification for the student’s self-report data for stress, although his repertory grid does not.

Despite the student’s self-report for academic achievement, his interview is not congruent. Rather, the interview allows the informant to describe his stressors and his interpretations of them, and he does so very articulately. Also, it is noted in the interview notes that the student’s responses are precise and thorough. Similarly, this student’s
repertory grid and the teacher's confirmation of his academic achievement level do not confirm his self-report data. All three suggest that this student is a high achiever.

**Cross-case Analyses**

The qualitative analysis begins with individual cases, where the variations in these cases are the primary focus of the study (Patton, 1990). However, a synthesis of these individual cases, while still retaining the "uniqueness and holism of accounts even as [they are synthesised] in the translations" (Noblit & Hare, 1988, as cited in Patton, 1990, p. 425), provides an opportunity to develop theory through interpretation. Thus, in addition to the within-case analyses that are presented, cross-case analyses of the data are also necessary in order to observe the analogous features that are revealed by the adolescent informants in the study.

The salient features from within each student's profile are clustered according to their similarities, with the intention of creating qualitative themes across which the data may be generalised. The salient features that are derived from the repertory grids (i.e., elements, emergent constructs, and implicit constructs) and from the anecdotal interview notes are the main sources of qualitative categorisation. The findings from the cross-case analyses of each of these sources are outlined below.

**The Visual Analogue Scale**

The data collected using the VA scale are compared in two ways. First, the data are compared between extreme cases, whereby the stress and achievement levels for each student are compared to the data of the second student who also exhibits these levels of stress and achievement. Second, the data are compared across extreme cases, whereby
the stress and achievement levels for each student are compared to the data of the students who do not exhibit the same levels of stress and achievement (see Table 3).

Subjects 4010 and 1019 demonstrate consistency in their self-report data, thus placing them into the category high stress-low achiever. Further, their current perceptions of stress level, at the time of the study, are consistent (i.e., unhealthy). However, subject 4010 feels that his stress level is increasing, while subject 1019 believes that her stress level is stable. It is also noted that both students' responses for current academic achievement level are indicated as unhealthy but improving. Evidently, the analogue scale results are consistent with the statements made by each student about current stress and achievement levels.

The self-report data for subjects 2011 and 3021 are also consistent; that is both students are high stress-high achievers. Subject 3021 identifies, at the time of the study, that his current perception of stress level is healthy and stable. Conversely, subject 2011 feels that, for her, the same stress level is unhealthy and increasing. Despite these contradictions, both students identify that their academic achievement levels are healthy and stable.

Three students, subjects 4004, 4013-10, and 4013-21, are low stress-high achievers. In each case, the students identify their current stress level and their current academic achievement level as healthy and stable. Evidently these classifications are consistent with the analogue scale data revealed.

The two remaining students, subjects 1029 and 3005, are low stress-low achievers. In both cases, stress level is identified as healthy. However, subject 1029
identifies her stress level as stable, while subject 3005 reveals that his stress level is increasing. Further, subject 1029 views her academic achievement level as healthy and stable, while her counterpart views his academic achievement level as unhealthy but improving.

The Repertory Grid

The Elements. The salient features derived from the elements that are revealed by the nine participants include social, judicial, familial, financial, academic, athletic, support, success, self, and time, work and health-related stressors. A frequency tally of the stressors suggests that academic, social, familial, and time are the most recurrent stressors among the respondents. However, when the 12 salient features are arranged according to their similarities, three qualitative themes are extracted. They are (a) self-investment/self-improvement; (b) time management; and (c) a need for control (i.e., over the situations, events, and choices in one's life; see Table 18).

The theme self-investment/self-improvement is created when academic, time, athletic, self, health, and success are grouped together. Each of these are the salient features of the stressors that the respondents stated as being important to their self-concept and to their general success. For example, time, academic, athletic, and success are features into which the participants invest their efforts so that they will experience self-improvement. More personally, self, health, and success are said to contribute to self-improvement when efforts are invested in oneself.

Time management, as a qualitative theme, is elicited from the following salient features time, academic, social, familial, athletic, and work-related. The respondents
Table 18

Cross Case Thematic of the Salient Features of Elements

<table>
<thead>
<tr>
<th>Salient features of elements</th>
<th>Thematic</th>
</tr>
</thead>
<tbody>
<tr>
<td>academic, time, athletic, self, health, success</td>
<td>self-investment and improvement</td>
</tr>
<tr>
<td>time, academic, social, familial, athletic, work-related</td>
<td>successful balance of all areas: time management</td>
</tr>
<tr>
<td>judicial, financial, health, social, familial, athletic, time, self</td>
<td>need for control</td>
</tr>
</tbody>
</table>
consistently communicate that one major contributor to adolescent stress is the ability, or not, to successfully balance various domains in life at one time. The areas that are regarded as most frequently affected by poor time management are familial, social, and academic. Other combinations of domains that are affected by poor time management include academic and work-related, social and work-related, athletic and academic, and social and athletic.

The informants of the study consistently allude to the need for control over the choices that affect their lives. The salient features that affect the ability of these participants to take control over these choices are judicial, financial, familial, and time. These features are considered to be restrictive or to exhibit restrictive qualities, and impact the amount of control that the students' feel that they have. Additionally, judicial, financial, familial, and health (e.g., people who smoke) are the features that have the power to revoke control from the student. They are recounted to be restrictive, binding, and completely out of their personal control (e.g., people who smoke and the penal system). Finally, the students present a concern for being able to maintain control of their lives. The salient features over which the students express that they do have control are financial, health, athletic, self, and time. That is, the students feel that they are able to make informed judgements about these features, and are able to take responsibility for them, without needing the support of their family or peers.

The Emergent Constructs. The within-case analyses of the emergent constructs evoke 16 salient features. These salient features are organised according to their shared traits, and three qualitative themes are derived from these groups (see Table19). These
Table 19

Cross Case Thematic of the Salient Features of Emergent Constructs

<table>
<thead>
<tr>
<th>Emergent constructs</th>
<th>Thematic</th>
</tr>
</thead>
<tbody>
<tr>
<td>social distraction, success, personal choice, control,</td>
<td>stressors are self-directed; self-</td>
</tr>
<tr>
<td>self-esteem, self-control, perceived ability, emotion</td>
<td>created</td>
</tr>
<tr>
<td>control, routine</td>
<td></td>
</tr>
<tr>
<td>consequences, pressure, evaluation, self-esteem,</td>
<td>stressors are caused by others;</td>
</tr>
<tr>
<td>irritability, nonpleasurable, indifference</td>
<td>standards created by others</td>
</tr>
<tr>
<td>time, routine, social distraction, success</td>
<td>stressors are time related; time</td>
</tr>
<tr>
<td></td>
<td>management</td>
</tr>
</tbody>
</table>
include (a) self-directed/self-created; (b) caused/created by others; and (c) time-related/time management, and are meant to provide a concise picture of the informants' interpretations of their elicited elements.

The first theme that comes from the data is that stressors are self-directed/self-created. The salient features that are grouped to form this theme are those that the participants directly relate to their "self". For example, success, personal choice, control, self-esteem, self-control, perceived ability, emotion control, routine, and social distraction are created, controlled, and experienced solely by their own abilities to do so. Thus, the student who wants to be successful, or who believes that s/he is expected to be successful, creates stress and becomes self-directed to achieve this goal (e.g., subject 3021). Similarly, the student who has a low self-esteem, a low perceived ability, and low emotion control (e.g., student 4013-10) becomes self-directed to cope with these stressors and creates the coping mechanisms to do so.

Conversely, the premise of the second theme is that others cause stressors and create standards. This theme suggests that such things as consequence, pressure, evaluation, self-esteem, irritations, nonpleasurable events, and people who are indifferent are features that make the informants feel inadequate, evaluated, misunderstood, and frustrated. Unlike the first theme, the informants who share the features of the second theme are able to project their blame towards others.

Finally, while consistent with the theme evoked from the salient features of the elements, the consensus among the informants is that stressors are also time-related. Thus, time management reappears as a qualitative theme in the data for emergent
constructs. The influential features that are grouped to form this theme include time, routine, social distractions, and success. The former two features are time related; however, the latter two features are time dependent. The students enjoy managing their schedules and routines and dislike that their poor time management skills detract from the things that they feel are important (e.g., social life, success).

The Implicit Constructs. Consistent with the cross-case analysis of elements, and of emergent constructs, the implicit constructs are delineated by three qualitative themes. These are (a) affect self-concept; (b) create a need/desire for control; and (c) time-related/time management. Although the theme titles appear to be similar to those of the emergent constructs, the salient features that contribute to the development of the implicit construct themes vary (see Table 20).

Social, inner challenges, success, self-esteem, perceived ability, and indifference of others are the features from which the first theme is evoked. These features are contributors of a positive, or of a negative self-concept (i.e., generalised idea or notion about oneself; R.E. Allen, 1991). Self-concept is affected positively by social life, self-esteem, perceived ability, success, and inner challenges, whereas the indifference of others, self-esteem, perceived ability, and the lack of success and social outlets create negative self-concepts.

The features that are said to provide control in the lives of the participants are control and choice, awareness, privacy, routine, self-esteem, perceived ability, and emotion control. The features that are said to require control include routine, social life,
Table 20

Cross Case Thematic of the Salient Features of Implicit Constructs

<table>
<thead>
<tr>
<th>Implicit constructs</th>
<th>Thematic</th>
</tr>
</thead>
<tbody>
<tr>
<td>social, inner challenges, success, self-esteem,</td>
<td>stressors affect self-concept</td>
</tr>
<tr>
<td>perceived ability, indifference of others</td>
<td></td>
</tr>
<tr>
<td>control, choice, awareness, routine, privacy, social,</td>
<td>stressors create a need/desire</td>
</tr>
<tr>
<td>inner challenges, success, self-esteem, perceived</td>
<td>for control</td>
</tr>
<tr>
<td>ability, emotion control</td>
<td></td>
</tr>
<tr>
<td>time, awareness, routine, privacy, success, social</td>
<td>stressors are time related; time management</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
success, and inner challenges. The notion of control is consistent throughout individual repertory grids, and is thus displayed as a qualitative theme.

The final theme that is derived from the within-case analysis for implicit constructs is time management. This theme is consistent throughout individual profiles. The time-related features from which the theme is derived are time, routine, and awareness. Thus, each of these features is controlled by the ability of the informants to manage their time effectively. In contrast, the time-dependent features include privacy, success, and social life, and are affected by the ability of the informants to manage their time effectively.

Interview Notes

The salient features of the interview notes revealed three qualitative themes. The themes are reflective of the observable qualities and characteristics of the informants. Consequently, they are related to the informants' comfort during the interview and to the delivery of the responses. Although the salient features from which the themes are evoked do not consistently relate to stress and academic achievement, the themes provide insight to these concerns. The qualitative themes are (a) attunement (i.e., students are engaged and interactive throughout the interview); (b) investment (i.e., student responses suggest social and academic investments); and (c) emotional responses (i.e., observable traits of students; see Table 21).

Attunement is realised through the rapport and respect that exist between the informant and the researcher. It is affected by the interest or disinterest and by the patience of the participants in the study. Consequently, the willingness of the students to
<table>
<thead>
<tr>
<th>Salient features of interview notes</th>
<th>Thematic</th>
</tr>
</thead>
<tbody>
<tr>
<td>rapport, interested, respectful, patient, disinterest</td>
<td>attunement (i.e., engaged and interactive)</td>
</tr>
<tr>
<td>thorough, precise, academic, social influence, prioritisation, organisation</td>
<td>investment (social and academic)</td>
</tr>
<tr>
<td>aggressive/troubled, anxious, introverted, confused</td>
<td>emotional responses</td>
</tr>
</tbody>
</table>
become interactive and to become engaged in discussion determines whether or not they are attuned within the interview, and suggests whether they are attuned in their own lives (i.e., are they interactive and engaged daily?).

The theme of social and academic investment refers to the quality of the responses provided by the participants and to the content of the responses provided. The informants are invested if they provide thorough, precise and organised responses, and if their responses address the priorities in their lives (e.g., academics and social influences). Investment suggests that the student balances various domains in life, and that s/he invests time into these domains.

The final theme with regards to the interview notes is “emotional responses”. The salient features that contribute to the development of this theme are directly observed through the behaviour of the students during the interview. However, these behaviours are confirmed in the repertory grids of the informants. Thus, it is evident that the students observe their personal ‘emotional responses’ in their own lives.

Interpretations and Discussion

The following five research questions are outlined in the first chapter:

1. What determines the “extreme” nature of these adolescents?
2. What were the common stressors that affected grade 9 students?
3. Were the identified stressors consistent with the literature?
4. How did the adolescents construct the stressors in their lives?
5. Was adolescent academic performance affected by stress?
The subsequent interpretations and discussions are based on the responses to these research questions as they relate to the qualitative themes derived from the data.

**The Extreme Nature of the Adolescents**

In the preliminary stages of the study, the extreme nature of the students is determined through the use of the VA scale. Consequently, the results obtained from this scale are the premise for the study. The extreme case adolescents who are noted for high and low stress levels and for high and low academic achievement levels become consequential components of the phenomenological investigation. The results obtained using the VA scale allow the researcher to compare each student's self-report for stress and achievement using the scale itself, and a small self-confirmation noted below each individual scale. Also, the extreme nature of the students is confirmed through the repertory grid. It is the comparability of the results from the preliminary stages of data collection to the results from the grids that create and confirm the extreme case nature of the participants in the study.

The two students who are high stress-low achievers (i.e., subjects 4010 and 1019) are consistent in their perceived levels of stress and academic achievement. The differences that occur are in the self-confirmations of these perceived levels. Both students recognise that their academic achievement levels are low, unhealthy, and improving. Further, both students recognise that their stress levels are also unhealthy. However, student 1019 states that her stress levels are stabilised, while student 4010 suggests that his stress levels are increasing.
When the data from the VA scale for subject 4010 are compared to the data from his repertory grid, it becomes evident that his perceived achievement level is low because many other stressors detract from his studies, and that these stressors are not like those identified by his peers. Despite the evidence that exists to explain his low achievement levels, there is nothing to support his self-confirmation that his academic achievement levels are improving. In observing the repertory grids for student 1019, it is evident that the stressors that she identifies are comparable to those of other students who participated in the study. Further, the stressors that she reveals are consistent with what is thought, in the literature, to be common for the average adolescent (e.g., school, family, and peer) (Millstein, as cited in Millstein et al., 1993).

Despite their consistent self-confirmations of academic achievement levels (i.e., healthy and stable), the self-confirmations for stress levels of the two high stress-high achievers (i.e., subjects 2011 and 3021) do not concur. Subject 2011 views her high stress level as unhealthy and increasing. Oddly, her repertory grid and her anecdotal notes propose that her stress is self-imposed and that she thrives on the pressure created by these stressors. It may be that the student has adopted efficient coping skills to deal with her stressors and that she is able to excel in school because of these skills. It is also thought that this student would benefit from stress management to stabilise her stress level.

Conversely, subject 3021 views his high stress level as healthy and stable. It is evident that this student also creates his own standards and continually thrives on these to be successful. His future aspirations also appear to be self-created standards, and his
repeated reference to desired success confirms his that he is comfortable with his high stress nature.

The low stress-high achievers (i.e., subjects 4004, 4013-10, and 4013-21) demonstrate the same self-confirmations for both stress and achievement levels. Each student refers to his stress level as low, healthy, and stable, and to his achievement level as high, healthy, and stable. Thus, the extreme nature of these three participants is quickly determined by their self-report data. However, the additional measures of congruence that are used in this study do not confirm all of the self-reports.

Subjects 4004 and 4013-21 express few elements and few constructs in their repertory grids. Further, the elements that are revealed are not consistent with what is identified in the literature to be common stress-causing elements (i.e., competence, confidence, academic, athletic ability, conduct, appearance, or acceptance by peers; Bibby and Posterski, 1992; Crockett & Petersen, as cited in Millstein et al, 1993). Consequently, it is thought that these low stress-high achievers provide accurate self-reports of their stress and achievement levels.

Conversely, student 4013-10 displays a number of elements and constructs in his repertory grid, and all are consistent with what is identified in the literature to cause stress in adolescents. This contradicts his self-report data for low stress. Thus, the student clearly experiences stressors that most Canadian teenagers also admit to experiencing (Bibby & Posterski, 1992), and evidently believes that these stressors are “normal”, where normal is conforming to a standard (R.E. Allen, 1991).
Finally, the low stress-low achievers reveal very different self-confirmations of their self-report data for stress and achievement levels. Consistent with the low stress-high achievers, student 1029 views her low stress as healthy and stable. She also provides the same description of her achievement level, despite the self-report that is provided. That is, she is a low achiever, but does not admit that this is unhealthy and that efforts should be made to improve her academic achievement levels. Although this student seems to be unconcerned, it may be that she has conformed to the beliefs of other Canadian teens. For example, a student states:

I think teens have too much pressure put on them from school and from their parents. At school it's 'You need high marks to go to university. You can't go anywhere without university.' At home it's the same and more. 'Those marks aren't high enough.' It just all adds up after a while (Bibby & Posterski, 1992, p. 89).

Thus, while student 1029 is a low achiever, it may be that she realises the pressures that exist and that she does not succumb to them. Rather, she keeps her stress level low by ignoring these pressures. Unfortunately, her achievement level does not improve as a result.

Student 3005 reveals that his stress levels are low and healthy, but that because of the academic demands placed on him at the time of the assessment, these levels were increasing. Thus, the student's stress level is directly affected by schoolwork. This student also reveals that his achievement level is unhealthy but that it is improving, which
suggests that he does not typically do well on his school assignments, tests, and exams, but that he is improving.

**The Common Stressors and Their Consistency with the Literature**

**The Elements**

The stressors that are said to affect students in grade 9 are of various domains. From the within-case analyses, salient features were derived. That is, the students in the study frequently identified specific features. References are made to school, time, athletics, health, success, self, social, familial, work, and judicial stressors. In reviewing the literature, these findings are consistent with other research. Bibby and Posterski (1992) address a number of personal concerns that Canadian teenagers in the ’90s have. This list of stressors includes academic, time, money, future, social, and familial.

Further, Millstein (as cited in Millstein et al., 1993) adds health and health-compromising behaviours to this list, while Offer et al. (1988) and Crockett and Petersen (as cited in Millstein et al., 1993) add “self” to the list of stressors endured by adolescents in the ’90s.

Three qualitative themes are derived from the salient features of elements in this study. They are (a) self-investment/improvement, (b) time management, and (c) need for control. Self-investment/improvement is drawn from features such as academic, time, athletic, self, health, and success, and may now be defined as, the interest in oneself and well-being, and one’s dedication to setting achievable goals and to being successful.

Although not all students will display self-investment/improvement in all areas of their lives, it has been suggested that most students who are in school will invest 5 out of 7
days per week in education (Bibby & Posterski, 1992). As a result, they will dedicate tremendous amounts of time to self-improvement, without even noticing.

Time management is consistent with the themes that are revealed in the literature. The study by Bibby and Posterski (1992) raises an interesting point that helps to clarify the issue of time as the informants in the present investigation have raised it. These researchers state that adolescents are assumed to have endless amounts of time on their hands. Parents, educators, and employers often do not realise that adolescents spend 6 hours in school, 2 hours at work, practising for a school team or a school band, 2 hours doing homework, 2 hours of down-time, 3 hours for meals, and 8 hours of sleep (Bibby & Posterski). This recount of a day in the life of a typical teen provides genuine reasoning to explain the issue of time management as a stressor for all adolescents. Thus, time management as it is implied in the present study is defined as the ability to successfully organise and regulate one’s time, and to maintain balance between the necessary and appropriate domains of life.

The participants in this study consistently demonstrate the desire to exhibit control over their own lives. As is discussed in the cross-case analysis of elements, the notion of control refers to taking control, or to having control revoked. Strangely, the literature does not directly address these issues of control with regards to adolescence. However, suggestions are made that the inclusion of adolescents in the decisions that are relevant to their lives will vividly demonstrate to them that they are valuable participants in their social environments (Millstein, as cited in Millstein et al., 1993). This statement offers tremendous insight to the responses provided by the participants in the present
study. In joining the above statement with the present theme, a need for control may be defined as a desire to become empowered and to be responsible for making one's own choices, as they relate to one's well-being.

The Interview Notes

The salient features that represent stressors, and observations made during the interview, are grouped according to their similarities. The features are grouped into three categories, or themes, and include (a) attunement (i.e., engaged/interactive), (b) social/academic investment, and (c) emotional responses.

The themes derived from the elements create a foundation on which subsequent themes are based. As such, the themes evoked from the interview notes are not akin in meaning to the themes identified earlier; however they do display similarities. For example, the notion of attunement refers to the engagement and to the interactive nature of the participants in the study with regards to the interview process. However, it may also be said that this attunement is also manifested in other contexts. Thus, although the students develop rapport with, and a mutual respect for, the interviewer, demonstrate an interest in the study, and display patience during the interview process, it is also likely that these traits are demonstrated in other areas of their lives. Further, it is expected that students who are attuned in all domains will also be active contributors to self-investment and improvement.

The second theme, investment, is also comparable to the theme self-investment/improvement. The interview notes identify that academic investment is based on the thoroughness, precision, articulation, prioritisation, and organisation of the
responses. Further, social investments are dependent on the social domain of the student. It is thought that the students who are invested in the interview are also invested in their studies, and in other areas of concern (e.g., social, athletic, family). Consequently, investment is defined as the interest in life’s domains, and the devotion to maintaining positive associations within these domains.

The last theme addressed in cross-case analysis of the interview notes is emotional response. This theme is derived based on traits that are observed during the interview. For example, a number of students appeared aggressive and troubled, anxious, introverted, and confused. These traits are visible indicators of emotional response. These responses are displayed throughout the interview, but are also reportedly displayed in other areas of the students’ lives. For example, student 4010 displays aggression in his responses. It may be that his emotional response lacks impulse control (Offer et al., 1988), thus providing a possible explanation for his unlawful behaviour. From these interpretations, emotional response is defined as a response that is controlled, or not controlled, by one’s emotions.

The Interpretations of the Constructs

The stressors that are revealed by the students are interpreted within the repertory grid. The interpretations of these elements occur along a bipolar continuum, whereby the positive pole is emergent and the negative pole is implicit. The themes elicited from the emergent constructs include (a) stressors are self-directed/created, (b) stressors/standards are caused/created by others, and (c) stressors are time related.
The time theme is previously discussed, and reflects the same ideas with regards to the literature as it is reintroduced as a construct. The differences that do exist are related to the salient features combined to evoke the theme. The features time and routine are time related. That is, they are associated with time management. However, the features social distractions and success are time dependent. That is, the students who reveal these features in the list of emergent constructs are concerned with the time that is taken from their social engagements and with the time that is required to become successful.

A paradox is evident within the first and second themes for emergent constructs. The first theme suggests that stressors are self-directed and self-created, while the second theme states that stressors/standards are caused/created by others. Despite the paradoxical nature of these themes, there is a consistency with the literature. For example, Bibby and Posterski (1992) state that pressures are both self-imposed and brought on by others. With regards to the present investigation, when students self-set goals that are too challenging and unattainable, they manifest their own stress, and if they do not meet their personal goals, they disappoint only themselves. However, when control is revoked, and a parent or teacher sets expectations that are too high, the student is at risk of failing and of disappointing others. The feeling is that these students do not want to be subjected to stress that is created for them by others.

Themes are also derived from the implicit constructs. These are (a) stressors affect self-concept, (b) stressors create a need/desire for control, and (c) stressors are time-related. The notions of control and time have previously been discussed. The
interpretations of these themes are that students prefer to endure stressors that are evoked by their own standards, and that time involves successfully organising and regulating one’s time, and balancing between the necessary and appropriate domains of life.

The third theme is related to self-concept (i.e., generalised idea or notion about oneself; R.E. Allen, 1991). The salient features that contribute to one’s self-concept include social life, success, inner challenges, self-esteem, perceived ability, and indifference of others. Within this list are self-created contributors to self-concept and contributors that are created by others. This revelation is consistent with what is suggested by Bibby and Posterski (1992), whereby stressors can be self-created or brought on by others. In this case, personal success, inner challenges, perceived ability, and self-esteem are the self-imposed features that affect self-concept. Thus, the students are in control, and are empowered to enhance their self-concept. However, in some instances, control is revoked, and the students do not have the ability to make decisions about their lives. Such is the case with social life, self-esteem, and indifference of others. These three features affect self-concept and are not always within one’s control.

**Stress and Academic Achievement**

Since perceived stress and achievement levels vary among the 9 participants, a brief review of each subject’s portfolio would best address whether or not stress affects academic achievement. However, because the nature of the study is phenomenological, the interpretations that are made are based on the self-identified data (i.e., VA scale and repertory grids) of the participant. This does not discount the credibility of two
remaining sources of triangulation. Rather, it allows the researcher to provide interpretations based precisely on each participant’s self-perception.

**Subject 4010**

This student is a low achiever. He is also a high stress individual, which is confirmed by the nature and number of elements he elicits. In reviewing his repertory grid, it becomes evident that the stressors this student identifies are social, familial, judicial, and academic. Socially, the student involves himself in unlawful and delinquent acts. Although he does not specify the nature of these acts, the student states that he suffers consequences for them. The consequences that he identifies are judicial, familial, social, and academic. Thus, the elements in this student’s grid appear to be cyclical, whereby one affects another, and each of these elements does contribute to the student’s academic achievement level.

**Subject 1019**

This student is also a low achiever and a high stress individual. In reviewing her repertory grid, it becomes evident that her identified stressors are social, familial, and academic. The social stress in her life appears to be the most positive stress, although it contributes negatively to her family and academic stress. She expresses that, when her peer group accompanies her she is not concerned about her grades and she does not have to think about school. Further, the pressure that is created by her family forces her to spend time with her friends. Thus, her stressors also affect one another and are major contributors to her low academic achievement level.
Subject 2011

This student is a high stress individual. She also identifies herself as a high achiever. The stresses that she reveals are academic, athletic, familial, social, evaluation by others, and time parcelling. This student is an example of an individual whose stressors are self-created. The stresses that she identifies are stressors that demonstrate her attunement and her investments on a personal, social, familial, and academic level. It is thought that the time stress that this student reveals is a positive stress, in that her time parcelling abilities allow her to maintain a balance between each of her stresses, in all aspects of her life. Thus, this student’s achievement level is affected positively by stress. It is noteworthy, however, that if she did not effectively parcel her time, the stresses that she endures might contribute negatively to her academic achievement level.

Subject 3021

This student also identifies himself as a high stress-high achiever. Similar to student 2011, this particular student’s stressors are also self-created. He exhibits self-investment, attunement, and investment in all areas that he discusses. His stressors are athletic, success, time management, self, and support networks. These stressors contribute immensely to his success and to his academic achievement level because they are positive stressors. He displays confidence that he will achieve the goals that he has self-set, and he is in control of his ability to do so.

Subject 4004

This student identifies himself as a low stress-high achiever. In reviewing his repertory grid, it is immediately noted that stress does not affect his academic
achievement level. The student identifies only two social stressors. However, he suggests that these stressors are merely irritations, and that they do not affect him or his ability to excel in school.

Subject 4013-10

Based on this student's self-report data, his achievement level is not affected by the stressors in his life. This student is a low stress-high achiever. However, his repertory grid suggests that his stress level is higher than he identified on his VA scale. Nonetheless, he reveals 10 stressors that are academic, social, self, and time related. Despite the impact that these stressors appear to have on this student's self-concept, they do not affect his academic achievement level.

Subject 4013-21

This student is also a low stress-high achiever. His stressors are academic in nature. He refers to an English class, and each of the subsequent stressors is related to this class. Despite their nature, the academic stressors that the student elicits do not affect his academic achievement level.

Subject 1029

This student is a low stress-low achiever. Her stressors include academic, familial, social, and health. In the within-case analysis of her data, this student's academic stress was reported to be something over which she wants control. Thus, her academic achievement level is based more consistently on the control that she has or does not have over her studies than on the three remaining stressors that she identifies. She
does not express stressors that detract from her studies and does not appear to be concerned with her achievement level.

**Subject 3005**

This student’s self-report for stress level is not consistent with what is revealed by his repertory grid. He identifies himself as a low stress individual, but his grid portrays the image of a high stress individual. His achievement level is self-reported low, but does not appear to be affected by the stressors that he reveals. His concern with regards to his academics is that he maintain control over his success. Thus, although his grid clearly contradicts his self-reported stress level, and although he addresses some academic concerns, they are not related to his ability to achieve academic success.

**A Brief Synthesis**

This study examines extreme cases for stress and academic achievement levels. The following interpretations are made. The academic achievement levels of:

1. Students who are high stress-low achievers will be affected negatively by stress;
2. Students who are high stress-high achievers will be affected positively by stress;
3. Students who are low stress-high achievers will not be affected by stress; and
4. Students who are low stress-low achievers will not be affected by stress.
CHAPTER FIVE: SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Overview

A phenomenological investigation of adolescent stress and academic achievement has been researched, conducted, analysed, synthesised, and reviewed within this document. The study of phenomenology was utilised because it allowed the researcher to capture the essence of the adolescent experience as the participants in the study describe their perceptions of, their interpretations of, and their experiences with identified stressors.

An introduction to the study is provided in the first chapter, and the literature related to the study is presented in Chapter Two. Chapter Three includes the methodology and procedures implemented in the study, including the data collection processes. Consistent with the notion of phenomenology, the study adopted and adapted the visual analogue scale (Montelpare & Kanters, 1994), and the Repertory Grid Technique (Kelly, 1955). Both techniques provide direct insight into adolescent stress and academic achievement from the most reliable and relevant sources—adolescents.

The visual analogue scale and the repertory grid technique were used in conjunction with the anecdotal interview notes and the teacher’s confirmation of academic achievement, through triangulation, to measure congruence among the data collection procedures. The four methods of data collection are described and discussed in detail in Chapter Three. The data which were collected are presented in Chapter Four by means of within-case (i.e., individual student profiles) and cross-case (i.e., derive qualitative themes from across the data) analyses. The findings are also interpreted and discussed in this chapter.
The present chapter reexamines Chapter One to determine what conclusions may be drawn from the analysis of the data. Further, the outcomes of the study are examined for their implications for practice, theory, and further research.

Conclusions

The present investigation is based on the theoretical framework of the personal construct theory. This construct system is based on an “approach to understanding how people think and feel about aspects of their world” (Candy, as cited in Mezirow, 1990, p.273). The application of this theory in the present study provides an opportunity to examine individual self-concepts (i.e., the only position from which an individual’s behaviour can be learned in great depths) through the unity in the experiences of each participant.

The students were asked to identify the stressors that they perceived to have the greatest effects on their lives, and were then asked to identify their interpretations of these stressors. The students were not given a working definition of stress, and so their perceived stressors were based on their understanding of what stress is. The literature differentiates first between eustress and distress, whereby eustress is the commitment to accomplishment and distress is frustration and resentment (Donatelle & Davis, 1996; Selye, 1980). The findings of this study suggest that it is the high stress-high achievers who exhibit eustress. However, there is no generalisation that can be made for extreme case adolescents with regards to distress.

Also differentiated in the literature are daily hassles and major life events. This distinction suggests that daily hassles are the small, irritating episodes with which we are
frequently faced (Dohrenwend et al., 1984), and that major life events are the stressors that cumulate over time and may be related to physical and mental illness (Dohrenwend et al.). The findings of the study reveal that the stressors identified by the participants are more appropriately hassles, and not major life events.

The notion of the self is frequently addressed in the literature on adolescents (e.g., Offer et al., 1988). It is noted that people successfully execute tasks that fall within their range of perceived self-efficacy, but shun or fail those that exceed their perceived resources (Bandura, 1982). This is consistent with the notion of the extreme cases used in the study. That is, students who are high achievers are also likely to have a high perception of self-efficacy. Consequently, they are likely to master the challenges with which they are faced. Conversely, the student who is a low achiever is likely to experience low individual perseverance (Bandura), and to shun or fail challenges.

Also related to the notion of self is resiliency. Students who are high stress-high achievers face challenges and surface with new skills and self-understanding (Richardson et al., 1990). Similarly, students who are low stress-high achievers would also surface with self-understanding, but would not initiate challenges. It is not evident that resiliency is demonstrated by other extreme cases. Rather, students who are high stress-low achievers and low stress-low achievers are more likely to be overtaxed by the challenges that they encounter.

McMillan and Reed's resiliency attribute model (1984) provides an accurate depiction of high stress-high achievers. These students are encouraged to be self-reliant, to set clear and achievable goals, to be optimistic, and to maintain hope despite the
stressors that affect their lives. They use their time positively, and are involved in extracurricular activities that contribute to their self-esteem and to their belief that they will succeed. Their success provides them with a sense of accomplishment. They use their family positively, whereby they are able to develop a sense of trust with people other than parents and a support network outside of the home. In light of the findings of the present study, no other extreme cases exhibit these attributes.

Among the most important support systems in adolescence were the peer groups and the family system. Albeit support systems are accessible to most students, individual appraisal of support resources influences one’s perception of a stressful event. Researchers have sought to examine the link between social support and adolescent stress. The findings of this study lend support to the notion that peer groups are very important in adolescence, and that they operate as stress buffers, particularly for the students who exhibit qualities of high stress-low achievers. Students who are high stress-low achievers are likely to use their support networks as a defence between the event that they find is stressful and their reaction to this stress, thus preventing a stress response.

Further, the family as a support network is recurrent in the literature, although it is not referred to as such in the findings of the study. Rather, students from all extreme cases identified family as a stressor, not as a support, although this does not suggest that the families of these students are uninvolved or authoritarian (Lamborn et al., 1991). However, truancy, critical comments, and authoritarian parenting do lead to less advanced cognitive development and school failure (Baldwin et al.; Feldman & Wentzel,
Thus, it may be that the students who are low achievers do experience the sadness of authoritarian parenting.

Miller (as cited in Hendee, 1991) stated that the goal of the family was to support the developmental needs of its members at each stage of life. Parents who are nurturing and authoritative foster cognitive skills that serve as a basis for school success (Baldwin et al., as cited in Rolf et al., 1989; Feldman & Wentzel, 1990; Wentzel, 1994). Consequently, it may be that the students who are high achievers have parents who are nurturing and authoritative.

The literature suggests that self-efficacy, resilience, family support, and peer supports are important determinants of adolescent stress and academic achievement. Good parenting and good peer support are said to precede competent behaviour, and appropriate conduct in the classroom is said to precede academic success (Feldman & Wentzel, 1990). The findings of this investigation are relatively consistent with the literature. The students who are high stress-high achievers have high self-concepts, are resilient, and likely have good parenting and good support networks. Further, they are very attuned to the world around them, and are invested in their lives, and in their success. Those who are high stress-low achievers are not likely to have good self-concept, will struggle with resilience, and may also have lenient and permissive parents. However, their peer groups act as stress buffers, whereby their stress responses are mediated by their social outlets. These students exhibit attunement, but are not invested in their own lives.
Low stress-high achievers are not attuned to the world, but are invested in their own lives and in their success. They will exhibit good self-concept, and some characteristics of resiliency, however, they are not likely to create their own challenges, or to set challenging goals. Finally, their family and peer supports contribute to their academic achievement levels in the classroom. The final extreme case, the low stress-low achievers are the students who are not attuned to the world around them, or invested in their own lives. They exhibit low self-concept, are not resilient, and whose stress buffers are few. They are also likely to have parents who are authoritarian and critical, thus negatively influencing their ability to achieve success in the classroom.

Implications of the Outcomes

Implications for Practice

The fundamental reason for teaching is to help others learn something (Brookfield, 1990). Anything that educators do to contribute to this purpose is skilful teaching, despite any variations that may occur from the traditional expectation about how teachers are supposed to behave (Brookfield). Educators who help students diagnose their difficulties within an area of study, who arrange individual counselling with students to enhance their self-esteem, or who put students in touch with others who share their enthusiasms are effective teachers (Brookfield).

Educators must also remember that accounts of significant learning are often expressed in terms of feelings (e.g., depression, fear, anger, and anxiety). Learning is an activity that is invested with significance by students, and by which concepts of the self may be seriously threatened (Brookfield, 1990). Consequently, educators need to
become aware of the feelings of the learners, and to become comfortable with allowing students’ displays of emotion to run their natural course.

The personal construct theory, as it is employed in this study, will provide educators with a means of becoming aware of the feelings of the students in a classroom. A one-to-one engagement with students before the school year gets under way will provide an opportunity for students to privately express their perceived levels of self-efficacy, their levels of self-esteem, and their perceptions of their abilities as learners. Teachers can then monitor and nourish student learning, by paying attention to the realm of learning styles that exist (e.g., Gardiner’s Multiple Intelligences; Lazear, 1992).

The student-teacher meetings should occur, pre- mid-, and post-academic terms, but should not occur in isolation. That is, following the assessment interview (i.e., pre) the teacher might implement stress management programs, time management programs, or resiliency programs, among others, into the learning agenda for the year. The types of programs that are required will be dependent on the results that are obtained from the one-to-one processes that occur to begin the term. While the teacher benefits from knowing and understanding the struggles and competencies of each student, the students will also become aware of and more understanding of themselves and of their perceptions and reactions to the stressors in their lives. They will also become familiar with and develop an understanding for their competencies as learners, and will refine and develop these skills accordingly.

Despite this study’s implementation of the personal construct theory to examine adolescent stress and academic achievement, educators can implement their own
modified versions of the systems, whereby they would address areas that they feel impact learning more specifically (e.g., reading). In such cases, the educator might revert to the structure of the repertory grid originally presented by Kelly (1955). This would allow the student to identify, for example, the role titles of those whom they perceive influence their learning.

A realm of possibilities exists for the implementation of the personal construct system into a teacher's repertoire for effective teaching. However, the use of this system is not without time constraints. In the process, teachers will become better time managers, more organised, and more understanding. Brookfield (1990) states that:

In human communication the potential for mutual miscomprehension is ubiquitous, especially in the complex relationship between teachers and students. If you want to teach responsively, and if you want your adjustments, shifts, and changes to have something like the effects you intend, then you must first of all have as full an understanding as you can of how students experience learning. (p.30)

In addition to the usefulness of the personal construct system in the classroom, it would also be useful to implement into the world of business. James (1998) states that business firms have turned to employee assistance programs (EAP) to help their disheartened and emotionally stressed employees. The inclusion of the personal construct system into the list of EAPs would benefit the employer and the employee.

Employers are not likely aware of the self-perceived levels of stress and achievement of employees. Based on the findings of this study, employees who
demonstrate the characteristics of a high stress-high achiever will be attuned to their surroundings, become involved in the company, will be invested in their work, and will bring success to the company. Employees who are high stress-low achievers are likely to be very attuned with the company, but will not produce the results that are required for good production. Their low achieving nature will reflect their investment in themselves and in their work.

The employees who self-report low stress-high achiever will get the job done, but will not make all of the necessary investments to do so. Further, these employees will not be engaged and interactive in the company. Rather, they will concern themselves only with what they need to do to get the job done. Finally, the employees who self-report low stress-low achievers are not likely to be attuned, engaged, or interactive within the company, and will not be productive employees.

Evidently, the implications for the personal construct system go beyond the realms of teaching in the classroom and extend to areas of business and overall wellness. The personal construct system is an effective means of familiarising oneself with students or employees because it can be modified to suit the needs of the teacher or of the employer. In the classroom, the system will benefit the teacher and the students. They will work together to become partners in the classroom, setting common goals, rather than becoming rivals in the battle for education. Further, in the business world, the employer and the employee will also benefit together. As an EAP, the personal construct system as implemented in this study will increase awareness of stress and achievement
levels and will provide employers with an avenue by which success and production are attainable.

Implications for Theory

The theoretical basis for this study was to have adolescents look in on their own thoughts and values and to become better acquainted with themselves. In this search for understanding, the respondents recalled events and situations that they believed affected their stress levels and their academic performance. The premise of this framework was derived from a philosophical assumption referred to as “constructive alternativism” (Adams-Webber, 1979). The constructivist’s view was that knowledge was not a copy of reality, but rather a construction of experiences. That is, we do not respond to our environment, but rather to our interpretations of it (Mancuso & Adams-Webber, 1982).

The personal construct system presents a path by which the findings of this study confirm the constructivist’s view. The students identify the elements along the horizontal axis of the repertory grid. However, they are not asked to respond to the meanings of the individual elements. Rather, the elements are placed randomly into triads, and the students are asked to interpret their feelings towards the element, not the element itself. Thus, the constructs, or interpretations, of the elements then appear dichotomously along the vertical axis.

Similarly, the fundamental assumption of the personal construct theory contends that “a person’s processes are psychologically channelized by the ways in which he anticipates event” (Kelly, 1955, p.46). More simply, Kelly suggests that human behaviour and experience is better understood when we see it as the consequence of
anticipating future events, and not as a reaction to a stimulus (Button, 1985). In context, it is not the participants’ stressors and experiences with stress that should cause a reaction. Rather it is the students’ anticipation and relation to other experiences (i.e., their interpretations) that should evoke reactions. Thus, the participants’ stress levels are a direct response to their interpretations of their stressors and to their interpretations of similar experiences.

Theoretically, the personal construct theory offers an expansive and detailed way to have students interpret the stressors and their experiences with these stressors. The findings of the study genuinely confirm the importance of and the accuracy of the theoretical framework outlined. The personal construct theory and qualitative phenomenology have created accurate depictions of the participants in the study. These processes allowed the researcher to observe what was identified to be in and on the minds of the adolescent participants. Pedagogically, their theoretical implications are tremendous.

Recommendations for Further Research

The participants in this study were students who attended a school that is said to offer programs for students who are gifted (i.e., students with an unusually advanced degree of intellectual ability that requires differentiated learning experiences; Stanovich & Jordan, 1995). In the present investigation, an assumption was made that the participants in the study had no physical and/or mental exceptionalities; however, student giftedness was not regarded to be exceptional. During the sampling stage of the investigation, the teacher did not voluntarily disclose that any of the students were
“gifted” and did not disclose this information when asked to confirm student self-report data during the triangulation stage of the investigation. Consequently, the study was limited, both by the possibility that any of the participants were gifted and subsequently by the availability of students who did meet the criteria for all extreme cases of stress and academic achievement levels.

Despite the high-achieving abilities of students who are gifted, the data that would be obtained from these students cannot be generalised to students who are mainstreamed (i.e., students in regular education classrooms). Based on the limitations that surround the selection of participants for the study, the following recommendation is made. If the intention of the study is to obtain results that can be generalised to mainstream students, a teacher’s assessment of student exceptionality should be requested before beginning the data collection process.

Despite the credibility of the VA scale (Clark & Spear, 1964), this self-report measure would be more readily accepted by sceptics if it were to be accompanied by a self-identification “pencil and paper” test with which it could be cross-referenced. Candy (as cited in Mezirow, 1990) stated that most inventories and questionnaires present respondents with hypothetical situations for which responses have to be invented, rather than recalled. It is thought that this type of scale would supplement the VA scale if it were used as an assessment of stress level and not as an identification of stressors. One such scale is the Student Stress Scale (Anspaugh, Hamrick & Rosta, 1994).

The Student Stress Scale lists 31 possible stressors (i.e., familial, social, judicial, financial, emotional, geographical, academic, and health related) and a corresponding
score for each stressor. The respondents are asked to check off the stressors that they have experienced and to sum the scores of each stressor they identified. Interpretations of the scoring are also provided on the scale. In the present investigation, the Student Stress Scale would be useful to confirm a student's high stress or low stress self-report, but would not be sufficient independently.

The VA scale in this study asked the informants to identify their perceived stress and academic achievement levels at one particular moment on one particular day (i.e., situational). Despite the importance of this immediate self-report, it is thought that the VA scale would also be a useful comparative tool over a period of time. Thus, self-report data collected at the beginning of the academic year (i.e., September), midway through the academic year (i.e., December/January), and then again at the time of the final phase of data collection, would demonstrate changes and modifications to perceived stress and academic achievement levels. Also, the reasons for these changes could be charted, and discussed during the final phase of data collection. It is, therefore, suggested that a longitudinal approach would contribute to a more detailed and accurate understanding of each informant's self-perceived stress and academic achievement levels.

Consistent with the timeline recommendation made for the VA scale, the repertory grid would also generate more detailed and accurate data if it were done at three intervals during the year. This would reduce the chance that the stressors identified are situational, and would allow the researcher to better interpret whether the stressor that are identified are daily hassles or if they are in fact major life events.
In the event that the nature of the study is qualitative, a computerised version of Kelly’s Repertory Grid Technique (1955) and a computerised repertory grid analysis program (i.e., OMNIGRID) are available. The OMNIGRID may be used to quantify and statistically analyse the relationship between a standard set of elements (i.e., role titles) and the constructs that are generated about these elements (Sewell, Adams-Webber, & Cromwell, 1991; Sewell, Adams-Webber, Mitterer, & Cromwell, 1992).

The informal conversational interview was an effective means of gathering data because it eliminated the rigidity and tension that are often associated with interviews (e.g., job interviews). The informal conversational interview (ICI) was selected for this investigation so that the participants could reveal their elements and constructs, and not be probed for responses. Although the intention of the researcher was to provide a more comfortable environment for the respondents, this compromised the elicitation of more detailed descriptions of the individual repertory grids. That is, a more engaged and meaningful conversation with each participant would allow the researcher to record detailed anecdotal notes to better supplement the data provided in the repertory grid (i.e., elements and constructs).

In addition, the time allotment for each interview should be prearranged according to the student’s availability. The respondents of the present investigation were interviewed during scheduled class time, approximately 40 minutes. It is recommended that all interviews be arranged with the student immediately following the school day. These arrangements may contribute to more engaging interviews, more attuned students, and better use of time for each respondent’s interview.
Conclusion

This study used the personal construct theory as a phenomenological tool to identify and interpret life stressors in students who are self-perceived high stress-high achievers, high stress-low achievers, low stress-high achievers, and low stress-low achievers. Further improvement is needed to make this study an effective tool for pedagogical and corporate use. A number of revisions have been made to advance studies in adolescence and in individualised adolescent exploration. However, the study has made significant contributions to the broadening application of personal construct theory. "As [this] range of convenience . . . continues to expand . . . it seems inevitable that new ideas will spark the need for further revisions" (Sewell et al., 1991, p. 186).
References


APPENDIX A

Visual Analogue Scale Data
ADOLESCENTS: STRESS AND ACADEMIC PERFORMANCE INDICATORS

Subject Number: 4010  
Today's Date: 4/30/98

Stress:
Please indicate on the following line YOUR current perceived level of stress.

My stress is out of control.

My current perception of my stress level is: Healthy  
Unhealthy  

My level of stress is: Stable  
Increasing  

Academic Performance:
Please indicate on the following line YOUR current perceived academic performance level.

My school work is hard, and I am failing courses.

My current perception of my academic performance level is: Healthy  
Unhealthy  

My academic performance level is: Stable  
Improving  
Stress:

Please indicate on the following line YOUR current perceived level of stress.

My stress is out of control.

My current perception of my stress level is: Healthy  Unhealthy

My level of stress is: Stable  Increasing

Academic Performance:

Please indicate on the following line YOUR current perceived academic performance level.

My school work is hard, and I am failing courses.

My current perception of my academic performance level is: Healthy  Unhealthy

My academic performance level is: Stable  Improving
ADOLESCENTS: STRESS AND ACADEMIC PERFORMANCE INDICATORS

Subject Number: 2011  
Today’s Date: April 30/98

Stress:

Please indicate on the following line YOUR current perceived level of stress.

My stress is out of control.  
No stress, boring.

My current perception of my stress level is: Healthy  
Unhealthy

My level of stress is: Stable  
Increasing

Academic Performance:

Please indicate on the following line YOUR current perceived academic performance level.

My school work is hard, and I am failing courses.  
My school work is easy, and I am “acing” courses.

My current perception of my academic performance level is: Healthy  
Unhealthy

My academic performance level is: Stable  
Improving
ADOLESCENTS: STRESS AND ACADEMIC PERFORMANCE INDICATORS

Subject Number: 30.21

Today’s Date: April 30, 1998

Stress:

Please indicate on the following line YOUR current perceived level of stress.

My stress is out of control.

My current perception of my stress level is: Healthy ✓

Unhealthy

My level of stress is: Stable ✓

Increasing

Academic Performance:

Please indicate on the following line YOUR current perceived academic performance level.

My school work is hard, and I am failing courses.

My current perception of my academic performance level is: Healthy ✓

Unhealthy

My academic performance level is: Stable ✓

Improving
Subject Number: 4004

Today's Date: ____________

**Stress:**

Please indicate on the following line YOUR current perceived level of stress.

My stress is out of control.

My current perception of my stress level is: Healthy ✓

Unhealthy ______

My level of stress is: Stable ✓

Increasing ______

**Academic Performance:**

Please indicate on the following line YOUR current perceived academic performance level.

My school work is hard, and I am failing courses.

My current perception of my academic performance level is: Healthy ✓

Unhealthy ______

My academic performance level is: Stable ______

Improving ______
ADOLESCENTS: STRESS AND ACADEMIC PERFORMANCE INDICATORS

Subject Number: 40/13 - 10  
Today's Date: April 30 1998

Stress:

Please indicate on the following line YOUR current perceived level of stress.

My stress is out of control.

My current perception of my stress level is: Healthy  
Unhealthy

My level of stress is: Stable  
Increasing

Academic Performance:

Please indicate on the following line YOUR current perceived academic performance level.

My school work is hard, and I am failing courses.

My current perception of my academic performance level is: Healthy  
Unhealthy

My academic performance level is: Stable  
Improving
Subject Number: 4013-21  

Today’s Date: 

**Stress:**

Please indicate on the following line YOUR current perceived level of stress.

My stress is out of control.  

My current perception of my stress level is: Healthy ✓  

Unhealthy  

My level of stress is: Stable ✓  

Increasing  

**Academic Performance:**

Please indicate on the following line YOUR current perceived academic performance level.

My school work is hard, and I am failing courses.  

My school work is easy, and I am “acing” courses.  

My current perception of my academic performance level is: Healthy ✓  

Unhealthy  

My academic performance level is: Stable ✓  

Improving
Stress:

Please indicate on the following line YOUR current perceived level of stress.

My stress is out of control.

My current perception of my stress level is: Healthy ✓ Unhealthy 

My level of stress is: Stable ✓ Increasing  

Academic Performance:

Please indicate on the following line YOUR current perceived academic performance level.

My school work is hard, and I am failing courses. My school work is easy, and I am "acing" courses.

My current perception of my academic performance level is: Healthy ✓ Unhealthy 

My academic performance level is: Stable ✓ Improving  

Subject Number: 1029  

Today's Date: April 30/98
ADOLESCENTS: STRESS AND ACADEMIC PERFORMANCE INDICATORS

Subject Number: 3005                    Today's Date: 10.30

Stress:

Please indicate on the following line YOUR current perceived level of stress.

My stress is out of control.

My current perception of my stress level is: Healthy ✓ Unhealthy

My level of stress is: Stable ✓ Increasing

Academic Performance:

Please indicate on the following line YOUR current perceived academic performance level.

My school work is hard, and I am failing courses.

My current perception of my academic performance level is: Healthy Unhealthy ✓

My academic performance level is: Stable Improving ✓
APPENDIX B

Repertory Grid Data
<table>
<thead>
<tr>
<th>(Emergent) Construct 1</th>
<th>4010 Family</th>
<th>Male Friends</th>
<th>Girlfriend</th>
<th>Money</th>
<th>Law</th>
<th>Dad</th>
<th>Mom Working</th>
<th>Court Date</th>
<th>Lawyer</th>
<th>Paying Off Debts</th>
<th>26-May-98 Passing</th>
<th>Elements</th>
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<tr>
<td>Law</td>
<td>8</td>
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<td>7</td>
<td>10</td>
<td>1</td>
<td>3</td>
<td>6</td>
<td>11</td>
<td>Not related to the law</td>
</tr>
<tr>
<td>Things that make my dad angry</td>
<td>8</td>
<td>4</td>
<td>11</td>
<td>10</td>
<td>3</td>
<td>6</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>9</td>
<td>7</td>
<td>Dad does not know about</td>
</tr>
<tr>
<td>Say things without my wanting them to</td>
<td>9</td>
<td>7</td>
<td>11</td>
<td>3</td>
<td>4</td>
<td>8</td>
<td>10</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>6</td>
<td>Girlfriend does not know about</td>
</tr>
<tr>
<td>Make my dad angry</td>
<td>8</td>
<td>6</td>
<td>9</td>
<td>10</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>11</td>
<td>7</td>
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</tr>
<tr>
<td>Girlfriend suspects things</td>
<td>8</td>
<td>6</td>
<td>11</td>
<td>2</td>
<td>5</td>
<td>9</td>
<td>10</td>
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<td></td>
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<tr>
<td>Worried about making money</td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>Making money</td>
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<td>2</td>
<td>5</td>
<td>7</td>
<td>10</td>
<td>9</td>
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<td>6</td>
<td>4</td>
<td>2</td>
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Not worried about making $  
Girlfriend does not know  
Not involved
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<th>Construct</th>
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27-May-98

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Constant

Choice

Boring but of personal importance

Helpful things that are important

Reputation

Puts stress on me

Self-importance

Tiring
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Elements

- (Emergent) Construct 1
- (Implicit) Construct 2

- Ignore
- Not a waste of time

Student ID Elements: 4004 Rowing
Male Overly Sarcastic People

27-May-98
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<th>Male Get a lot of homework</th>
<th>Having a lot of projects due on same day</th>
<th>Doing something wrong w/out knowing it</th>
<th>Not doing well in sport</th>
<th>Getting a bad mark on a test</th>
<th>Being teased</th>
<th>Being laughed at if I screw up at something</th>
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Feel overwhelmed

Feel crammed

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28-May-98

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APPENDIX C

Research Log/Interview Notes
RESEARCH LOG
STRESS AND ACADEMIC PERFORMANCE

Student 4010
High stress-low achiever

Prior to this interview, the researcher had experienced an unfortunate incident with this student during a volunteer session at the high school. Minor disciplinary action was taken when the student displayed obnoxious and rude behaviours, and then refused to listen when the researcher spoke.

Surprisingly, during the interview, the student was very co-operative. In a one-to-one situation, this student appeared to be comfortable. Further, in the absence of his peers he was very pleasant. He was honest, and was comfortable disclosing personal information. An impression was noted that this student expected to receive a psychological analysis of his behaviour. However, he did not appear to be disappointed when this did not occur, although he also did not appear to be relieved.

This student had no trouble opening up, and sharing information. He did not need to be probed, or encouraged to reveal his stressors. He was interested in the study and was also interested in discovering something about himself. Further, he appeared to be happy that he was able to participate.

This student is very troubled, and has many unfortunate things going on in his life. These things unavoidably make him feel somewhat lost and frustrated. Despite these troubles, the student remained polite and sincere throughout the interview.

Student 1019
High stress-low achiever

This participant was very helpful, and very friendly. She, too, appeared to be disappointed that no psychological analysis was going to take place, and that her adolescent stressors were not going be evaluated and solved. This was felt because the student appeared to want to go into more depth than was required.

She was very kind, very helpful, and very comfortable disclosing personal information. Her interview was detailed and thorough. She was interested in participating, but also in discovering her stressors. She was troubled and frustrated with a number of things, and appeared to want to reveal, and evaluate these aspects of her life.
Student 3021
High stress-high achiever

This student identified himself as a high stress-high achiever. This categorisation became quite obvious during the interview. His thoughts were organised and, despite the quickness of his responses, they were concise, expansive, honest, and articulate. He also asked questions about the significance, the purpose, and the expectations of the study, an inquiry that was not made by any other participant.

It was apparent that this student thought too much about the task required of him. Thus, the task did not remain simplistic, but became expansive, in that his rank ordering was done separately (i.e., for individual constructs) first, and then combined to make a continuum.

Strangely, this grade nine student demonstrated a sincere concern for his future – distant future.

Student 2011
High stress-high achiever

This student identified herself as a high stress-high achiever, and her mannerisms were consistent with this self-report. She was also quick to respond, but her responses, including her rank ordering and her explanations of her constructs, were thorough, organised, and clear.

She did not identify time management as a stressor, as did some students. This did not seem to be unusual for her. She appeared to know what her priorities were, and managed her time accordingly.

She expressed her desire to succeed, and her concerns for her future.

Student 4004
Low stress-high achiever

Having identified himself as a low stress-high achiever, this student found it very difficult to identify stressors. The researcher tried to probe the student in an attempt to determine if his stressors were more numerous than he was willing to identify. Inquiries were made with respect to the negative stressors, and about the positive stressors in his life. He did not admit to having anything that caused him to feel stressed. Competition and evaluation did not make him stressed. He admitted that because his family and friends were so supportive and understanding, that he never felt as though he was under pressure.
For this student, school is something in which he excels (as was confirmed by his teacher). Thus, he did not feel unnecessary stressors through academics. He also appeared to enjoy rowing (despite the one identified stressor), and consequently, felt no athletic stress. Although co-operative, it was difficult to believe that a grade nine student would be so completely stress free.

Student 4013-21
Low stress-high achiever

This student identified himself as a low stress-high achiever, which was later confirmed by his teacher. He was kind, polite, and very helpful. Throughout the interview, the participant was quite talkative and expressed his understanding of the importance of the interview. For this reason, he did his best to outline the stressors in his life.

With this particular informant, some difficulties were encountered during the triadic method (i.e., when he was asked to identify the similarities and the dissimilarities between stressors).

Student 4013-10
Low stress-High achiever

This student’s interview was a surprise. He was a LS/HA (self-identified) but he revealed the stressors that were assumed (by the interviewer) to be the most prevalent among adolescents.

It was obvious that the student was shy, and that he was a “runt” in grade 9 (as was suggested by the informant). He revealed personal information comfortably, and confirmed the researcher’s beliefs that adolescents are still concerned about the same things as they were ten years ago. Further, he did not demonstrate a concern for his future.

The student also revealed feelings of sadness. He was honest, interested, and was glad to participate in the study.

Student 3005
Low stress-low achiever

This student was quiet throughout the interview, but was very co-operative. He was kind, and spoke articulately. He was polite and appeared to want to be as helpful as possible. This became obvious when, at 1:45 the interview was not yet complete and the student offered to reconvene the following morning, before classes were to begin.
He did not need any direction when identifying his stressors, which was surprising since he had identified himself as a low stress individual. However, he did require a lot of time to think about the triads, and the constructs. The ranking did not appear to be a big problem and was done rather quickly.

On the second day, the student was late, and we rushed through the last three constructs. He appeared to be more distracted than on the first day.

Student 1029
Low stress-low achiever

This student was pleasant and kind. She openly admitted that she hated to "think", and she was sometimes slow to understand concepts. However, she managed to provide sufficient data all the same. Ironically, she reflected on her stresses, and was able to identify and clarify some of these. She was also quite comfortable disclosing personal information – without a great deal of thought. She defined, and expanded on her responses, often before she was asked to.

Further, this student stated that she liked, and preferred, one-to-one, more than she enjoyed group interactions. During the interview, and after the interview, the informant talked about school, friends, and about wishing she had signed up in grade nine for the athletics programs which are offered at the school because she knew that it would be harder for her to start sports in grade 10.