LOCUS OF CONTROL, PERSONAL MEANING, AND SELF-CONCEPT BEFORE AND AFTER AN ACADEMIC CRITICAL INCIDENT

by

TANYA L. DAUM and GLENDON WIEBE

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Philip Laird, Ph. D., Thesis Supervisor

Marvin McDonald, Ph. D., Second Reader, Thesis Co-ordinator

Susan James, Ph. D., External Examiner

TRINITY WESTERN UNIVERSITY
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ABSTRACT

Change in control beliefs and dimensions of self are investigated in the context of students' first semester university experience. Questionnaires, including Wong's (1998) Personal Meaning Profile, Trice's (1985) Academic Locus of Control, and Marsh's (1992) Self-Description Questionnaire (SDQ) III, were administered to 116 participants, before, immediately after and 1 month after midterm exams to explore longitudinal processing of academic results and overall first semester transition to university. Students reported an increase of external academic locus of control scores and overall personal meaning scores regardless of whether they perceived their midterm exam results as successes or failures. As anticipated, findings showed that both academic locus of control and personal meaning were, amenable to change in the short term suggesting that these constructs might be more instable than proposed in literature. For students experiencing an academic success or failure, the results show that religious and academic aspects of self-concept are affected throughout the term as students ranked higher meaning from the religious, self-transcendent aspects of their stage in life than meaning in academics. It is suggested that students' changes in control beliefs and dimensions of self might be influenced more by the expectation of academic outcomes than the outcomes themselves as students invoke the self-serving bias in reconciling academic achievement while influenced by extra-curricular university opportunities. Virginia Satir's theory of counselling is presented as an overarching model for understanding and applying the study results to both student and campus health research.

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CHAPTER 1: INTRODUCTION

It has been said, “The only constant thing in life is change.” Perhaps this maxim rings most true for the young person beginning their post-secondary academic career. For many freshmen, this is their first experience away from home, friends and everything else familiar. Whether prepared or not, a new theme of independence begins to develop psychologically, socially, and emotionally. Coupled with these social and environmental changes is their unique cognitive and physical developmental stage–namely late adolescence. This stage includes continued physical-sexual development and the forging of a new identity and sense of self. Childhood concrete operational thought continues to develop into more abstract, formal operational thought, allowing for introspection and future oriented processes (Gullota, Adams, & Markstrom, 2000). Hacker (1994) points out that as many as 50% of incoming post-secondary students are still developing formal operational thought, often facilitating an existential search for self.

The existential search for self is a person's integration of experiences into a holistic way of being (May & Yalom, 2000). Each person experiences the conditions of past, present, and future existence, incorporating them into the self-concept. Self-concept can be described as the beliefs, feelings, and memories a person has of oneself (Byrne, 1996). Individual personality characteristics can be investigated to contribute to an understanding of the integrated whole. The freshman student is in active pursuit of the question "Who am I?" while experiencing life and making choices about whom they want to become (Hacker, 1994). As they make these choices, they actively construct meaning in their own life (Prager, 1996). Reker, Peacock, and Wong (1987) define meaning as

how a person makes "sense, order, or coherence out of one's existence" and "having a purpose and striving toward a goal or goals" (p. 44). These meanings become integrated into the students' self-concept (Wong, 1997).

Critical life incidents can deeply affect the integration of meaning into self-concept (Hacker, 1994). Through critical incidents, a person is caused to face the existential dread of death, confusion of indecision, hopelessness of meaninglessness, and despair of isolation. These existential concerns can result in anxiety and conflict in meaning and other personality characteristics (Hacker). To use a psychoanalytic concept, a person may unconsciously employ psychological defence mechanisms, such as a self-serving bias, to reduce their anxiety. Self-serving bias is invoked when people attribute successes to their own abilities while attributing failures to influences outside themselves (Weiner, 1979, 1986). Unfortunately, if taken to an extreme, such defences can block growth and lead to psychological illness like depression (Hacker). This study examines a critical incident that may lead to existential concerns, thus affecting change in personal meaning and other personality variables. For the first year student, this critical incident might be an unexpected, academic midterm result. Academic success is often one of the few sources of meaning that a freshman has been able to retain from their familiar, previous high school environment. Unfortunately, many students find themselves performing at a level much lower than expected in light of the unfamiliar demands of post-secondary study.

When a student receives unexpected academic feedback, how do they process this outcome? Will students externalize results in order to maintain their sense of self? On the other hand, will the student's control beliefs remain unchanged, potentially at the expense

of his or her self-concept? How will meaning and control beliefs change throughout this process? This study will explore these existential shifts by examining the individual's beliefs about sense of control and dimensions of self before and after receiving midterm results. Then, one month later, the variables will be re-examined in a longitudinal approach to understand the permanency of the shifts. As an overarching theory to the study, a model of counselling by which to understand the student's experience related to the studied variables is proposed.

CHAPTER 2: LITERATURE REVIEW

The questions posed in the introduction concern a student's internal reaction to a critical incident. Locus of control, personal meaning, and self-concept are all constructs which describe a portion of an individual's internal process. The literature for each of these constructs and their relationships to each other are reviewed in the following section. This leads into a proposed theoretical framework by which to understand these constructs and the student's experience of the academic critical incident. Attribution research will be discussed first as a basis for this study's questions about an individual's sense of control and dimensions of self.

Attribution, Self-Serving Bias and Consistency Theory

Attribution research examines how one uses information to arrive at causal explanations of events. Heider (1958) proposed that people's need to predict outcomes and control their environments or others provides important motivation to engage in causal analyses, noting that the need to anticipate what will happen to oneself and to others is most effectively done by understanding causes of behaviour. Fiske & Taylor (1991) see a person as a social perceiver or "naïve scientist" who typically sifts through relevant information and arrives at useful conclusions to their questions of "what causes things to occur, and why things happen as they do" (p. 21).

How people explain the world around them is important not only for a sense of control and predictability, but also as a basis for understanding behaviour, cognitions, and feelings. Higgins and Kruglanski (1996) write, "disconfirmation of expectancies will generally produce initial negative affect" (p. 227) which triggers attributional processing to understand the inconsistent information. This, in turn, will lead to more accurate

expectations that “help us to maximize rewards and minimize punishments” to “allow the choice of actions that will maximally benefit the organism” (p. 228).

Heider’s (1958) foundational research proposed a holistic, contextual view of attribution, incorporating perceptions of oneself, others, and objects or events involved as all being key considerations in the attribution process. For example, understanding one’s reaction to a blind date involves your perception of your date, the context of your date, the manner in which the perceiver experienced the date (as a couple or within a bigger group), the perceivers own characteristics and preconceptions of his or her date’s behaviour, and awareness of how the perceiver is being perceived. Important also to Heider was the question of where, among these contextual aspects, did responsibility (or the locus of causality) for an action lie – in the person, in the environment, or both?

The various theories that make up attribution research analyze, from different perspectives, the processes involved in explaining causes of a myriad of human phenomena- attraction, achievement, depression, and suffering, to name but a few.

Weiner’s (1979, 1986) attribution theory looks more specifically at motivation and achievement behaviour. Wong and Weiner (1981) suggested that the need to understand one’s actions is enhanced when underlying motives are not readily apparent, as in achievement situations yielding unexpected results. Weiner (1986) notes, “an attributional theory of motivation begins with a completed event, an outcome. If that outcome is unexpected, important, and/or involves nonattainment of a desired goal, then a causal search is likely to be immediately undertaken” (p. 79). He goes on to explain that the results of this search are affected by historical information and communication from others. In the context of achievement, causal factors most often invoked are those of

ability, effort, task, and luck (or lack thereof). In looking at achievement outcomes of success and failure, the aforementioned causes can be understood in light of three dimensions – namely stability, locus, and controllability. Fiske and Taylor (1991) summarize these dimensions in stating,

> The stability dimension indicated whether the cause will change or not and is strongly associated with subsequent expectations of success or failure. The locus dimension concerns whether an individual attributes performance to internal or external factors and is thought to be strongly tied to particular affective or emotional changes. The controllability dimension relates to whether or not a person has control over the outcome . . . They then make a causal attribution for that outcome, which leads to more specific emotional responses. (p. 61-62)

Another vein of attribution research hypothesizes that populations with a similar demographic will make unique attributions, significantly different from another homogenous population (Lupfer, Brock, & DePaola, 1992; Lupfer, DePaola, Brock, & Clement, 1994). These researchers observe that the role of religious attributions – concepts of divine intervention invoked to explain causality – have been neglected in attribution research. It follows that if attributions are influenced by characteristics and context of the social perceiver (Weiner, 1986), then religious attributions, stemming from one's developed, religious beliefs, may be invoked by some populations (Spilka, Shaver, & Kirkpatrick, 1985). Though Lupfer et al. (1992, 1994) found that secular traits and situational factors were cited to explain about 90% of the vignette behaviours and outcomes, results showed that religious attributions are more often invoked when the attributor is religious or when the behaviour to be explained evokes religious values.

Attribution research, as mentioned above, seeks to understand the processes by which people explain the world around them by logically investigating information according to causal rules and guidelines. However, attribution research has also observed that the social perceiver does not always follow these rules. Perhaps the most recognizable "error" in the attribution process is that people tend to make attributions according to a "self-serving bias." In other words, people attribute successes to their own abilities while attributing failures to influences outside themselves, in light of evidence or "rules" to the contrary. Intuitively, this bias stems from the one's need to protect one's ego – one feels better about oneself if responsible for success and distanced from failure, yet the expression of the self-serving bias "may be influenced by such factors as public scrutiny of the outcome of the actor's behaviour, ambiguity of the outcome, or competing motives such as the desire to appear modest"(Fiske & Taylor, 1991, p. 78-80).

In addition to invoking attributions to protect one's ego, research has found also that attributions can also take the form of a "consistency" response whereby an individual attempts to maintain agreement in their attitudes and beliefs – in order to retain control and predictability over one's interpretation of events around them - at the expense of their affective state (Heider, 1958). In an achievement context, for example, a person will not externalize a failure (i.e. invoking the self-serving bias) but will maintain their perceptions about their ability even if this spawns a negative emotional experience (Shrauger, 1975).

Locus of Control

Locus of control, a construct related to attribution, examines people's control beliefs–to what extent they perceive they are in control or not in control of what happens

to them. Rotter (1966), seeking to understand how reinforcements alter behaviour, originally proposed that reinforcement following an event would be understood by people with an external locus of control as deriving from luck, chance, or fate. Those with an internal locus of control will view these reinforcements as being dependent on their own abilities, effort, or behaviour. Grounded in social learning theory, these conclusions were spawned from the observation that for behaviour change to occur, the reinforcement must be of value to the person. Thus, as Marks (1998) explains,

> Individuals with an internal locus of control experience reinforcements of value as more meaningful or influential to them because they believe that they have control over reinforcements; to increase or decrease the reinforcement, they change their behaviour. On the other hand, individuals with an external locus of control are less likely to change their behaviour because they do not believe that changing their behaviour would have an effect on the reinforcements. (p. 252)

Though literature often uses attribution and locus of control as synonymous constructs, attribution research looks at the conditions and processes of how people assign causality while locus of control research assumes that individual differences among perceivers influences attribution, representing a "chronic way of explaining one's own successes, failures, or other experiences when environmental conditions do not provide any other explanation" (Fiske & Taylor, 1991, p. 72).

A person's locus of control style influences what type of causal attribution one will make concerning a specific event. Whether a cause is internal or external is an important distinction and dimension in attribution theory (Heider, 1958; Rotter, 1966). People can make very different attributions depending on what they believe about an

event and about themselves. Shapiro, Schwartz, and Astin (1996) suggest that one's beliefs about the extent of control they have regarding what happens to them is a core element in their understanding of how they live in the world. When failing a test, for example, most people experience the need to attribute it to ability or effort (influenced, Rotter posits, by their internal locus of control) or to task, luck, or chance (influenced by their external locus of control). The construct of locus of control has been researched and expanded to help explain behaviour across a wide variety of disciplines and environments, including mental health and education (Lefcourt, 1982; Rotter, 1990). In response to Rotter's (1975) suggestion that locus of control scales needed to be developed for domain specific areas, Trice (1985) proposed the Academic Locus of Control Scale (ALOC) to look at control beliefs in academic and achievement contexts. This same scale is used in the present study.

Extending the "self-serving bias" into the locus of control realm would seem to suggest that people have a more internal locus of control when they are successful and a more external locus when they experience failure, in order to maintain cognitive and/or emotional stability. It is proposed that people maintain stability in their life by invoking a convenient explanatory paradigm. Two questions stem from this self-serving phenomenon found both in attribution and locus of control research. First, is this stability seeking so instantaneous that people are scarcely aware of the self-serving, explanatory decision-making that is happening countless times every day? Alternatively, are people measurably affected by this "lag-time" in those situations where they must switch attributions or locus of control to maintain stability? Second, does the self-serving

assumption incorporate the complexity and differences among individuals–namely, do all people follow a self-serving bias in explaining events and perceived control?

Though it would be difficult to empirically rule out the reality of people's self-serving bias in many areas of social psychology, it seems obvious that there is an understudied population that would not fit into this theoretical framework. Applying the self-serving bias to the general population neglects the possibility of people invoking a consistency response - retaining their causal and control beliefs at the expense of their affective state. The present study seeks to understand this subgroup that may invoke this "consistency" response rather than a self-serving bias. Locus of control, as good as it may be in grouping people as either "internal" or "external," cannot possibly account for all influential factors involved in one's making sense of themselves and the world around them. The self-serving bias phenomenon in attribution theory seems to discount the fact that people react to events around them in light of their personal meaning and self-concept. Thus, it is important to extend the present study to examine these two dimensions of self.

Personal Meaning

Personal meaning is defined as "making sense, order, or coherence out of one's existence" and "having a purpose and striving toward a goal or goals" (Reker, Peacock, & Wong, 1987, p. 44). Wong (1997) further defines it "an individually constructed and culturally based cognitive system, which influences the pursuit of activities and life goals" (p. 87). A person creates meanings from their values and life themes, which can be categorized into seven sources: achievement, relationships, religion, self-transcendence,

self-acceptance, intimacy, and fair treatment. They interpret and evaluate life experiences according to these sources, attempting to integrate them into a self-concept (Wong).

The need for meaning and the sources from which it is derived adjust as one grows older. Several researchers (Baum & Stewart, 1990; Prager, 1996) assert that the need for meaning increases with age, inferring from their results that sources become more internal or philosophical for the elderly. These same researchers have found that young adults find meaning in some similar sources to the elderly, such as relationships. In general, though, young adults look forward to goals, achievement and potentials, while the elderly look back and find meaning in what they have accomplished (Prager, 1996; Reker, Peacock, & Wong, 1987). Across the lifespan, then, there is a shift from what Prager calls "instrumental values" to an "inner directedness" (p. 121). Thus, the freshman student often finds meaning from instrumental values, specifically academic achievement.

A person's sense of meaning is believed to be generally stable, only undergoing gradual transformations across the life span, as values and life themes change (Prager, 1996; Wong, 1997). However, Wong and McDonald (2001) have recently theorized that sexual abuse survivor's meanings in life can change dramatically as a result of a critical incident of abuse. The process of this change in meaning has not been empirically investigated, though.

What constitutes a critical incident? Flanagan (1954), having developed a technique for examining critical incidents, states,

> By an incident is meant any observable human activity that is sufficiently complete in itself to permit inferences and predictions to be made about the

> person performing the act. To be critical, an incident must occur in a situation where the purpose or intent of the act seems fairly clear to the observer and where its consequences are sufficiently definite to leave little doubt concerning its effects. (p. 327)

A critical incident may include any incident that dramatically challenges the meaning one has in life. Depending on one's source of meaning, that incident may be of a relational, physical, or academic nature. An incident of sexual abuse may be considered a physical or relational incident. A study of men who lost a friend or partner to AIDS-related causes showed significant change in meaning after such an incident for men whose meaning was derived from relational and physical sources (Bower, Kemeny, Taylor, & Fahey, 1998). Likewise, an academic critical incident may affect change in meaning for a student whose personal meaning is derived from achievement sources.

For many first year undergraduates, meaning is placed in academic success, their current life theme. Many have moved from their family of origin to attend university, starting a new theme of independence. Fry (1998) suggests that for these adolescents "meaning grows out of breaking from the complete dependency on significant others such as parents and peers, and moving toward greater individualism and self-definition" (p. 102). Additionally, they must continue the process of replacing childhood meanings and goals with adult ones. Moving from meaning to meaning is not simply incremental. It is a process including growth, decline, and new interpretations-often an accelerated process in adolescence. Childhood meanings and goals fade rapidly, often without new meanings or goals readily available to replace them. This can lead to depression and loss of identity (Fry, 1998). Thus, for first year students, their personal meaning may be

questioned and altered in the face of an unexpected academic failure, potentially resulting in depression.

Meaning seeking is deeply rooted in human nature, dependent on what a person thinks and does, specifically "who the person is" including personal characteristics such as creativity, intelligence, and inquisitiveness. These characteristics are a part of a person's self-concept. Since personal meanings become integrated into a person's self-concept, self-concept may also change as a result of a critical incident (Wong, 1997).

Self-Concept

The research is replete with studies on self-concept, although there is a tendency to proceed without an operationalized definition. Everyone seems to "know what it is," but approach research from differing theoretical frameworks, which is problematic for arriving at a common definition. From a broad perspective, self-concept can be approached from a uni-dimensional or multi-dimensional perspective. Byrne (1996) points out that there is a "wealth of evidence that substantiates the multidimensional nature of self-concept" (p. 8). Based on this, this study will define self-concept as global and multi-dimensional, incorporating the beliefs, feelings, and memories a person has of oneself. It is related to the behaviours, traits, characteristics, abilities and roles that a person considers representative of oneself (Byrne, 1996; Campbell, Assanand, & De Paula, 2000).

Most recently, the use of Marsh/Shavelson's (Byrne, 1996) hierarchical model has been supported by substantial construct validity research. The model is based on the assumption that self-concept contains several facets–namely, academic, social, emotional, and physical. The social, emotional, and physical facets can be lumped into a category

called non-academic self-concept. While the academic and non-academic facets are inter-correlated, they can be interpreted as separate constructs. Thus, academic self-concept can be measured separately using the Self Description Questionnaire III (SDQ-III; Marsh, 1989), which has been validated by substantial research (Byrne). Specific to this research with university students, academic self-concept will be examined.

Self-concept includes an evaluative component termed self-esteem. Self-esteem is an enduring and affective sense of personal value based on self-perception that affects the structure of self-concept as well as the positivity of the person's self-concept. There is a large amount of research on self-esteem in academic contexts.

Self-serving bias and self-esteem research have yielded conflicting empirical results. Many studies have found that high self-esteem persons are more likely to show self-serving biases than low self-esteem persons. Another set of studies has found the opposite pattern; another found no difference between; a final set have found that high and low self-esteem people use self-serving biases under different circumstances (Blaine & Crocker, 1993). Dodgson and Wood (1998) note that previous research has shown that failure does not affect people with high self-esteem as drastically as those with low self-esteem. People with low self-esteem accept the negative feedback more readily, have stronger negative emotional reactions, and impaired motivation and performance on subsequent tasks. People with high self-esteem are more able to cope by attributing failures to external factors and discrediting the negative feedback. They actively recall their strengths, counteracting the negative affect of the failure (i.e., compensation). Persons with low self-esteem, however, extend the negative affect into other domains of thoughts and feelings unrelated to the failure (i.e., overgeneralization). There are several

other studies that examine self-esteem in correlation to performance feedback. Unfortunately, many of these studies utilize false feedback, or feedback on experimental tasks (Blaine & Crocker, 1993; Dodgson & Wood, 1998; Goldman & Wong, 1997; McFarlin & Blascovich, 1981). No one seems to have studied the impact on self-concept after an actual performance feedback, which may produce a different impact than false feedback. This is an area in self-concept change that is therefore open for new research.

Self-esteem is a social/relational construct, essentially unrelated to academic self-concept (Marsh and Yeung, 1999). It is quite chameleon-like, presenting misinterpretation possibilities depending on the context in which it was measured (Marsh & Yeung). Thus, it is unfortunate that though the self-serving bias and performance feedback have frequently been examined in self-esteem research, it has had limited exposure in self-concept research (Blaine & Crocker, 1993).

Various researchers have been observing change in self-concept in terms of depth and certainty (Baumgardner, 1990; Campbell, 1990; Campbell et al., 1996; Garg, 1992; Kernis, Cornell, Sun, Berry, & Harlow, 1993). Campbell and colleagues have coined the term "self-concept clarity" as "the extent to which the contents of an individual's self-concept are clearly and confidently defined, internally consistent, and temporally stable" (p. 141). If a person's self-concept clarity is low, then the person's response to negative events will vary. This is the person with low self-concept. A person with low self-concept typically has neutral, uncertain, unstable, and inconsistent self-beliefs (Campbell et al.). This person’s self-concept will change regardless if the failure is unexpected or expected. A person with high self-esteem usually has stable, positive, and well-articulated self-

beliefs (Campbell et al.). This person would adhere to the self-serving bias when experiencing an unexpected failure in order to maintain their self-beliefs.

In another study, Garg (1992) measured self-concept after major life-changes in first year college students. He found that academic and family stressors are most influential on academic self-concept. Grades received in a previous semester tended to influence academic self-concept; in particular, low grades resulted in lower self-concept. The major life changes examined occurred before entry to college and measurement only occurred afterwards (Garg). Unfortunately, much of the research on stability of self-concept has been situational rather than longitudinal; the process of change of self-concept through a critical incident has not been empirically examined. Thus, the process of change in self-concept due to a critical incident is also open for study, along with study of personal meaning.

Locus of Control Links to Personal Meaning and Self-Concept

Various aspects of personal meaning and self-concept have been found to relate to locus of control. Meaning and an internal locus of control have been found to be positively correlated for adolescents (Showalter & Wagener, 2000). Wong and Weiner (1981) introduced the concept of "existential attribution", demonstrating that while people seek out the external causes of undesirable events, they also seek the reason and purpose for their own behaviour. Wong (1998) further defines existential attribution as "a reason-based explanation based on subjective reflections and values; it represents a deeper level of processing than causal attribution"(p.275). Thus, personal meaning seems to exist alongside locus of control as a deeper level of internal processing around the same event.

Substantial research indicates that control beliefs are related to achievement-oriented behaviour and self-esteem. Emotional state, a part of self-esteem, has been shown to depend on locus of control (Jagacinski & Nicholls, 1984; cited in Turner, 1998). Wang, Kick, Fraser, and Burns (1999) suggest that self-esteem and locus of control are related in dimensions of control ideology, system blame, and self-blame, and noted that both constructs affected educational and occupational outcome variables. Several other studies have shown locus of control and self-esteem to be related (Abdallah, 1989; Crump, Hickson, & Laman, 1985). Self-esteem, however, is only one component of the multifaceted self-concept. There seems to be no research that has sought the relationship between locus of control and the more complex self-concept.

As previously mentioned, if one simply applies the "self-serving bias" model of attribution, this discounts the fact that people react to events around them in light of their personal meaning and self-concept. The fact that people often feel bad about themselves after a negative event or personal failure attests to the fact that the self-serving bias is limited in its explanatory power. The self-serving bias asserts that a student who does unexpectedly well on an exam will attribute the success to personal causes and perceive control to be internally located, while the student who does unexpectedly poor on an exam will make external attributions and perceive control as being more externally located. These assumptions deny the possibility of someone feeling less personal meaning or having a lower self-concept after a perceived failure while maintaining their previous locus of control. Weiner's (1979, 1986) model of attribution notes the relationship between feelings of pride related to ability attributions for success and the feelings of shame related to ability attributions of failure. Bell and McCallum's (1995)

findings supported Weiner's model connecting self-concept and ability attributions. Fitch (1970) noted the same contradictory hypotheses in the area of "self theory," noting that people both enhance their self-esteem (self-serving bias) and perceive events as consistent with their self-esteem (consistency theory). Fitch hypothesized that low self-esteem people would fall into one of these two theoretical frameworks when attributing causality to hypothetical task results. Results indicated that there was some evidence for both the self-serving bias and the consistency theory, noting that those with high self-esteem tended to attribute feedback internally while those with low self-esteem tended to internalize both success and failure.

Specific studies have examined attribution, locus of control, academic self-concept, and academic performance with results that shed light on consistency theory. Anazonwu (1995) found that students who made ability or effort attributions and had higher internal control scores performed better than those who had task or luck attributions. One unconfirmed hypothesis of interest is that those with an internal locus did not perform better in the course than external locus scorers. This may be because of the 40% of the sample who failed the course, a significant number would not have reported luck or task attributions and an external locus but would have reported an internal locus even after many received a failing grade. Cassidy (2000) hypothesized that proficiency in a research methods course would be positively correlated with an internal locus of control. Results confirmed this hypothesis yet also suggested that academic self-efficacy and academic locus of control were not directly predictive of academic achievement. Such results may be explained by the fact that some people will retain an

internal locus of control even when explaining poor academic performance, even at the expense of their self-concept, adhering to the consistency theory.

A Theory of Counselling

Virginia Satir's (Satir, Banmen, Gerber, & Gomori, 1991) theory may provide a framework within which to understand how the processes of consistency theory and self-serving bias, and the constructs personal meaning, self-concept and locus of control relate. Satir's iceberg metaphor is a conceptual structure for the person as shown in Figure 1. It depicts behaviour and survival stances above the surface of the water. This part of a person's experience is visible to others (Morrison & Ferris, 2002). A larger portion of the person exists below the surface of the water. Feelings, perceptions, expectations, yearnings, and the spirit and essence of the person are levels progressing deeper under the surface. According to Satir and colleagues, the essence of the person does not change, nor do yearnings. Yearnings include longings for closeness, wholeness, intimacy, freedom, excitement, and creativity, which can be summed up as longing "to love oneself, to love others, and to be loved by others" (p. 151). However, certain yearnings may be emphasized at different stages during a lifetime, particularly if they were or were not satisfied when growing up. Yearnings are universal and the levels of the iceberg above are affected by the yearnings. Perceptions are "beliefs, attitudes, values, or pictures."

Insert Figure 1 here

Just as an iceberg is a three-dimensional object, Satir et al. (1991) theorized that a person's internal experience is three-dimensional. The components of the internal experience are interactive and systemic. If feelings, perceptions, or expectations change,

other feelings, perceptions, or expectations may be affected (Banmen, 2002). For example, a change in perception of a situation may also produce change in other perceptions or feelings. This change may be immediate or delayed, depending on the use of survival stances to maintain the status quo (Satir et al.).

People use survival stances under stress or threat to their basic yearnings, particularly to maintain familiarity within their system (Satir et al., 1991). This is similar to the consistency theory examined above. Satir and her colleagues proposed four stances based on three aspects of an interaction within an individual's experience under stress, reflected as three equal pieces of a pie: self, other, and context (see Figure 2). The interaction is not only communication between two or more people (i.e. self, and other), it also includes the setting or context. Thus, in an interaction, a person will experience self, the context of a situation, and make contact with others. When a person uses any of these stances he or she is emphasizing either one or two of the pieces of the pie and counting out another piece of the pie (Innes, 2002).

Insert Figure 2 here

Satir et. al. (1991) described the survival stances as "placating", "blaming", "super-reasonable", and "irrelevant". When a person uses the placating stance, they are discounting their "self" part of the pie, disregarding their worth and handing power to someone else. They honour others and the context. The blaming stance is characterized by discounting others, counting only self and context. Being super-reasonable overlooks self and others, and considers only the context; and irrelevant is overlooking all parts of the pie. Lastly, Satir et. al. (1991) describe congruence as a person balancing the 3 pieces of the pie: "choosing to be ourselves, to relate to and contact others, and to connect with

people directly" (p. 66). Working towards congruence is a main focus of the Satir theory of counselling. It seems that this reflects a balance of the self-serving bias and consistency theory. This, though, is beyond the considerations of this particular study.

To extend this theory to personal meaning and self-concept, these constructs are similar to expectations, perceptions, and feelings. Satir et al. (1991) define perceptions as one's concept of self and the world, which interact with one's feelings within the person's multi-dimensional internal iceberg. This is similar to the definition of self-concept used in this study. Satir and her colleagues also recognize that perceptions are values and beliefs that affect one's experience of the world, which reflect the definition of personal meaning used in this study.

Locus of control is also applicable within the Satir model. An external locus of control may be conceptualized as a similar process to the placating stance, whereby the person is counting their self out, or emphasizing context and others. A person using the super-reasonable stance may also have an external locus of control, since they emphasize context (external to their self). An internal locus of control may be conceptualized as emphasizing oneself, similar to the blaming stance. Thus, the survival stances of the Satir model are effective parallels to the constructs of personal meaning, locus of control, and self-concept.

There are additional ideas within the Satir theory that apply to this study. The Satir theory holds a goal of increasing self-esteem, one of the components of self-concept (Satir, Banmen, Gerber, & Gomori, 1991). A metaphor of a mandala is used to represent the self. It involves eight facets of self (physical, intellectual, emotional, sensual,

interactional, nutritional, contextual, and spiritual) which are similar to the facets of self-concept used in this study (Innes, 2002; Marsh, 1989).

Innes (2002) states that a persons' level of self-esteem is most evident during periods of crisis and that those with high self-esteem could adapt more easily. Satir believed that this was due to a person balancing the pieces of the pie. Innes also recognizes that when a person experiences something dissimilar, they may question the old responses (Innes, 2002). Change then occurs in how the person responds. A critical incident, or a period of crisis, produces change in the person's self-concept.

The Satir model recognizes an organic process of change. It is a "natural, ongoing process that enhances the growth and development of the organism and its relationships to the environment" (Innes, 2002, p. 42). This change will only be present in a nurturing, congruent context, characterized by hopefulness, acceptance, openness, and recognition of potential. Most important to realize, this environment exists without the relationships of dominance and subordination. Innes (2002) refers to this as a hierarchical system. Insightfully, he also points out that it is impossible to eliminate the traditional, elitist industrial components of society within which we live (Innes). Thus, there will always be a struggle between the organic (i.e. congruence) and hierarchical (i.e. survival stances). This struggle potentially contributes to the use of the self-serving bias and consistency responses by the 1st year university student. The change in environment that they are negotiating may produce the necessity for use of the survival stances. As the semester proceeds, the student may adjust to develop a congruent response. This would be reflected in a change of descriptive constructs such as personal meaning, self-concept,

and locus of control. Thus the Satir model provides an overarching theory from which to apply and relate the constructs of this study.

Research Question

The present study seeks to answer the question, "How do people process an academic critical incident in terms of control beliefs and dimensions of self?" The research reviewed above suggests that people apply both the self-serving bias and the consistency theory to explain unexpected, academic results. Satir's theory implies that people will use a survival stance to cope with a critical incident such as an unexpected result. The theory developed out of the family system's approach to therapy (Banmen, 2002; Innes, 2002). Thus, as the Satir model applies to the study constructs, a general system's perspective can also be applied to this research question.

The question, approached from a system's perspective, suggests that a critical incident acts as a stimulus or impulse input to the individual's personality system. This is similar to a closed-loop control system as depicted in Figure 3. Depending on the magnitude, an incident will hypothetically create a large or small oscillation in the system, after which it gradually returns to a steady state. The steady state may be a new level of personal meaning, locus of control, or self-concept. During the state of oscillation, the individual is potentially using a survival stance. If the incident is of large enough magnitude, the system will continue oscillating, never returning to a steady state without further input. An example of a highly critical incident that, in isolation, might result in oscillations instead of steady state is that of sexual abuse. This may be akin to the irrelevant survival stance. For the person using this stance, return to a steady state of personal meaning, for example, may require intervention (e.g., counselling).

In this study, a critical incident disrupting the personality system is hypothesized to be unexpected academic feedback, in particular. The unfamiliar university context may also create change in the personality system as a general source. Unexpected midterm results or adjusting to new academic or social expectations may not be of the same magnitude as a sexual abuse critical incident, but are hypothesized to create some oscillations in an individual's personality system before returning to relatively steady, though potentially different, state. Other inputs often act as neutralizing inputs to the system and can be from external or internal sources. In addition, each of the variables may contribute to the other as stabilizing inputs.

Insert Figure 3 here

Thus, it is expected that personal meaning, self-concept, and academic locus of control will be affected by a critical incident similar to a closed-loop control system with internal feedback. Internal feedback serves to stabilize these variables across time. For the freshman student affected by the critical incident, it is hypothesized that stability will be re-established by the third (follow-up) measurement, though potentially at a new level (see Figure 4) as people generally attempt to maintain a sense of stability in their lives.

Insert Figure 4 here

Using a pre-test measure as a baseline, it is anticipated that participants' academic locus of control, personal meaning, and self-concept will have changed at the post-test (after midterm exams) measure. This change will be affected by the participants' expectation of their results, and will depend on whether the self-serving bias or a "consistency" approach was invoked to reconcile an unexpected academic outcome.

Similarly, the change will differ for participants' reported success or failure, and will depend on whether they internalize or externalize that outcome.

It is anticipated that those who experienced an "unexpected success" will move in one of the two following directions:

1. At the post-test measure, participants' academic locus of control (ALOC) scores will change toward a more internal orientation. Personal meaning and self-concept will remain stable, confirming the "self-serving bias" theory. However, Rotter (1966) suggests that locus of control is stable over the long-term. Thus it is anticipated that the ALOC scores will return to a slightly more internal level than pre-test at the follow-up measure.

2. At the post-test measure, participants' ALOC scores will remain stable. Personal meaning and self-concept scores will increase, confirming the "consistency" theory.

It is anticipated that those who experienced an "unexpected failure" will move in one of the two following directions:

1. At the post-test measure, participants' ALOC scores will change towards a more external orientation. Personal meaning and self-concept scores will remain stable, confirming the "self-serving bias" theory. At the follow-up measure, ALOC scores will return to a slightly more external level than pre-test.

2. At the post-test measure, participants' ALOC scores will not change while a decrease in their personal meaning and self-concept scores will be seen, thus confirming the "consistency" theory. These levels will return to a slightly lower level than pre-test at the follow-up measure.

The independent variables of “expectedness,” and “outcome,” create four groups of participants. Calculated change in ALOC creates subgroups, that is change towards more external, more internal, or remaining constant. For each of the subgroups multivariate ANOVAs are conducted on the change in dependent variables of personal meaning and self-concept between pre-test and post-test measures. Using the independent variables of “expectedness,” “outcome,” and “time,” ANOVAs with repeated measures are conducted on each dependent variable to examine the group differences between those who reported “unexpected success,” “expected success,” “unexpected failure,” or “expected failure” over time.

CHAPTER 3: METHODS

Participants

One hundred and sixty eight first-year undergraduate students at Trinity Western University, a Canadian Christian liberal arts college, participated in the baseline phase of the study. A participant coding system was used to maintain confidentiality throughout the length of the study. In addition to the dependent measures an informed consent form (see Appendix A), and a questionnaire assessing demographic information was completed (see Appendix B).

Thirty-five men and 133 women participated in the post-test assessment. Five questionnaires were removed because the participants failed to provide complete information. Participants were from various cultural/ethnic backgrounds, with the majority being Caucasian (90%) followed by Asian (6%), Black (1%), and Hispanic (1%). Because questionnaires were distributed at a Christian liberal arts institution, the majority of participants were Protestant (88%) followed by Catholic (4%), Buddhist (1%), and Other (4%). The majority of participants were from two-parent families (88%), followed by two-parent step-families (4%), one-parent families (4%), and foster parent families (1%). Participants came from a wide variety of family incomes. There were 18% with family incomes over $100,000 per year, 14% with incomes from $75,000 to $99,999 per year, 31% with incomes from $50,000 to $74,999 per year, 20% with incomes from $25,000 to $49,999, and 9% with family incomes less than $24,999 per year. Eight percent of participants did not report their families' level of income. There was a wide range of participant grade point averages (GPA) reported. Ten percent of participants had a GPA of 4.0+, 47% had a GPA of 3.5 to 3.99, 24% had a GPA of 3.0 to 3.49, 11% had a

GPA of 2.5 to 2.99, 4% had a GPA of 2.0 to 2.49, and 4% did not report a GPA. Participants reported a variety of majors, with education, psychology, nursing, and no declared major comprising the majority.

Participants were grouped according to self-report questions in the post-test battery regarding the extent they perceived their midterm exam results to be a success or failure (i.e., outcome), and the extent results were expected or unexpected (i.e., expectation). From the ratings for outcome and expectation, four groups were formed: unexpected success ($\underline{n}_{post}$ = 14, $\underline{n}_{f}$ = 11), expected success ($\underline{n}_{post}$ = 71, $\underline{n}_{f}$ = 53), unexpected failure ($\underline{n}_{post}$ = 15, $\underline{n}_{f}$ = 9), and expected failure ($\underline{n}_{post}$ = 20, $\underline{n}_{f}$ = 11). (The symbol $\underline{n}_{post}$ refers to the cell size for this group at the post-test measure; $\underline{n}_{f}$ refers to the cell size at the follow-up measure.) Note that the group defining questions were not available at the time of the pre-test measure, so cell sizes are not calculated for that observation.

Change in the dependent measures was calculated for each group, according to outcome and expectation. Subgroups were created based on whether ALOC change (i.e. ?ALOC) towards more external, more internal, or remained constant. Twelve groups were formed: unexpected success external ?ALOC ($\underline{n}$ = 1), unexpected failure external ?ALOC ($\underline{n}$ = 3), expected success external ?ALOC ($\underline{n}$ = 22), expected failure external ?ALOC ($\underline{n}$ = 3), unexpected success internal ?ALOC ($\underline{n}$ = 9), unexpected failure internal ?ALOC ($\underline{n}$ = 8), expected success internal ?ALOC ($\underline{n}$ = 33), expected failure internal ?ALOC ($\underline{n}$ = 13), unexpected success constant ?ALOC ($\underline{n}$ = 4), unexpected failure constant ?ALOC ($\underline{n}$ = 4), expected success constant ?ALOC ($\underline{n}$ = 16), and expected failure constant ?ALOC ($\underline{n}$ = 4).

From the pre-test to the post-test, there was an attrition rate of 26% (44 participants). From the post-test to the follow-up assessment, there was an additional 31% attrition rate (39 participants). Attrition in both study phases was distributed evenly across all demographic variables. Participants who dropped out between the post-test and follow-up were about 20% more likely to have reported an academic "failure" than an academic "success" at post-test when compared to those who remained in the study.

Procedure

Permission was obtained from the professors for a variety of first-year undergraduate courses to advertise and distribute the questionnaires at pre-test and both post-test measurements. At the time, the purpose of the research and a request for participation was made in conjunction with announcing raffle prizes. Participants who returned the questionnaires were entered into raffle draws after each measurement. The pre-test raffle prizes were two $20 restaurant gift certificates. The post-test prize was $50 and the follow-up prize was $100. Questionnaires were returned by the participants to a confidential mailbox or collected by the researchers at each class one week later, as preferred by the participant. Nine independent classes of undergraduate students participated in the surveys.

All participants were asked to fill out consent forms (see Appendix A). It was emphasized that participation was voluntary and confidential, and that they could withdraw at any time. Students of five classes were offered additional incentives in course marks to participate in the surveys. Participants took the questionnaires home to fill out at their leisure, and returned the questionnaires within a week.

The same battery of questionnaires was administered three times throughout the fall of the 2001 academic semester. The first administration took place before the third week of September (preceding midterm exams), the second in late October (immediately after midterm exams), and the third in mid-November. A different number code was assigned to each participant in order to ensure confidentiality. Number codes were entered into draws after each measure for prizes.

The demographics questionnaire (see Appendix B) was attached to the pre-test package only, because the participants' later response packages were tracked by numerical coding. Another brief questionnaire (see Appendix F) was attached to the post-test package to determine the extent to which the individual "cares" about the result, expected the result, and felt the result was a success. This questionnaire included the following items "To what extent do you care about your performance?"; "Were your midterm results for this course expected/unexpected?"; and "Do you consider your results a success/failure?" These items were presented on an 8-point scale of a Likert format. A questionnaire with these same questions was attached to the follow-up package (see Appendix G) with an additional question to determine other stressors that may have occurred for them during the term.

Measures

In this study, three constructs were measured–locus of control, personal meaning, and self-concept.

Academic Locus of Control (ALOC)

The ALOC Scale (see Appendix C), developed by Trice (1985), is a 28-item, true-false scale designed to assess locus of control in an academic context. This scale was

developed to tap into beliefs about personal control in academically relevant areas with respect to achievement motivation and academic performance (e.g. “College grades most often reflect the effort you put into classes”; “Studying every day is important”; “Doing work on time is always important to me”; “I can easily be talked out of studying”).

Scoring. To enhance the consistency of response format among instruments for the participants, the true-false response format was expanded to an 8-point rating format that has no “middle” option. Scores on the scale are derived by summing the responses of the externally answered items and the reverse scores of the internally answered items (as outlined in Appendix C), thus arriving at a score expressing the degree of externality where higher scores reflect a higher external academic locus of control. Scores could range from 28 to 224.

Reliability. Initial test-retest reliability of the ALOC was 0.92 while internal consistency was found to be 0.70. Though Ogden and Trice (1986) found lesser psychometric values for the scale (0.79 and 0.68, respectively), it was used in the present study for its specific focus on academic locus of control. Internal consistency reliability coefficients for each scale across time for this study are included in Table 1.

Insert Table 1 here

Personal Meaning Profile (PMP)

The PMP, developed by Wong (1998), has its theoretical underpinnings in the life and work of Viktor Frankl (1985) and his meaning-centered counselling approach termed “logotherapy.” This 57-item scale measures “people’s perceptions of personal meaning in their lives” (p. 137). The scale assesses seven potential sources of personal

meaning; Achievement, Relationships, Religion, Self-Transcendence, Self-Acceptance, Intimacy, and Fair Treatment.

The items of the PMP are grouped into subscales according to the seven factors (Wong, 1998). The Achievement subscale consists of 16 items that describe the person's perception of their ability to pursue their goals and how much they value this pursuit ("I take initiative"; "I value my work"). The nine Relationship subscale items gauge the more global social interactions of the person and the impact they have on others ("I am trusted by others"; "I contribute to the well-being of others"). The five Intimacy subscale determines the extent to which they have close relationships ("I have someone to share intimate feelings with"; "I have a good family life"). The Self-Acceptance subscale contains six items that measure the person's recognition of and beliefs about their limitations and sufferings ("I am at peace with myself"; "I accept my limitations"). The person's belief that life has treated them fairly ("I am treated fairly by others") is the concern of the Fair Treatment scale (four items). The nine Religion subscale items refers to the person's belief in a greater life purpose and the ability to know God ("I seek to glorify God"; "I believe that one can have a personal relationship with God"). Self-Transcendence ("I make a significant contribution to society") is a subscale (eight items) concerned with the extent to which the person gains meaning from pursuits that surpass self-interest (Gallant, 2001). Scoring of the PMP is performed by averaging the items for each subscale, as listed in Appendix D (Wong, 1998).

Reliability. The PMP has been used in a variety of studies (De Lazzari, 2001; Giesbrecht, 1997; Lang, 1994; Klaassen & McDonald, 2002; Wong, 1998), and internal consistency has been good for the total score. In the aforementioned studies, results for

subscales of the PMP show a Cronbach alpha of between 0.54 and 0.94. Three-week test-retest reliability in preliminary studies found a correlation coefficient of 0.85 (Wong, 1998).

Self-Description Questionnaire - III (SDQ-III)

This questionnaire is based on Marsh/Shavelson's (Marsh, 1989) multi-dimensional hierarchical model. This 136-item scale loads on 4 facets of self-concept: academic, social, emotional, and physical. A global self-concept score is also produced. While the academic and non-academic facets are inter-correlated, they can be interpreted as separate constructs. The SDQ-III is comprised of 13 subscales, 8 of which are non-academic, 4 are academic, and 1 measures overall global self-concept. Items are presented on an 8-point Likert scale with 1 being “Definitely False” to 8 being “Definitely True.”

The items of the SDQ-III can be grouped into subscales according to the general, academic, and non-academic factors. The general subscales include General self-concept (“I have self-respect, self-confidence, self-acceptance, positive self-feelings and a good self-concept”), and the total self-concept score. The academic factor includes Math (“I have good mathematical skills/reasoning ability”); Verbal (“I have good verbal skills/reasoning ability”); General Academic (“I am a good student in most school subjects”); and Problem solving (“I am good at problem solving/creative thinking”) subscales. The non-academic subscales include Physical Ability (“I am good at sports and physical activities”); Physical Appearance (“I am physically attractive/good looking”); Relations with Same Sex (“I have good interactions/relationships with members of the opposite sex”); Relations with Parents (“I have good

interactions/relationships with my parents"); Spiritual Values/Religion (" I am a religious/spiritual person"); Honesty/Trustworthiness ("I am an honest, reliable, trustworthy person"); and Emotional Stability ("I am an emotionally stable person").

Reliability. Internal consistency reliabilities on the subscales range from 0.76 to 0.95 with a mean alpha coefficient of 0.90 (Byrne, 1996). Test-retest reliabilities (one month apart) have been reported to be 0.87 (Marsh, Richards, & Barnes, 1986).

Validity. Concurrent validity between the non-academic subscales of the SDQ-III and the Tennessee Self Concept Scale (Fitts, 1965) was shown to be between 0.53 and 0.71 for the highest five subscales. Convergent validity coefficients between the SDQ-III academic subscales similar subscales within other inventories yielded coefficients from 0.54 to 0.86 (Byrne, 1996).

High construct validity for the SDQ-III has been established in multiple studies showing its factorial structure to be invariant across age and gender. For example, one study (Marsh, 1992; cited in Byrne, 1996) found correlations among the factors were modest, values ranging from –.06 to .36.

Scoring. Scoring for the SDQ-III can be accomplished in two ways: an SPSS scoring script included with the questionnaire package, or a hand-scoring worksheet. The scoring program for SPSS was used in this study, adjusting it to include only the recoding, computation of missing values, and subscale computations. The program script is included in Appendix E. Factor analysis was deleted because it was not required as factor subscales have been established in previous studies. SDQ-III scores are invalid if more than 7 item values are missing, so these questionnaires were removed from the study.

CHAPTER 4: RESULTS

The results section reports preliminary analyses of internal consistency, group differences on the dependent measures, and, finally, supplementary analyses of the dependent measures at follow-up.

Preliminary Analyses

Internal consistency coefficients, means, and standard deviations were calculated for the dependent coercion measures and reported in Table 1. Spearman's Rho correlation coefficients were calculated between the dependent measures, as reported in Table 2. The dependent measures were significantly correlated to each other at $p < .05$.

Insert Table 2 here

Reliability of Dependent Measures

The internal consistency of the ALOC was calculated for each time of measurement. The coefficients are included in Table 1. These α values indicate an acceptable degree of internal consistency to combine all items in the ALOC questionnaire to form a single composite score. The composite will be labelled ALOC in all subsequent analyses.

The internal consistency of the Personal Meaning Profile (Wong, 1998) scores was calculated. Table 1 shows α coefficients as calculated for PMP subscales. The coefficients on PMP subscales ranged from 0.48 to 0.92, tending to meet acceptable standards. Although not uniformly high, these levels of inter-item reliability, combined with the findings of past research, were deemed sufficient to warrant using the scores of the seven PMP subscales.

The internal consistency for the Self Description Questionnaire III (Marsh, 1989) subscales was calculated as shown in Table 1. The α coefficients on SDQ-III subscales ranged from 0.57 to 0.96. Again, although not uniformly high, these levels of inter-item reliability, combined with past research on the SDQ questionnaire, were deemed sufficient to use the SDQ subscales.

Analysis of Hypotheses

Change in the dependent measures was calculated for each group and subgroups were calculated for change in ALOC (i.e. ?ALOC). Within each subgroup, 3 (? ALOC: more external, more internal, or constant) x 2 (Time: pre-test vs. post-test) ANOVAs were used to examine the change in personal meaning and self-concept. Contrary to the hypotheses, no significant effects were found.

Group Differences on Dependent Measures

Group differences were calculated for the dependent measures. In an attempt to balance the cost of making a Type I error versus the possibility of making a Type II error, a correction method developed by Benjamini and Hochberg was used to determine an acceptable significance level (Keselman, Cribbie & Holland, 1998). Keselman and colleagues state that the False Discovery Rate (FDR) correction is applicable for exploratory studies that have greater than eight comparisons. The present study fits this requirement, thus validating the use of the FDR correction. The results are reported for the main analyses of the dependent variables utilizing a corrected significance level of $p < .016$. Results reported for supplementary analyses of subscales utilize a conventional significance level of $p < .05$.

Academic Locus of Control

A 2 (Outcome: success vs. failure) x 2 (Expectedness: expected vs. not expected) x 2 (Time: pre-test vs. post-test) ANOVA with repeated measures (or a "mixed design") on Time yielded a main effect ($\eta^2 = .124$) for Time, F (1, 116) = 16.48, $p < .016$. As hypothesized, from pre-test to post-test, ALOC for the failure groups became significantly more external. Contrary to hypotheses, ALOC for the success groups also became significantly more external. Mean scores for ALOC are included in Table 3.

Insert Table 3 here

Personal Meaning Profile

Not surprisingly, PMP total scores tended to change to higher personal meaning for both success groups. Contrary to hypotheses, PMP scores also tended to increase for the failure groups.

A 2 (Outcome: success vs. failure) x 2 (Expectedness: expected vs. not expected) x 2 (Time: pre-test vs. post-test) ANOVA with repeated measures on Time was calculated. A main effect ($\eta^2 = .049$) for Time found that for the overall sample, PMP total scores increased from pre-test to post-test, F (1, 116) = 5.98, $p < .016$. The PMP Religion, Self-Transcendence, and Self-Acceptance subscales also yielded main effects ($\eta^2 = .070$, .059, and .043, respectively) for Time, F (1, 116) = 8.70, $p < .05$, F (1, 116) = 7.23, $p < .05$, and F (1, 116) = 5.20, $p < .05$, respectively. The scores for PMP Religion significantly increased from pre-test to post-test. The Self-Transcendence and Self-Acceptance subscales also significantly increased from pre-test to post-test. Mean scores are included in Table 3.

For the PMP Intimacy subscale, a three-way interaction between Outcome, Expectedness, and Time, F (1, 116) = 3.92, p = .05, was also found (η^2 = .033). For the "unexpected success" and "expected failure" groups, PMP Intimacy increased. For the "unexpected failure" and "expected success" groups, a decrease in PMP Intimacy was found (see Figure 5). Mean scores are included in Table 3.

Self Description Questionnaire III

A 2 (Outcome: success vs. failure) x 2 (Expectedness: expected vs. not expected) x 2 (Time: pre-test vs. post-test) ANOVA with repeated measures on Time was calculated. For the SDQ-III Math subscale, a two-way interaction (η^2 = .047) between Time and Outcome, F (1, 116) = 5.67, p < .05, was found. As shown in Figure 6, Math self-concept increased for both "unexpected success" and "expected success" groups. For "unexpected failure" and "expected failure" groups, Math self-concept decreased. That is, expectation did not tend to affect the Math self-concept changes. In addition, for the SDQ-III Academic subscale a three-way interaction (η^2 = .037) between Outcome, Expectedness, and Time, F (1, 116) = 4.45, p < .05, was found. As shown in Figure 7, the SDQ Academic scores for the "unexpected success" and "expected failure" groups significantly decreased. For the "unexpected failure" and "expected success" groups SDQ Academic scores increased. Mean scores are included in Table 3.

Supplementary Analyses

The following analyses look at the dependent measures between the post-test and follow-up measures.

Personal Meaning Profile

Comparing Time 2 (post-test) to Time 3 (follow-up), a 2 (Outcome: success vs. failure) x 2 (Expectedness: expected vs. not expected) x 2 (Time: post-test vs. follow-up) ANOVA with repeated measures on Time was calculated. The PMP Intimacy subscale, of which all groups' scores increased yielded a main effect ($\eta^2 = .603$) for Time, F (1, 84) = 121.3, $p < .001$. The PMP Religion subscale (see Figure 8) showed a two-way interaction ($\eta^2 = .066$) between Time and Expectedness, F (1, 84) = 5.62, $p < .05$. For the PMP Achievement subscale (see Figure 9), a three-way interaction ($\eta^2 = .072$) between Time, Expectedness, and Outcome, F (1, 84) = 6.25, $p < .05$, was found. A three-way interaction ($\eta^2 = .054$) also was found for the PMP Religion subscale (see Figure 10), F (1, 84) = 4.60, $p < .05$. Mean scores for these interactions are included in Table 3.

Self-Description Questionnaire

For the time 2 (post-test) to time 3 (follow-up) analyses, a 2 (Outcome: success vs. failure) x 2 (Expectedness: expected vs. not expected) x 2 (Time: post-test vs. follow-up) ANOVA with repeated measures on Time was calculated. A main effect was found for the SDQ Parents ($\eta^2 = .063$) subscale, F (1, 84) = 5.35, $p < .05$, yielding scores that decreased significantly.

For SDQ General Esteem subscale, a two-way interaction between Time and Outcome was found ($\eta^2 = .056$), F (1, 84) = 4.77, $p < .05$, shown in Figure 11. The "success" group showed an increase while the "failure" group showed a decrease. A two-way interaction between Time and Outcome was found for SDQ Opposite Sex ($\eta^2 = .056$) subscale, F (1, 84) = 4.77, $p < .05$. For the "success" groups, SDQ Opposite Sex increased, while for the "failure" groups it decreased (see Figure 12). A two-way

interaction between Time and Expectedness for the SDQ Problem Solving ($\eta^2 = .081$) subscale, F (1, 84) = 7.47, $p < .05$ was found (see Figure 13), yielding a decrease for the "unexpected" groups, and an increase for the "expected" groups.

Religion Subscale. A main effect was found for the SDQ Religion ($\eta^2 = .067$) subscale, F(1, 84) = 5.71, $p < .05$, yielding scores that decreased for all groups. A two-way interaction between Time and Expectedness was also found for the SDQ Religion ($\eta^2 = .082$) subscale, F (1, 84) = 7.09, $p < .05$. As shown in Figure 14, both the "success" group and the "failure" group showed a decrease in religious self-concept. In addition, a three-way interaction between Time, Outcome, and Expectedness was found for the SDQ Religion ($\eta^2 = .120$) subscale, F (1, 84) = 16.93, $p < .05$. Figure 15 depicts the SDQ Religion subscale scores, which increased for the "unexpected success" and "expected failure" groups and decreased for the "unexpected failure" and "expected success" groups. Mean scores are included in Table 3.

In summary, no significant changes were found in the dependent measures for the analyses of the hypotheses, yet, analysis of group differences found several significant changes. From pre-test to post-test, several group differences were significant. Main effects were found for Academic Locus of Control, PMP Total, and the PMP Subscales Religion, Self-Transcendence, and Self-Acceptance increased for all groups. Also, three-way interactions for PMP Intimacy and the SDQ Academic and Math subscales were found. Pre-test to Post-test analyses found significant main effects in PMP Intimacy and SDQ Parents subscales. Significant two-way interactions for PMP Religion, SDQ General Esteem, Opposite Sex, Problem solving and Religion subscales were found and three-way interactions for PMP Religion and SDQ Religion were found.

CHAPTER 5: DISCUSSION

In this study, first year university students reported an increase of external academic locus of control scores and overall personal meaning scores regardless of whether they perceived their midterm exam results as successes or failures. The results also indicate that students reported higher meaning in the religious, self-transcendent aspects of their stage in life than meaning in academics. For students experiencing an academic success or failure, the results show that religious and academic aspects of self-concept are affected throughout the term.

In light of these results, the discussion section focuses on several areas. First, a discussion of how students reconciled the academic cognitive dissonance between expectation and outcome starts off the section. Second, the significant change of both academic locus of control and personal meaning scores over the academic semester is examined. Third, impact of the specific university environment from which the sample was taken is deliberated. Finally, an exploration of the limitations of this study and suggestions for areas of further research completes the section.

Expectation of Outcome Versus Actual Outcome

The results at the post-test measure seem to suggest that the actual academic outcome was not as important as the expected academic outcome. Perry (1991) notes that internally perceived control may be just as important in academic development at the college level as it is at elementary or secondary levels. Institutional focus often turns from learning to competition and success. Post-test results suggest that students have already shifted aspects of their personal meaning to compensate for their expected

academic outcome. Feldman and Newcomb (1969) discuss students' downward revision of academic expectations to fit their new environment, noting also,

> The unrealistic aspect of these expectations is the failure of students to account adequately for the shift in the distribution of rewards and talent in the new environment. While new students probably 'know' that they are entering an environment that will present them with greater competition than they have had before, downward adjustment in expectations and aspirations are not sufficiently large. (p. 85)

The participants appeared to prepare themselves for impending failure, moving away from this academic threat to self. This supports the hypothesis that some groups would invoke the self-serving bias to reconcile results that did not correspond with expectations. Specifically, it appears that students who felt, after taking midterm exams, that their results would not meet their expectations proactively changed their expectations so that their beliefs concerning their academic self-concept would not have to change after receiving the results. It is self-serving to decrease one's meaning in academic self-concept if one feels that, in the future, this aspect of personal meaning will be challenged with results different than one's expectations. The bias may be invoked before receiving the results as a defence against the threat of the unexpected. For the first year university student, this can be understood as a threat because of its potential to disrupt one's sense of identity. Reker et al. (1987) and Prager (1996) both note that meaning is often tied to goals, achievement, and potential for the young adult.

Again, the direction in which these groups are changing suggests that academic self-concept may be a function of the expectation of outcome and not the outcome itself.

For example, the Academic self-concept subscale scores decreased for the expected failure group. They appear to adjust their self-concept to other areas of self, based on their expectation of failure. In the short term (before the post-test), the change in self-concept does not significantly gravitate toward one or more specific subscales. In the longer term (at the follow-up measure), a significant increase in religious self-concept scores for the expected failure group was found. When faced with an expected failure, students moved self-concept scores toward the Religion subscale and away from the Academic self-concept subscale.

This suggestion can be understood in light of Spilka, Shaver, and Kirkpatrick's (1985) "psychological availability hypothesis" which states, in the context of secular and religious attributions, that people choose to explain situations or behaviour depending on: (1) characteristics of the attributor, (2) the attributor's context, (3) the characteristics of the event, and (4) the context within which the event being explained takes place. It follows that a movement toward a religious attribution (or, by extension, religious and transcendent meaning) would be an attractive, available explanatory system for the personal or academic upheaval, for the first year student in a university environment providing venues for personal and spiritual growth. In a liberal arts institution open to religious aspects of student experience, it follows that religious self-concept could conceivably be the realm in which students would move toward in the short term. Fowler (1981) observes,

> By virtue of the college experience, travel or of being moved from one community to another, many persons undergo the relativization of their inherited worldviews and value systems. They come face to face with the relativity of their

> perspectives and those of others to their life experience. But they fail to interrupt their reliance on external sources of authority–and may even strengthen their reliance upon them–in order to cope with this relativity. (p. 179)

Though these observations specifically deal with world view relativity, the point of interest is that these transitional developmental periods (or critical incidents) can lead persons to rely more on external authority–religion and self-transcendence, for example, in the present study.

This movement away from a perceived threat before that threat becomes confirmed can also be understood in light of bio-psychological theories of behaviour. Carlson, Buskist, Enzle & Heth (2000), in a discussion of operant conditioning, note, "Negative reinforcement teaches organisms to make responses that terminate aversive stimuli. These responses can make a stimulus cease . . . or the organism can simply run away. In either case, psychologists call the behaviour an escape response (149)". As well, the physiological "flight or fight" response to potentially dangerous physical stimuli can be used as a parallel in which to understand the "expected failure" participants' intrapersonal "flight" from Academic self-concept to other sources of self. In the event of a perceived threat to self, the "flight" moves one away from the present danger and toward the nearest viable refuge–namely, that of religious meaning in a religious liberal arts university.

At the follow-up measure, however, the expected failure group shows a significant increase in PMP Achievement subscale scores. This may give support to the hypothesis that after invoking the self-serving bias and moving meaning from internal to external aspects in the face of an academic threat, students, in the longer term, would

begin to reconcile these results and move meaning back into internal realms such as Academic and Achievement, supporting also the invoking of the self-serving bias. These results suggest that self-concept, for the first year university student, may be shifting more qualitatively than quantitatively. For research in self-concept, it is important to determine whether measured levels of self-concept fluctuate or, rather, shift by situation among various aspects of self-concept. The results of the present study lend support for the latter perspective. Conversely, for those who expected success and invoked the self-serving bias, it follows that they would shift meaning from external sources toward a more internal source (Academic self-concept, for example). Results confirmed this for the "expected success" group–at the post-test measure, the expectation of success moved their self-concept to be more academically focused.

Change in Personal Meaning and Academic Locus of Control

In the literature, both personal meaning and academic locus of control are believed to be stable constructs (Prager, 1996; Rotter, 1966; Trice, 1986; Wong, 1997). Recently, however, Wong and McDonald (2001) propose that personal meaning may be changed in the short term by a critical incident. The results confirm Wong and McDonald's proposition, as both scores of the personal meaning and academic locus of control instruments fluctuated from the pre-test to post-test. Academic locus of control scores for all groups changed towards a more external orientation, from the pre-test to post-test. Personal meaning scores increased for all groups over this time period. The results suggest that the personal meaning and academic locus of control can be, at least in the short-term, unstable constructs. Between pre-test and the follow-up measure,

however, personal meaning scores did not substantially change, confirming the longer-term stability shown in previous research.

Though significant change was hypothesized for all dependent variables, the direction of change was contrary to hypotheses for the group reporting "unexpected failure." For this group, it was hypothesized that personal meaning and self-concept scores would decrease and locus of control scores would increase to a more external orientation. Contrary to the hypotheses, the group displayed an increase of personal meaning scores overall, as well as for each of the subscales. From time 1 to time 2, academic locus of control scores became significantly more external for all groups, but was not significantly affected by the independent variables, suggesting that this short-term instability may be attributable to factors other than those in the immediate, academic realm. It seems these first year students are amidst a significant life transition, though not necessarily dependent on or initiated by unfamiliar academic demands, important enough to effect their personal meaning and beliefs.

Impact of the University Environment

Feldman and Newcomb (1969), in their classic work, The Impact of College on Students, note,

> The conditions for campus-wide impacts appear to have been most frequently provided in small, residential, four-year colleges. These conditions probably include relative homogeneity of both faculty and student body together with opportunity for continuing interaction, not exclusively formal, among students and between students and faculty [author's emphasis]... The 'traditional' small, private colleges, on the other hand, are apt to have established images of their

> own . . . such institutions tend to attract both students and faculty who are familiar with the image and favourably disposed to it. (p. 331)

In a similar vein, Astin (1993) suggests that at least four sources of influence need to be taken into account to estimate a college or university's student impact: (1) pre-enrolment characteristics of students, (2) institutional emphases, (3) student's academic experiences, and (4) student's social or non-academic experiences. It would follow that a university with an emphasis on extra-curricular, leadership, and personal growth opportunities would attract students with like values and, in turn, affirm these students' sense of personal meaning. Results showing a significant increase in personal meaning between time 1 and 2 but no change in personal meaning from time 2 to 3 suggest, again, that students' first weeks on campus are having an important impact.

In the present study, the varied opportunities within the university setting may help to explain this instability of personal meaning and academic locus of control in the short term. The significant increase of participants' personal meaning across all groups suggests that this construct is somewhat unstable in the short-term. Given the aforementioned relationship between university characteristics and influence on students, it is conceivable that the significant increases in the PMP subscales of Religion, Self-Transcendence, and Self-Acceptance–all subscales that correspond closely with a university environment open to spiritual and personal growth–were attributable to the university's extra-curricular emphases.

The significant increase in Self-Acceptance scores may also be a result of a transition to adulthood involving leaving parental connection and familiar social interactions and moving to a setting requiring more autonomy (Holahan, Valentiner, &

Moos, 1994; Zirkel & Cantor, 1990). Many developmental theories recognize this life transition as requiring the development of a sense of identity (Erikson, 1968; Zirkel & Cantor). In general, life transitions often cause people to become introspective because old strategies and skills become obsolete. Various new personal strategies and skills are required to navigate the new life stage (Zirkel & Cantor). Pascarella, Edison, Hagedorn, Nora, and Terezini (1996), in reviewing research on youth transitioning into adulthood, found that a major goal of liberal colleges and universities was to enhance independence of thought and action, thus encouraging young adults to place meaning in self-acceptance.

Faith development theorist James Fowler (1981) discusses, in his book Stages of Faith, how, "Frequently the experience of 'leaving home'–emotionally or physically, or both – precipitates the kind of examination of self, background, and life-guiding values that gives rise to [faith] stage transition at this point" (p. 173). In light of such research, it is quite possible that participants in the present study experience some sort of spiritual/self-transcendent personal examination in their first few weeks in the university environment.

Academic locus of control scores for all groups significantly increased, that is, higher externality. This seems contradictory to the research of Pascarella, Edison, Hagedorn, Nora & Terezini (1996), who found that "students make statistically significant gains in the direction of internality during college" (p. 732). However, they also found that their "overall sample showed a small decrease in internal locus of attribution for academic success" (p. 743). The academic focus of the present study is actually consistent with the additional findings of Pascarella and colleagues. They

proposed that the increase in externality might be a function of college transition difficulties "leading students to feel less in control of their academic success that they had originally expected" (p. 743). Thus, academic locus of control seems to be independent of a student's general locus of control, and would thus be affected differently in the university environment.

The specific location of the present study may also explain the significant external change in the academic locus of control for all groups. At the university at which the sample was found, students possibly feel open to consider divine agency in forging different academic beliefs in a novel academic setting. For example, the Religion, and Self-Transcendence subscales of the PMP (Wong, 1998) saw significant increases (p = .004, and .008, respectively) for all groups, regardless of academic outcome or expectation. As previously mentioned, it is plausible that these subscales might have simply reflected the heightened religious aspects of the university the sample was drawn from. The Self-Acceptance subscale scores also saw a significant increase at p = .024. This increase in Self-Acceptance scores may again be explained by the transitory nature of the participants' lives in first year university. Feldman and Newcomb (1969) note,

> In general terms, the freshman in college is a novice in an unfamiliar social organization, and is therefore confronted with the values, norms, and role structures of a new social system and various new subsystems. Such an experience usually involves desocialization. . . as well as socialization . . . The uncertainties of this learning period often are compounded by the frustrations involved in moving from a system where one is an established member–the

> former high school and home community–to a system where one is only a novice. (p. 89)

Many students have moved from a place of connection with parents and other familiar social interactions into a setting requiring more autonomy, thus shifting their source of personal meaning from relationships to intrapersonal characteristics such as self-acceptance. Feldman and Newcomb (1969) also note,

> He [the student] may meet challenges to attitudes and values that served adequately enough in high school . . . In addition to the necessity of adjusting to being away from home and adapting to new living arrangements . . . there are the more general pressures to become independent. Some freshmen may feel a new and disturbing sense of anonymity. Such frustrations are often compounded by threats to the student's self-image with respect to his intellectual and social abilities. (p. 89-90)

Before the study it was proposed that change in self-concept would follow personal meaning. In this study, however, short-term self-concept changes did not mirror the movement in personal meaning from relationships to self-acceptance. Results between the first two measures showed no significant increase in self-concept. It seems that students derive more meaning from accepting self, yet not necessarily experiencing more self-acceptance at that time. Later at the follow-up measure, though, the change in self-concept has occurred. Thus, change in personal meaning is mirrored by self-concept after some period of time (i.e. approximately one month in the present study).

Connecting to Satir Theory

The delayed mirroring discovered in the results may be due to temporary use of the survival stances conceptualized by Satir et al. (1991). The participants may use survival stances to maintain familiarity. The results of the study reflect the interactions between different levels of the person's iceberg. For example, while overall personal meaning increased, the emphasis (as reflected by the subscales) shifted from relationships to spiritual meaning areas. As their perceptions, or values and beliefs (i.e. meaning) were changed because of the environment and/or critical incident, their perceptions of self and the world (i.e. self-concept) also changed, after a period of time. The delayed mirroring here may be explained by the use of survival stances by the students. However, the concept of self that works for them before no longer works in this new university environment. This then becomes a time for concept of self to transform into a new status quo. The survival stances helps them maintain a sense of stability in their world, until their organic propensity to growth produces a new concept of self.

The organic propensity for growth was seen in specific subscales. For example, the PMP Self-Acceptance subscale scores increased, however it did not seem to be mirrored by any significant change in self-concept. Perhaps this change of beliefs about self resulted in a diffuse adjustment across feelings, perceptions, and yearnings, and yielding no significant results in any subscale.

Some results do not reflect the effect of internal change in the levels of the personal iceberg, but a change in context or others (see Figure 9). For example, change in Math self-concept was perhaps more attributable to the external event of the academic success or failure, rather than an increase in personal meaning. There was a significant

interaction between Math self-concept and the success/failure variable. For those who indicated a "success," math self-concept increased while decreasing for the "failure" group ($p < .05$). The significantly increased external LOC for these groups also show this tendency to need external reinforcement. Thus, the context and others parts of the pie affected the internal change of self, reflecting the use of the placating survival stance. It seems that a large group of students at this university use the placating stance under stress. Not surprisingly, the Satir conceptual framework is applicable to many of the results found with this group of first year university students.

Limitations of the Present Study and Areas of Future Research

Advantages of studying first year university students throughout their first post-secondary semester are many. As the results indicate, the first year student is dealing with many factors in their transition from high school to university–social, spiritual, academic expectations, to name a few. To begin to tap into the intrapersonal processes of these transitions is an arduous task.

Attrition

As previously mentioned, one limitation of the longitudinal approach this study takes is the attrition rate across the three measurement periods. Though rates are not inordinately high or over-represented in a specific demographic, the reality is often that lack of power increases the possibility of missing significant results. Coupled with this limitation is the finding that those who report an expected or unexpected academic failure are more likely not to complete the entire study. Herein lies another difficulty–namely, that of the subjectivity involved with relatively little self-report information being translated into the independent variables. Though a Likert scale was employed where

participants could report the extent to which their result was expected/unexpected or a success/failure, more information may have been necessary to ensure that participants were effectively grouped. It would be interesting and applicable for future research to compare both the outcome and expectedness variables with actual midterm marks. A concrete measurement such as midterm percentage may shed light on whether or not the self-serving bias is invoked on the basis of the self-report independent variables.

Procedure

Another limitation to the study design is the questionnaires were administered in the same order for each measurement period. Counterbalancing of the questionnaires is typically the response to the concern of priming in within-subjects pre-test post-test designs. Given that personal meaning and locus of control are relatively stable constructs (Prager, 1996; Rotter, 1966; Wong & McDonald, 2001), the PMP and ALOC are deemed unlikely to be primed by the other questionnaires. The SDQ-III questionnaire may have been primed by the PMP or ALOC. Previous studies do not address this possibility.

Environmental Influences

Another limitation may be that changes in dependent measures as a result of academic outcomes are overshadowed by changes in dependent measures influenced by the campus environment. Though results suggest that a critical incident is being experienced, to say that this is attributable to academic achievement is difficult to determine in light of the seemingly strong influence of the university's extra-curricular emphases. Denscombe (2001) concluded that the student's retrospective perceptions of a "critical incident", as opposed to those of the researcher, will determine if it is indeed critical. In this study the student's perceptions were measured but the results were

insignificant. Thus no conclusion can be made whether this academic incident was critical or not. Pascarella and Terenzini (1991) concluded from a synthesis of 20 years of research on college impact, "it is likely that no single academic or non-academic experience will be an important determinant of impact for all students" (p. 752). To better understand the processes of young adult development in the academic context, further research may focus on more specific aspects of the transition (i.e., measuring academic locus of control three times throughout the semester and correlating this information with midterm and final course grades), rather than attempting to examine the broader developmental scope of these life changes.

Implications for Counselling Psychology

For the university counselling agency, the findings lend continued support to the reality that the university transition, for many students, is much more than understanding how study habits and academic expectations may be markedly different from their high school experience. Many spiritual and social influences are disrupting and shaping students' perceptions of self, their spirituality, and their academic performance.

The finding that students who report an academic "failure" are less likely to complete the study also has implications to campus counselling groups. An extension of these results would suggest that those who need the most assistance in their university transition perhaps are not accessing campus resources, or being overlooked in current student service attempts to gauge, usually by way of self-report surveys, student well-being. The possibility should be considered that when research participants are given monetary and/or course credit incentives, it will attract those motivated by achievement,

thereby, not adequately examining the personally, academically, or affectively "unmotivated"–often the very group that research is attempting to better understand.

Many of the students that are accessing campus resources and participating in the research appear to use the placating survival stance. This has implications for resources provided to these students. They would tend to be eager to please, perhaps even self-effacing, thus researchers, professors, and counsellors must be careful of imposing their assumptions and beliefs on these students, for placators will tend to put aside their own beliefs in their eagerness to please. One goal of student resources may be to assist them in increasing self-esteem. On the positive side, these students have a strength of serving others that can be encouraged further.

Finally, in the discussion, a process began to integrate social psychology, developmental psychology, and counselling psychology theories into a framework for understanding university students' experience. The Satir model may be explored further as a conceptual framework for counselling, research and other services. Though results of this study show that students invoke the self-serving bias to reconcile unexpected academic outcomes, the significant changes in freshman student's beliefs about self do not seem to be solely attributable to academic transition. Human beings are multi-faceted, with complex internal processes. The changes in this study may be best understood using a multi-faceted, interdisciplinary approach, incorporating social, developmental, and counselling psychology. Certainly, the adage that "the only constant thing in life is change" has been confirmed for this study's freshman student.

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Table 1

Cronbach α Coefficients for Dependent Measures with Subscales

Subscale	Time of Observation		
	Pre-test	Post-test	Follow up
Academic Locus of Control	.73	.74	.77
Personal Meaning Profile	.93	.91	.95
Achievement	.89	.88	.92
Relationship	.87	.89	.90
Religion	.82	.80	.80
Self-Transcendence	.75	.48	.84
Self Acceptance	.68	.74	.79
Intimacy	.76	.78	.74
Fair Treatment	.51	.63	.69
Self Description Questionnaire III	.95	.93	.96
Physical Ability	.96	.96	.96
Physical Appearance	.87	.80	.88
Opposite Sex Peer Relations	.91	.92	.93
Same Sex Peer Relations	.84	.81	.88
Parent Relations	.86	.92	.88
Honesty/Trustworthiness	.74	.57	.83
Spiritual Values / Religion	.90	.90	.86
Emotional Stability	.90	.78	.91
General Esteem	.94	.95	.92

(table continues)

Table 1 (cont)

Subscale	Time		
	Pre-test	Post-test	Follow up
Maths	.95	.96	.93
Verbal	.84	.83	.84
Academic	.88	.84	.90
Problem Solving	.79	.81	.76

Table 2

Intercorrelation Among Dependent Measures

Measure	1	2	3	4	5	6
Pre-test						
1. ALOC	-	-.18 *	-.45 **	.79 **	-.22 *	-.47 **
2. PMP		-	.49 **	-.099	.76 **	.44 **
3. SDQ-III			-	-.32 **	.40 **	.93 **
Post-test						
4. ALOC				-	-.26 **	-.39 **
5. PMP					-	.44 **
6. SDQ-III						-

Note. ALOC = Academic Locus of Control; PMP = Personal Meaning Profile; SDQ-III = Self-Description Questionnaire III

$^{*}p < .05$ $^{**}p < .01$ $^{***}p < .001$.

Table 3

Mean Scores and Standard Deviations of Dependent Variables

Subscale		Time							
		Pre-test				Post-test			
		Expected		Not expected		Expected		Not expected	
		M	SD	M	SD	M	SD	M	SD
Academic Locus of Control	Fail	102.90***	16.04	106.67***	11.53	108.40***	16.95	112.03***	13.91
	Success	102.87***	16.19	105.07***	13.91	105.73***	16.10	109.57***	13.24
Personal Meaning									
Personal Meaning	Fail	5.42***	0.56	5.63***	0.56	5.57***	0.59	5.74***	0.56
	Success	5.59***	0.52	5.48***	0.71	5.72***	0.48	5.51***	0.52
Self-Transcendence	Fail	5.44*	0.84	5.47*	0.76	5.51*	0.66	5.71*	0.72
	Success	5.54*	0.70	5.43*	0.76	5.67*	0.70	5.98*	1.92
Self-Acceptance	Fail	4.70*	0.99	5.37*	0.65	4.84*	0.74	5.43*	0.73
	Success	5.09*	0.85	4.89*	0.82	5.34*	0.80	5.17*	0.59
Religion	Fail	5.97*	0.87	6.18*	0.58	6.08*	0.77	6.34*	0.55
	Success	6.22*	0.59	6.12*	0.64	6.32*	0.55	6.21*	0.66

(table continues)

Table 3 (cont.)

Subscale		Time							
		Pre-test				Post-test			
		Expected		Not expected		Expected		Not expected	
		M	SD	M	SD	M	SD	M	SD
Intimacy	Fail	5.31***	1.39	5.25***	1.58	5.20***	1.47	5.33***	1.28
	Success	5.28***	1.26	5.18***	1.41	5.47***	1.19	4.88***	1.33
Self Concept									
Academic	Fail	6.09*	0.68	5.76*	1.02	5.85*	0.61	5.76*	1.10
	Success	5.75*	0.78	5.53*	0.94	5.80*	0.73	5.43*	0.92
Math	Fail	4.31*	1.95	3.99*	1.77	4.18*	1.85	3.76*	1.75
	Success	4.01*	1.63	3.66*	1.56	4.06*	1.71	3.90*	1.51

* $p < .05$ ** $p < .01$ *** $p < .001$.

Table 4

Pre-test Mean Scores and Standard Deviations for Religion

	Religion									
	No response N=6		Protestant N =149		Catholic N=6		Buddhist N=1		Other N=7	
	M	SD	M	SD	M	SD	M	SD	M	SD
Academic Locus of Control	112.00	26.25	104.88	16.35	99.83	21.97	105.00	-	110.29	16.39
Personal Meaning	5.42	0.63	5.54	0.55	5.61	0.76	5.42	-	5.41	0.46
Achievement	5.34	0.80	5.44	0.65	5.65	0.85	5.25	-	5.71	0.44
Relationships	5.65	0.84	5.70	0.72	5.94	1.04	5.22	-	5.60	0.57
Religion	5.94	0.69	6.18	0.60	5.48	1.10	5.89	-	5.13	1.71
Self-transcendence	5.52	0.78	5.46	0.70	5.52	1.10	6.25	-	5.19	0.73
Self-acceptance	5.39	0.68	5.03	0.89	4.89	0.66	5.17	-	5.42	0.75
Intimacy	4.43	1.35	5.28	1.34	6.07	0.59	4.40	-	4.83	1.05
Fair Treatment	5.13	0.90	5.35	0.78	5.83	0.89	5.50	-	5.63	0.75
Self-Concept Total	5.69	0.73	5.68	0.53	5.55	0.89	5.36	-	5.61	0.60
Physical ability	5.22	1.61	5.39	1.61	5.42	2.36	5.70	-	6.04	0.55

(table continues)

	Religion									
	No response N=6		Protestant N =149		Catholic N=6		Buddhist N=1		Other N=7	
	M	SD	M	SD	M	SD	M	SD	M	SD
Physical appearance	5.22	0.93	5.18	1.06	5.13	1.16	4.90	-	5.68	1.00
Opposite Sex Peer Relations	5.27	1.65	5.36	1.29	6.60	0.38	5.70	-	5.01	1.80
Same Sex Peer Relations	6.08	0.93	5.91	0.97	6.38	1.02	5.90	-	5.59	0.52
Parent Relations	6.32	1.06	6.30	1.05	6.22	1.46	4.20	-	6.69	0.35
Honesty/Trustworthiness	6.79	0.73	6.47	0.68	5.94	1.42	6.17	-	6.47	0.80
Spiritual Values/Religion	7.00	0.83	7.21	0.78	5.69	0.71	6.75	-	5.89	1.84
Emotional Stability	5.55	0.85	5.50	1.21	5.50	0.54	5.10	-	5.49	1.12
General esteem	6.10	0.84	6.14	1.07	5.98	0.91	6.08	-	5.95	1.17
Maths	4.50	1.70	4.02	1.70	3.95	2.08	4.40	-	4.40	0.98
Verbal	5.52	1.09	5.62	1.03	4.72	1.48	4.60	-	5.54	1.18
Academic	5.50	0.90	5.75	0.89	5.47	1.91	4.90	-	5.23	1.40
Problem solving	4.95	1.21	4.95	0.81	5.11	1.27	5.30	-	4.91	1.11

Table 5

Post-test and Follow-up Mean Scores and Standard Deviations for Religion

	Time															
	Post-test								Follow-up							
	Unknown N=6		Protestant N =107		Catholic N=4		Other N=3		Unknown N=6		Protestant N =107		Catholic N=4		Other N=3	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Academic Locus of Control	114.50	11.95	107.21	15.60	100.75	20.61	109.33	15.04	120.00	14.79	108.28	14.86	140.00	-	123.00	-
Personal Meaning	5.40	0.60	5.70	0.50	5.75	0.51	5.22	0.64	5.14	0.61	5.72	0.50	5.05	-	5.30	-
Achievement	5.22	0.77	5.58	0.52	6.00	0.63	5.29	0.71	5.00	0.89	5.64	0.54	5.75	-	5.36	-
Relationships	5.55	0.95	5.79	0.69	6.08	0.47	5.33	1.18	5.58	0.72	5.85	0.68	5.44	-	5.67	-
Religion	6.00	0.80	6.34	0.56	5.36	0.60	5.74	0.53	5.97	0.74	6.38	0.45	4.55	-	6.22	-
Self-transcendence	5.46	0.82	5.71	0.93	5.91	0.73	5.15	1.03	5.28	0.81	5.69	0.68	5.13	-	5.75	-
Self-acceptance	5.61	0.81	5.26	0.78	5.00	0.41	4.50	0.76	5.04	0.98	5.21	0.79	4.17	-	4.17	-
Intimacy	4.45	1.22	5.40	1.25	5.60	0.82	4.87	1.36	5.06	1.36	6.90	1.45	4.25	-	4.25	-
Fair Treatment	5.17	0.77	5.51	0.70	5.81	0.55	5.21	0.51	4.13	1.01	5.33	0.73	5.75	-	5.25	-
Self-Concept Total	5.78	0.54	5.66	0.53	5.96	0.46	5.90	0.49	5.68	0.65	5.65	0.56	5.22	-	5.67	-
Physical ability	5.08	1.58	5.24	1.56	6.03	1.87	6.27	0.74	5.40	1.36	5.16	1.53	6.20	-	6.70	-

(table continues)

	Time															
	Post-test								Follow-up							
	Unknown N=6		Protestant N =107		Catholic N=4		Other N=3		Unknown N=6		Protestant N =107		Catholic N=4		Other N=3	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Physical appearance	5.24	1.05	5.22	1.13	5.68	1.21	5.63	0.75	5.48	0.61	5.18	0.97	4.90	-	5.80	-
Opposite Sex Peer Relations	5.27	1.15	5.25	1.30	6.90	0.48	6.03	0.46	5.08	1.20	5.19	1.37	5.20	-	6.60	-
Same Sex Peer Relations	6.43	0.55	5.83	0.93	6.73	0.49	6.13	0.81	5.78	1.36	5.93	0.95	5.90	-	6.30	-
Parent Relations	6.68	1.02	6.37	1.12	7.05	0.41	6.33	1.42	6.40	0.85	6.41	0.96	5.90	-	4.60	-
Honesty/Trustworthiness	6.71	0.55	6.56	0.58	6.69	0.22	6.50	0.51	6.58	0.85	6.56	0.75	5.50	-	6.67	-
Spiritual Values/Religion	7.08	0.72	7.26	0.69	5.08	0.64	7.00	0.52	6.90	0.76	7.26	0.69	5.67	-	7.42	-
Emotional Stability	5.70	0.86	5.59	1.25	5.38	0.41	5.47	1.46	5.40	1.36	5.63	1.09	5.20	-	4.00	-
General esteem	5.79	1.02	6.11	0.99	6.33	0.52	6.17	0.62	6.13	0.38	6.13	0.98	4.42	-	5.58	-
Maths	4.55	1.54	3.97	1.72	4.18	1.89	5.30	1.77	4.98	1.73	4.04	1.63	3.20	-	4.20	-
Verbal	5.88	0.72	5.63	0.92	5.91	0.86	5.43	0.93	5.18	0.39	5.53	1.02	5.10	-	4.60	-
Academic	5.82	0.51	5.75	0.83	6.00	0.39	5.83	0.76	5.55	0.57	5.67	0.93	5.00	-	6.10	-
Problem solving	4.92	1.08	4.80	0.84	5.51	0.93	4.87	0.31	5.00	0.67	4.79	0.76	5.70	-	5.10	-

Table 6

Mean Scores and Standard Deviations for Gender

	Time													
	Pre-test						Post-test				Follow-up			
	Unknown N =1		Male N=35		Female N=133		Male N=15		Female N=105		Male N=11		Female N=73	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Academic Locus of Control	71.00	-	111.20	15.21	103.85	16.77	114.00	15.63	106.47	15.37	115.09	15.90	108.53	15.08
Personal Meaning Total	5.46	-	5.40	0.60	5.57	0.53	5.51	0.49	5.70	0.51	5.42	0.46	5.72	0.51
Achievement	6.44	-	5.35	0.72	5.47	0.63	5.53	0.46	5.58	0.56	5.44	0.49	5.63	0.58
Relationships	5.11	-	5.53	0.86	5.75	0.68	5.50	0.81	5.82	0.69	5.51	0.67	5.89	0.66
Religion	6.56	-	5.90	0.88	6.15	0.68	6.20	0.59	6.28	0.61	5.89	0.70	6.41	0.43
Self-transcendence	5.88	-	5.28	0.75	5.51	0.70	5.45	0.73	5.72	0.94	5.42	0.65	5.70	0.68
Self-acceptance	4.00	-	5.08	0.88	5.06	0.87	5.04	0.95	5.28	0.76	5.06	0.61	5.20	0.83
Intimacy	4.20	-	4.90	1.49	5.35	1.27	4.84	1.58	5.41	1.19	6.05	1.69	6.86	1.48
Fair Treatment	2.75	-	5.43	0.94	5.37	0.71	5.58	0.77	5.48	0.69	5.32	0.54	5.27	0.81
Self-Concept Total	6.88	-	5.62	0.51			5.67	0.55	5.68	0.52	5.45	0.63	5.68	0.54

(table continues)

	Time													
	Pre-test						Post-test				Follow-up			
	Unknown N =1		Male N=35		Female N=133		Male N=15		Female N=105		Male N=11		Female N=73	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Physical Ability	7.20	-	6.20	1.30	5.19	1.61	6.11	1.64	5.16	1.51	6.43	1.09	5.02	1.48
Physical Appearance	7.40	-	5.50	0.97	5.11	1.04	5.29	0.93	5.24	1.14	5.12	0.88	5.21	0.96
Opposite Sex Peer Relations	6.90	-	5.36	1.27	5.39	1.33	5.41	1.27	5.32	1.30	5.16	1.28	5.21	1.37
Same Sex Peer Relations	6.50	-	5.65	0.97	5.98	0.95	5.62	0.93	5.94	0.91	5.50	0.87	6.00	0.95
Parent Relations	7.60	-	6.17	1.01	6.32	1.06	6.17	1.42	6.44	1.06	5.95	1.15	6.44	0.92
Honesty/Trustworthiness	6.75	-	6.10	0.80	6.55	0.67	6.33	0.62	6.60	0.55	5.84	1.20	6.66	0.60
Spiritual Values/Religion	7.08	-	6.70	1.12	7.20	0.83	6.94	0.88	7.21	0.77	6.43	1.20	7.35	0.52
Emotional Stability	4.00	-	5.47	1.22	5.52	1.15	5.35	1.15	5.61	1.22	5.43	1.00	5.62	1.11
General Esteem	7.83	-	6.15	0.91	6.11	1.08	6.01	1.08	6.12	0.95	5.76	1.08	6.15	0.94
Maths	5.30	-	4.08	1.38	4.04	1.75	4.16	1.47	4.01	1.74	3.76	1.38	4.12	1.66
Verbal	7.90	-	5.24	0.98	5.64	1.05	5.42	0.73	5.68	0.92	5.05	0.99	5.57	0.99
Academic	7.90	-	5.33	1.00	5.78	0.91	5.73	0.86	5.77	0.79	5.37	1.03	5.70	0.89
Problem Solving	7.10	-	5.17	0.77	4.88	0.85	5.20	0.85	4.78	0.84	5.03	0.60	4.78	0.77

Table 7

Pre-test Mean Scores and Standard Deviations for Ethnicity

	Ethnicity											
	Unknown N= 1		Caucasian N=153		Black N=1		Asian N=10		Hispanic N=1		Other N=3	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Academic Locus of Control	66.00	-	105.02	16.67	123.00	-	106.80	12.21	115.00	-	111.67	31.53
Personal Meaning	6.72	-	5.52	0.54	5.05	-	5.44	0.64	6.32	-	5.74	0.13
Achievement	7.00	-	5.43	0.64	5.13	-	5.51	0.67	6.56	-	5.63	0.33
Relationships	6.78	-	5.71	0.72	5.00	-	5.32	0.76	6.33	-	5.78	0.78
Religion	6.78	-	6.13	0.71	5.44	-	5.72	1.05	5.78	-	6.00	0.22
Self-transcendence	6.25	-	5.46	0.70	4.50	-	5.49	0.97	6.75	-	5.38	0.50
Self-acceptance	6.50	-	5.00	0.85	4.17	-	5.40	0.78	5.33	-	6.33	0.60
Intimacy	7.00	-	5.24	1.35	6.00	-	5.10	0.96	6.40	-	5.40	1.31
Fair Treatment	6.25	-	5.36	0.78	5.25	-	5.20	0.75	7.00	-	5.75	0.66
Self-Concept Total	6.71	-	5.69	0.54	4.97	-	5.36	0.52	6.25	-	5.20	0.07
Physical ability	7.00	-	5.43	1.62	5.30	-	4.53	1.40	6.90	-	6.27	0.57
Physical appearance	6.50	-	5.25	1.05	4.40	-	4.57	0.90	5.60	-	4.67	0.78

(table continues)

	Ethnicity											
	Unknown N= 1		Caucasian N=153		Black N=1		Asian N=10		Hispanic N=1		Other N=3	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Opposite Sex Peer Relations	5.90	-	5.37	1.34	5.60	-	5.58	0.98	7.10	-	4.90	1.65
Same Sex Peer Relations	6.90	-	5.96	0.94	5.50	-	5.35	1.05	6.60	-	5.17	0.95
Parent Relations	6.10	-	6.35	1.02	4.70	-	5.78	1.30	7.40	-	5.40	1.01
Honesty/Trustworthiness	7.25	-	6.50	0.67	5.67	-	6.02	1.08	6.83	-	5.56	0.94
Spiritual Values/Religion	7.25	-	7.16	0.88	6.08	-	6.50	1.20	5.33	-		
Emotional Stability	7.00	-	5.52	1.17	4.00	-	5.13	1.12	4.80	-	6.10	1.23
General esteem	6.92	-	6.13	1.08	4.75	-	6.04	0.65	6.25	-	6.28	0.24
Maths	6.40	-	3.99	1.67	3.40	-	4.76	1.42	6.40	-	3.50	2.26
Verbal	6.70	-	5.61	1.06	5.40	-	5.09	1.09	5.40	-	4.60	0.92
Academic	6.90	-	5.75	0.88	5.20	-	5.54	1.46	6.40	-	3.60	0.90
Problem solving	6.40	-	4.95	0.83	4.60	-	4.77	1.04	6.20	-	5.23	1.16

Table 8

Post-test and Follow-up Mean Scores and Standard Deviations for Ethnicity

	Time															
	Post-test								Follow-up							
	Caucasian N=112		Black N=1		Asian N=6		Hispanic N=1		Caucasian N=77		Black N=1		Asian N=5		Hispanic N=1	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Academic Locus of Control	107.22	15.79	122.00	-	106.50	11.59	120.00	-	108.73	15.01	120.00	-	111.40	16.43	140.00	-
Personal Meaning	5.67	0.52	5.42	-	5.64	0.55	5.89	-	5.68	0.51	5.35	-	5.78	0.61	5.05	-
Achievement	5.57	0.55	5.44	-	5.51	0.54	6.50	-	5.61	0.57	5.25	-	5.55	0.65	5.75	-
Relationships	5.79	0.70	5.22	-	5.54	0.93	6.22	-	5.85	0.67	5.44	-	5.78	0.81	5.44	-
Religion	6.28	0.60	6.00	-	6.31	0.80	5.33	-	6.37	0.45	5.89	-	6.36	0.68	4.56	-
Self-transcendence	6.70	0.93	4.75	-	5.60	0.85	6.25	-	5.68	0.67	5.13	-	5.60	0.93	5.13	-
Self-acceptance	5.23	0.78	4.83	-	5.78	0.69	4.50	-	5.15	0.78	4.50	-	5.97	0.72	4.17	-
Intimacy	5.35	1.27	6.80	-	4.93	0.85	5.20	-	6.76	1.56	7.75	-	6.90	0.38	4.25	-
Fair Treatment	5.49	0.69	5.00	-	5.58	0.85	6.25	-	5.24	0.78	5.00	-	5.80	0.67	5.75	-
Self-Concept Total	5.69	0.54	5.27	-	5.53	0.17	6.08	-	5.67	0.57	5.68	-	5.41	0.15	5.22	-
Physical ability	5.30	1.58	5.40	-	4.67	1.14	6.50	-	5.20	1.54	6.40	-	4.89	1.20	6.20	-

(table continues)

	Time															
	Post-test								Follow-up							
	Caucasian N=112		Black N=1		Asian N=6		Hispanic N=1		Caucasian N=77		Black N=1		Asian N=5		Hispanic N=1	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Physical appearance	5.25	1.14	4.90	-	5.20	0.64	5.70	-	5.23	0.96	5.30	-	4.80	0.79	4.90	-
Opposite Sex Peer Relations	5.30	1.30	6.00	-	5.48	1.23	7.00	-	5.17	1.38	6.30	-	5.38	1.18	5.20	-
Same Sex Peer Relations	5.93	0.91	5.80	-	5.37	1.08	6.10	-	5.94	0.97	6.20	-	5.80	0.86	5.90	-
Parent Relations	6.42	1.12	4.90	-	6.27	0.79	7.40	-	6.40	0.99	5.30	-	6.34	0.60	5.90	-
Honesty/Trustworthiness	6.60	0.56	6.00	-	6.03	0.51	6.57	-	6.61	0.74	6.08	-	5.87	0.51	5.50	-
Spiritual Values/Religion	7.22	0.77	6.00	-	6.94	0.64	5.25	-	7.27	0.69	6.92	-	6.88	0.68	5.67	-
Emotional Stability	5.62	1.22	4.30	-	5.03	0.79	5.40	-	5.65	1.10	4.30	-	5.10	1.11	5.20	-
General esteem	6.10	0.99	5.00	-	6.24	0.46	6.58	-	6.13	0.98	5.83	-	6.05	0.51	4.42	-
Maths	3.99	1.72	3.80	-	4.65	1.71	5.30	-	4.04	1.64	3.90	-	4.80	1.63	3.20	-
Verbal	5.66	0.89	6.10	-	5.28	1.19	5.60	-	5.55	1.01	6.10	-	4.76	0.76	5.10	-
Academic	5.76	0.80	5.00	-	5.98	0.79	6.20	-	5.68	0.92	5.40	-	5.54	0.98	5.00	-
Problem solving	4.83	0.83	5.30	-	4.70	1.32	5.50	-	4.84	0.72	5.80	-	4.07	0.77	5.70	-

Table 9

Pre-test Mean Scores and Standard Deviations for Family

	Family Type									
	One Parent N=6		Two Parent N=150		Two Parent Step N=7		Foster Parents N=1		Other N=5	
	M	SD	M	SD	M	SD	M	SD	M	SD
Academic Locus of Control	103.67	20.77	105.09	16.83	106.57	17.95	126.00	-	103.40	14.98
Personal Meaning	5.07	0.45	5.56	0.52	5.48	0.61	6.68	-	5.02	0.79
Achievement	4.96	0.48	5.47	0.62	5.54	0.60	6.63	-	5.06	1.23
Relationships	5.57	0.42	5.70	0.73	5.60	0.84	6.67	-	5.53	0.48
Religion	5.67	0.62	6.12	0.72	6.24	0.48	7.00	-	5.64	1.05
Self-transcendence	5.10	0.48	5.49	0.70	5.50	0.72	6.88	-	4.63	0.79
Self-acceptance	4.64	1.08	5.08	0.84	5.00	0.83	6.67	-	4.50	1.37
Intimacy	4.03	1.46	5.34	1.29	4.74	1.62	7.00	-	4.44	0.95
Fair Treatment	4.88	0.82	5.44	0.74	4.89	1.15	5.50	-	4.55	0.89
Self-Concept Total	5.69	0.55	5.68	0.55	5.49	0.73	5.65	-	5.41	0.36
Physical ability	4.47	1.34	5.46	1.63	5.37	1.50	4.60	-	5.30	1.16
Physical appearance	5.88	1.17	5.20	1.00	5.03	1.57	5.50	-	4.62	1.48

(table continues)

	Family Type									
	One Parent N=6		Two Parent N=150		Two Parent Step N=7		Foster Parents N=1		Other N=5	
	M	SD	M	SD	M	SD	M	SD	M	SD
Opposite Sex Peer Relations	5.72	0.55	5.38	1.33	4.77	1.78	7.00	-	5.74	0.26
Same Sex Peer Relations	5.87	1.17	5.92	0.96	5.93	0.60	5.60	-	5.86	1.35
Parent Relations	5.32	1.35	6.36	1.04	6.37	0.90	5.70	-	5.54	0.54
Honesty/Trustworthiness	6.28	1.11	6.46	0.71	6.89	0.57	6.17	-	6.18	0.46
Spiritual Values/Religion	6.78	1.08	7.11	0.92	7.32	0.43	7.25	-	6.52	1.14
Emotional Stability	5.63	1.03	5.53	1.14	5.23	1.10	7.00	-	4.40	1.71
General esteem	6.47	1.03	6.14	1.03	5.65	1.34	7.25	-	5.87	1.36
Maths	4.01	2.19	4.10	1.70	3.61	0.96	2.40	-	3.64	1.11
Verbal	5.73	0.84	5.59	1.06	5.19	1.42	5.70	-	5.52	0.89
Academic	6.34	0.42	5.69	0.97	5.40	0.90	4.80	-	6.02	0.99
Problem solving	5.47	0.24	4.95	0.88	4.60	0.67	4.50	-	5.12	0.42

Table 10

Post-test Mean Scores and Standard Deviations for Family

	Family Type									
	One Parent N=4		Two Parent N=107		Two Parent Step N=4		Foster Parents N=1		Other N=4	
	M	SD	M	SD	M	SD	M	SD	M	SD
Academic Locus of Control	114.00	23.62	107.52	14.97	100.50	23.91	121.00	-	101.50	17.25
Personal Meaning	5.52	0.93	5.67	0.49	5.73	0.41	6.61	-	5.52	0.69
Achievement	5.45	1.08	5.56	0.53	5.70	0.21	6.38	-	5.58	0.72
Relationships	5.94	0.74	5.76	0.72	6.00	0.62	6.56	-	5.78	0.59
Religion	5.92	0.79	6.28	0.59	6.47	0.47	7.00	-	5.97	1.00
Self-transcendence	5.56	1.01	5.72	0.92	5.59	0.67	6.63	-	4.97	0.99
Self-acceptance	5.58	1.31	5.22	0.74	5.13	1.15	6.50	-	5.50	0.98
Intimacy	4.00	2.08	5.39	1.19	5.25	1.38	7.00	-	5.00	1.40
Fair Treatment	5.69	0.72	5.48	0.70	5.38	0.43	6.50	-	5.50	0.84
Self-Concept Total	5.51	0.55	5.70	0.54	5.61	0.25	5.87	-	5.48	0.31
Physical ability	3.33	0.88	5.37	1.56	5.38	1.54	4.10	-	5.13	1.07
Physical appearance	5.59	1.73	5.25	1.11	5.25	0.77	4.80	-	4.80	1.26

(table continues)

	Family Type									
	One Parent N=4		Two Parent N=107		Two Parent Step N=4		Foster Parents N=1		Other N=4	
	M	SD	M	SD	M	SD	M	SD	M	SD
Opposite Sex Peer Relations	5.85	0.75	5.26	1.34	5.90	0.65	6.70	-	5.65	0.35
Same Sex Peer Relations	5.83	0.78	5.92	0.92	6.18	0.75	5.70	-	5.38	1.30
Parent Relations	5.23	1.65	6.49	1.07	6.28	1.20	5.80	-	5.50	0.76
Honesty/Trustworthiness	6.21	1.01	6.58	0.54	7.17	0.40	6.33	-	6.15	0.43
Spiritual Values/Religion	6.52	1.00	7.22	0.76	7.54	0.42	7.75	-	6.23	0.76
Emotional Stability	5.80	1.22	5.60	1.22	4.95	0.80	7.00	-	5.25	1.14
General esteem	6.54	0.75	6.10	0.98	5.69	0.80	7.08	-	6.00	1.03
Maths	3.40	1.68	4.06	1.76	3.48	0.70	5.50	-	3.95	0.75
Verbal	5.80	0.87	5.65	0.90	5.10	1.25	5.60	-	6.05	0.60
Academic	6.10	0.51	5.75	0.81	5.65	0.81	5.70	-	6.13	0.98
Problem solving	5.48	0.54	4.82	0.87	4.40	0.62	4.20	-	4.98	0.52

Table 11

Follow-up Mean Scores and Standard Deviations for Family

	Family Type							
	One Parent N=4		Two Parent N=74		Two Parent Step N=4		Other N=2	
	M	SD	M	SD	M	SD	M	SD
Academic Locus of Control	114.25	21.23	109.01	14.76	111.25	24.14	110.00	14.14
Personal Meaning	5.47	1.07	5.70	0.48	5.48	0.61	5.60	0.35
Achievement	5.42	1.37	5.62	0.53	5.61	0.39	5.44	0.27
Relationships	5.97	1.17	5.83	0.65	5.78	0.79	5.72	0.39
Religion	5.92	0.88	6.38	0.47	6.11	0.67	6.28	0.55
Self-transcendence	5.56	1.26	5.70	0.65	5.50	0.49	4.88	0.35
Self-acceptance	5.13	1.40	5.20	0.77	4.75	0.73	5.42	1.30
Intimacy	5.50	2.15	6.84	1.43	6.06	2.58	7.38	0.53
Fair Treatment	5.25	0.96	5.30	0.75	4.69	0.97	5.75	1.06
Self-Concept Total	5.44	0.60	5.66	0.57	5.62	0.44	5.56	0.17
Physical ability	3.55	0.52	5.27	1.52	5.15	1.46	6.30	0.14
Physical appearance	5.65	1.78	5.17	0.91	5.40	0.91	4.85	0.64

(table continues)

	Family Type							
	One Parent N=4		Two Parent N=74		Two Parent Step N=4		Other N=2	
	M	SD	M	SD	M	SD	M	SD
Opposite Sex Peer Relations	5.55	0.52	5.12	1.40	5.88	0.93	6.10	0.28
Same Sex Peer Relations	5.85	0.87	5.93	0.98	6.15	0.51	5.60	0.85
Parent Relations	5.45	1.44	6.45	0.91	6.35	1.31	5.70	0.57
Honesty/Trustworthiness	6.13	1.30	6.56	0.71	7.15	0.49	5.79	0.41
Spiritual Values/Religion	6.17	1.34	7.29	0.64	7.48	0.31	6.54	0.53
Emotional Stability	5.53	1.09	5.67	1.09	5.20	0.80	3.80	0.71
General esteem	5.89	1.51	6.13	0.94	5.67	1.21	6.17	0.47
Maths	3.43	1.67	4.13	1.64	3.53	1.71	4.55	0.92
Verbal	5.73	0.72	5.50	1.02	5.20	1.21	5.55	0.78
Academic	6.43	0.34	5.62	0.91	5.38	1.25	6.05	0.92
Problem solving	5.33	0.46	4.79	0.76	4.50	0.76	5.25	0.78

Figure Captions

Figure 1. The Personal Iceberg Metaphor

Satir's personal iceberg metaphor is used to portray the multiple levels of a one's inner experience. The metaphor is used in this study as an overarching framework to understand the processes of the student's reactions to the academic results.

Figure 2. Parts of An Individual's Experience

This figure depicts three equal parts of a pie: self, other, and context. Satir and her colleagues proposed four survival stances based on these three aspects of an individual's experience. The survival stances are proposed as part of the overarching framework for understanding the 1st year university student's reactions to academic results.

Figure 3. Closed-Loop Control System

This figure depicts the feedback process of closed-loop control system. In this study it is proposed that a critical incident acts as a stimulus or impulse input to the individual's personality system. The unexpected failure acts as a critical incident to the individual and results in a shift in academic locus of control, self-concept or personal meaning (as depicted in the figure). Internal feedback serves to stabilize these variables across time.

Figure 4. Critical Incident Response

This figure shows the results from a critical incident hypothesized to occur for personal meaning, locus of control and self-concept. Depending on the magnitude, an incident will create a large or small oscillation in the system, after which it gradually returns to a steady state. The steady state may be a new level of personal meaning, locus of control, or self-concept.

Figure 5. Interaction Effects for Intimacy (as a Source of Personal Meaning)

Change in intimacy as a source of personal meaning is depicted for the sample at follow-up (n_f = 84), i.e., students that participated throughout the length of the study. Interaction with outcome and expectation of outcome were significant for the Intimacy PMP subscale scores, creating four independent groups of "unexpected failure," "unexpected success," "expected failure," and "unexpected failure."

Figure 6. Interaction Effects for Math Self-Concept

Change in self-concept in math is depicted for the sample at follow-up (n_f = 84), i.e., students that participated throughout the length of the study. Interaction with outcome and expectation of outcome were significant for the Math Self-Concept subscale scores, creating four independent groups of "success" and "failure" outcome status, regardless of expectation of the outcome.

Figure 7. Interaction Effects for Academic Self-Concept

Change in academic self-concept is depicted for the sample at follow-up (n_f = 84), i.e., students that participated throughout the length of the study. Interaction with outcome and expectation of outcome were significant for the Academic Self-Concept subscale scores, creating four independent groups of "unexpected failure," "unexpected success," "expected failure," and "unexpected failure."

Figure 8. Interaction Effects for Religion (as a Source of Personal Meaning)

Change in religion as a source of personal meaning is depicted for the sample at follow-up (n_f = 84), i.e., students that participated throughout the length of the study. Interaction with expectation of outcome were significant for the Religion PMP subscale scores, creating two independent groups of "unexpected" and "expected" outcome.

Figure 9. Interaction Effects for Achievement (as a Source of Personal Meaning)

Change in achievement as a source of personal meaning is depicted for the sample at follow-up (n_f = 84), i.e., students that participated throughout the length of the study. Interaction with outcome and expectation of outcome were significant for the Achievement PMP subscale scores, creating four independent groups of "unexpected failure," "unexpected success," "expected failure," and "unexpected failure."

Figure 10. Interaction Effects for Religion (as a Source of Personal Meaning)

Change in religion as a source of personal meaning is depicted for the sample at follow-up (n_f = 84), i.e. students that participated throughout the length of the study. Interaction with outcome and expectation of outcome were significant for the Religion PMP subscale scores, creating four independent groups of "unexpected failure," "unexpected success," "expected failure," and "unexpected failure."

Figure 11. Interaction Effects for General Self-Esteem

Change in general self-esteem is depicted for the sample at follow-up (n_f = 84), i.e., students that participated throughout the length of the study. Interaction with outcome was significant for the General Self-Esteem subscale scores, creating two independent groups of "failure" and "success." Expectation of outcome did not significantly affect this subscale.

Figure 12. Interaction Effects for Self-Concept in Relationships with Opposite Sex

Change in self-concept in relationships with the opposite sex is depicted for the sample at follow-up (n_f = 84), i.e., students that participated throughout the length of the study. Interaction with outcome was significant for the Opposite Sex Self-Concept subscale scores, creating two independent groups of "failure" and "success." Expectation of outcome did not significantly affect this subscale.

Figure 13. Interaction Effects for Problem Solving Self-Concept

Change in problem solving self-concept is depicted for the sample at follow-up ($n_f = 84$), i.e., students that participated throughout the length of the study. Interaction with expectation of outcome was significant for the Problem Solving Self-Concept subscale scores, creating two independent groups of “unexpected” and “expected.”

Figure 14. Interaction Effects (Two-way) for Religious Self-Concept

Change in religious self-concept is depicted for the sample at follow-up ($n_f = 84$), i.e., students that participated throughout the length of the study. Interaction with outcome was significant for the religious self-concept subscale scores, creating two independent groups of “failure” and “success.”

Figure 15. Interaction Effects (Three-way) for Religious Self-Concept

Change in religious self-concept is depicted for the sample at follow-up ($n_f = 84$), i.e., students that participated throughout the length of the study. Interaction with outcome and expectation of outcome were significant for the Religious Self-Concept subscale scores, creating four independent groups of “unexpected failure,” “unexpected success,” “expected failure,” and “unexpected failure.”

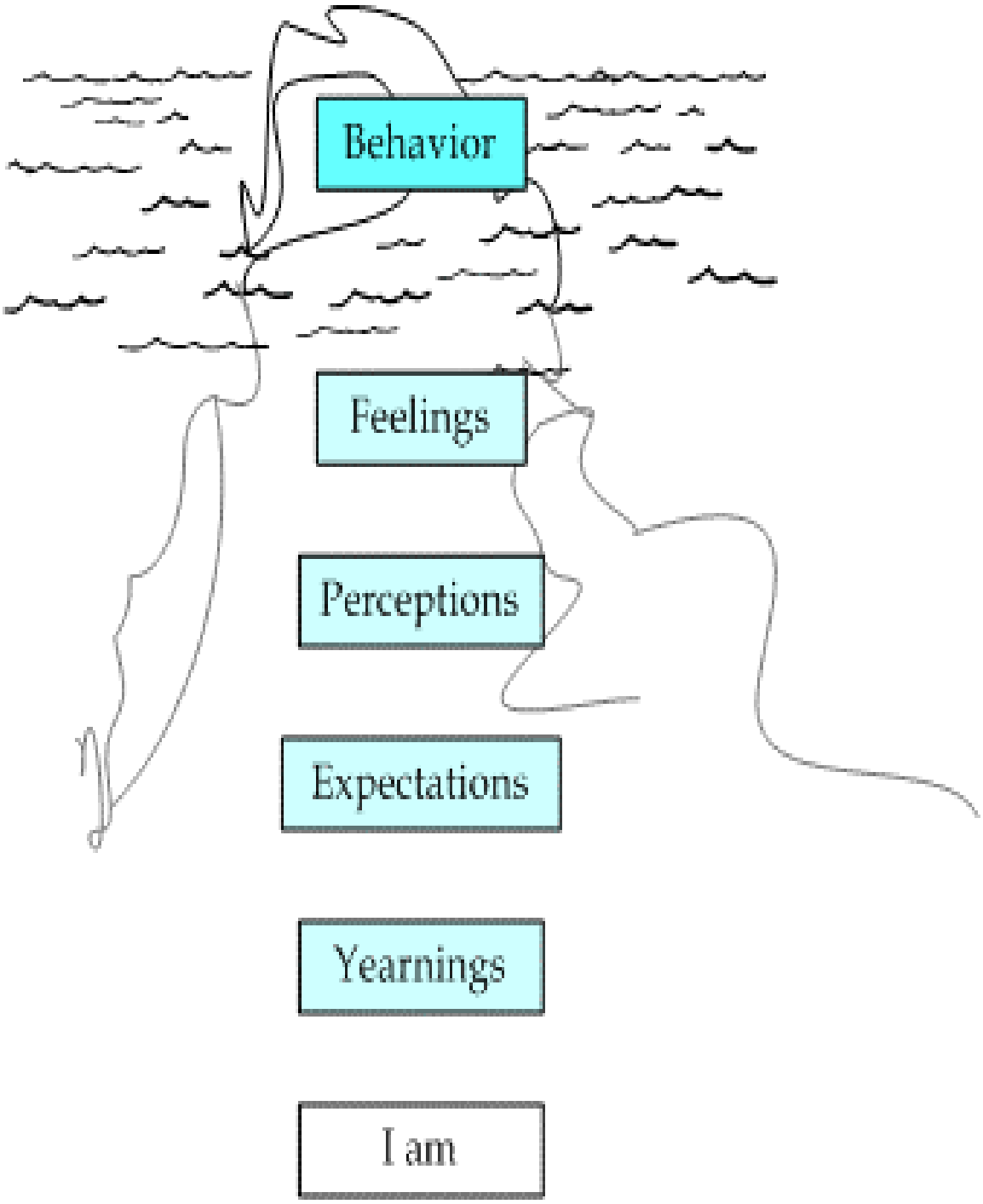

Figure 1. The Personal Iceberg Metaphor

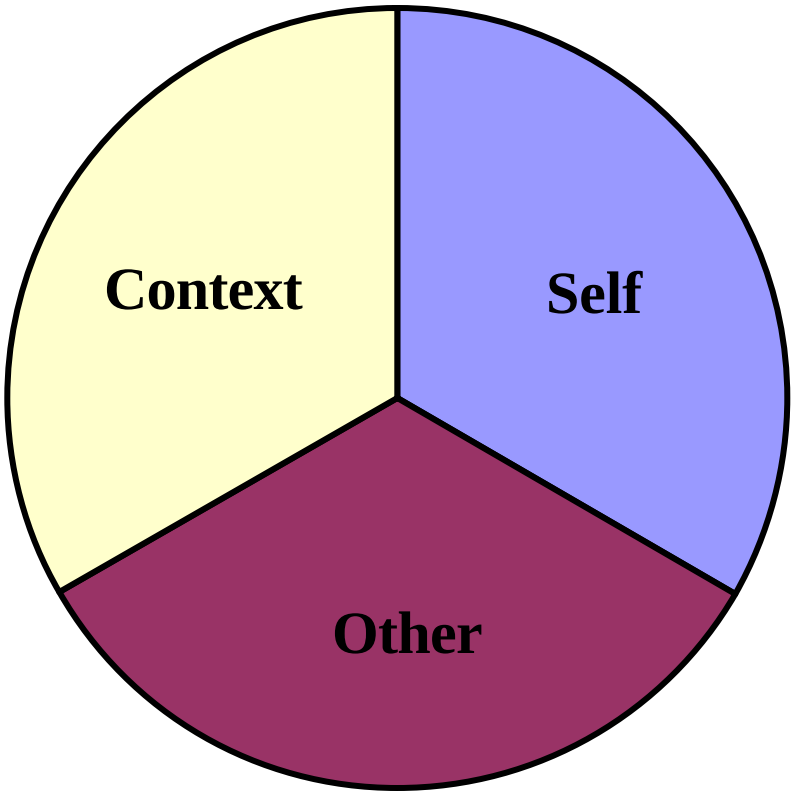

Figure 2. Parts of An Individual's Experience

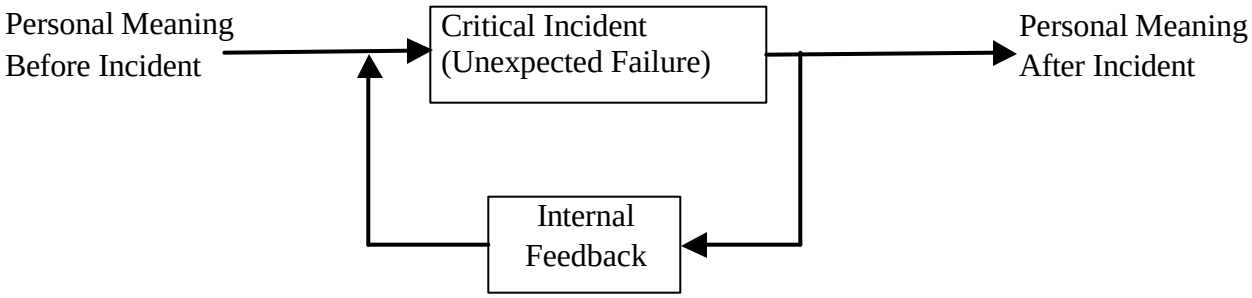

Figure 3. Closed-Loop Control System

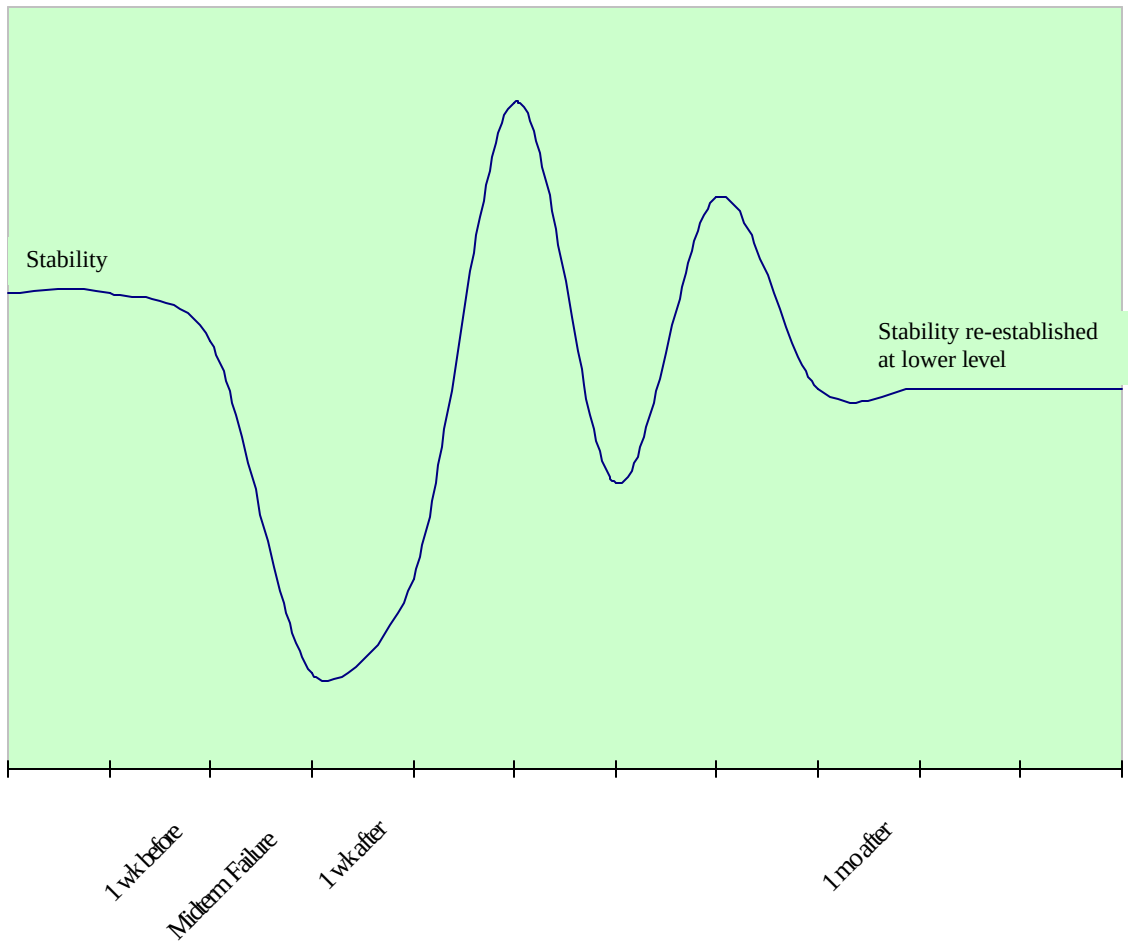

Figure 4. Critical Incident Response

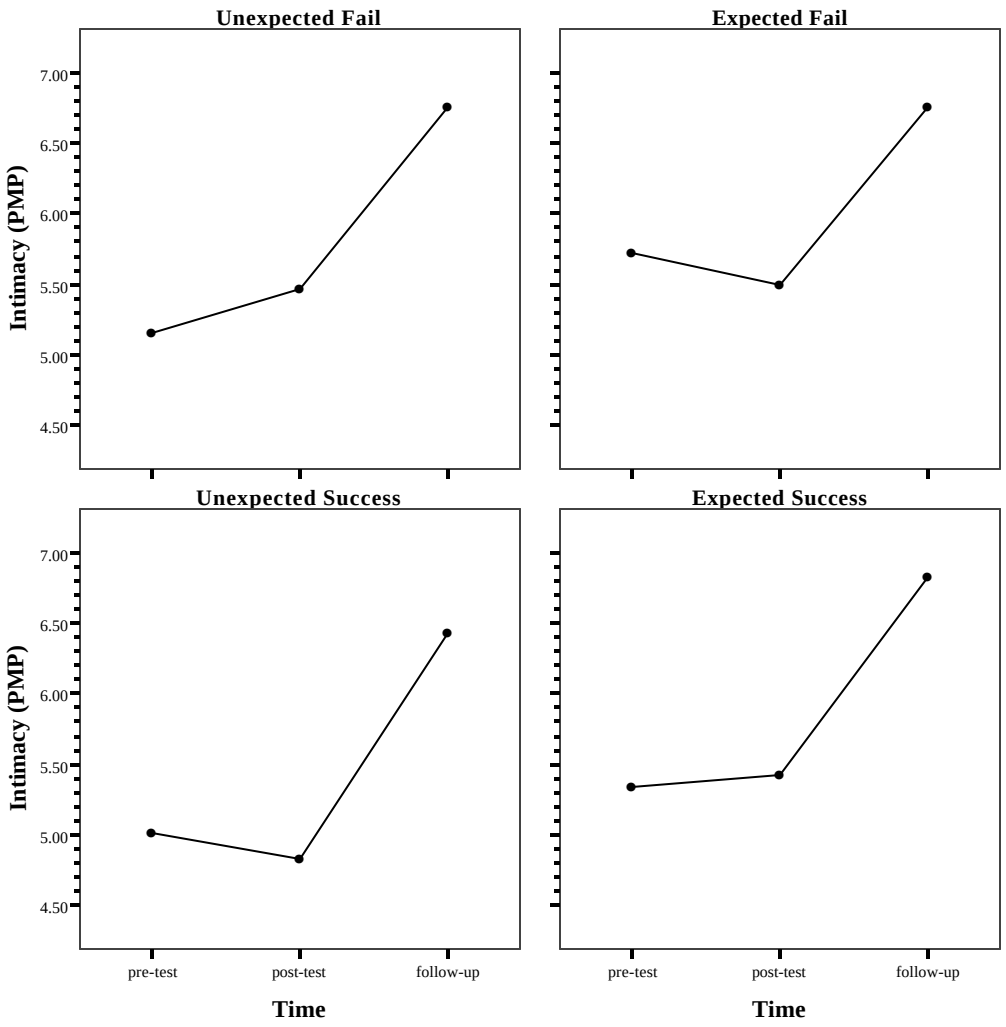

Figure 5. Interaction Effects for Intimacy (as a Source of Personal Meaning)

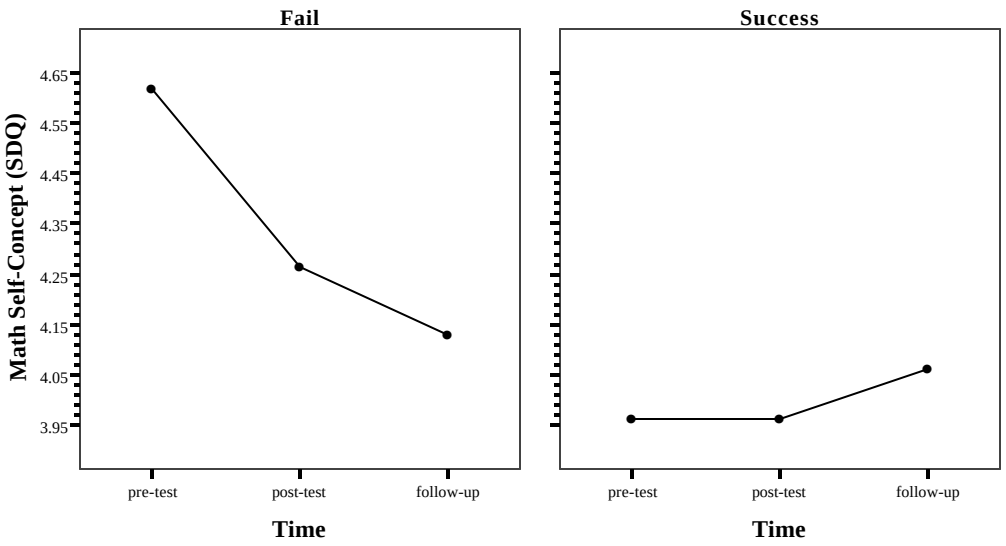

Figure 6. Interaction Effects for Math Self-Concept

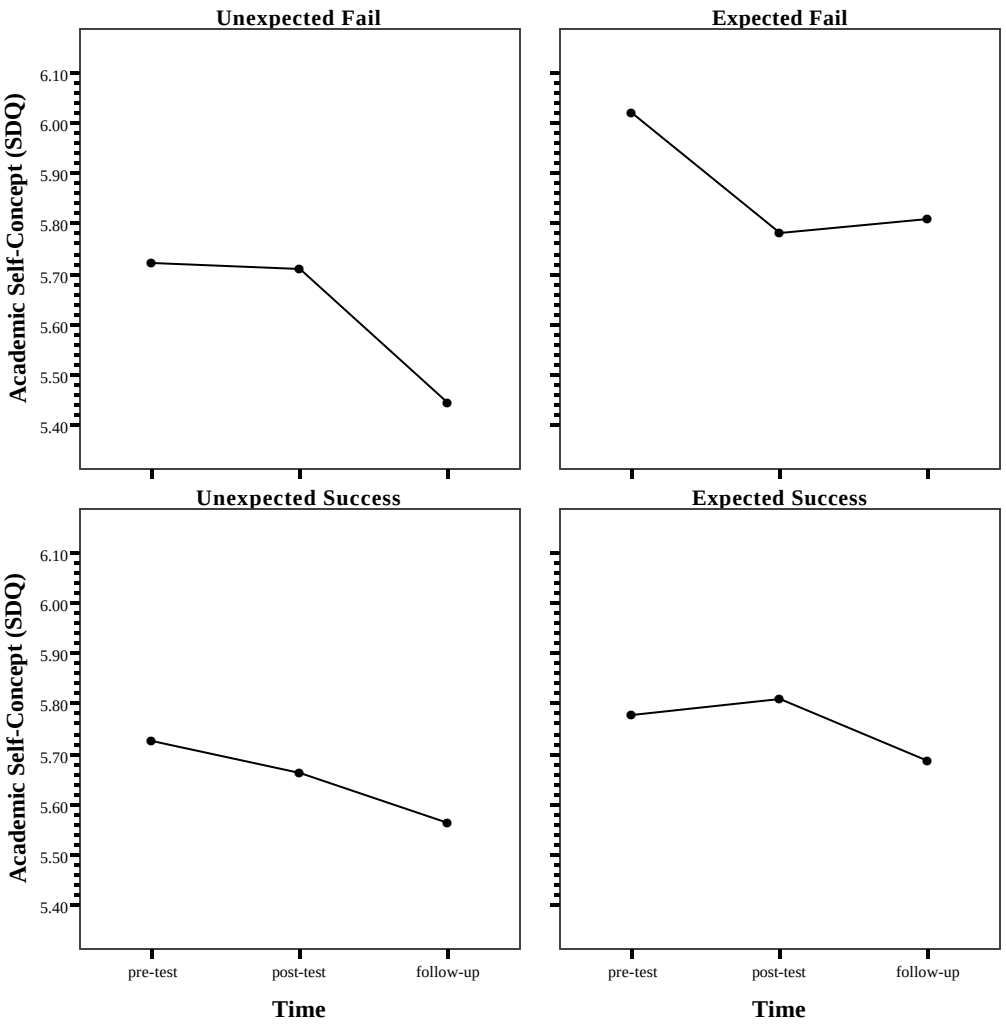

Figure 7. Interaction Effects for Academic Self-Concept

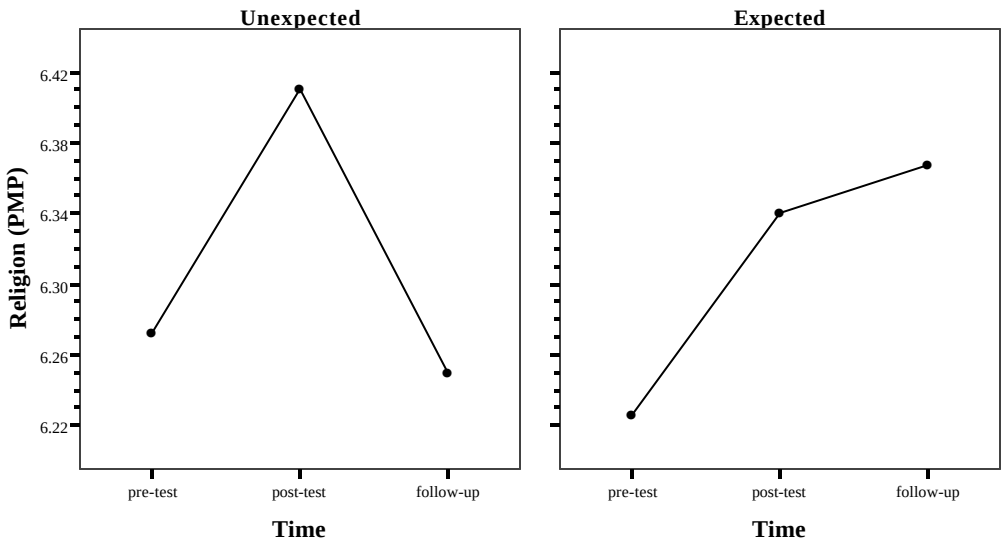

Figure 8. Interaction Effects for Religion (as a Source of Personal Meaning)

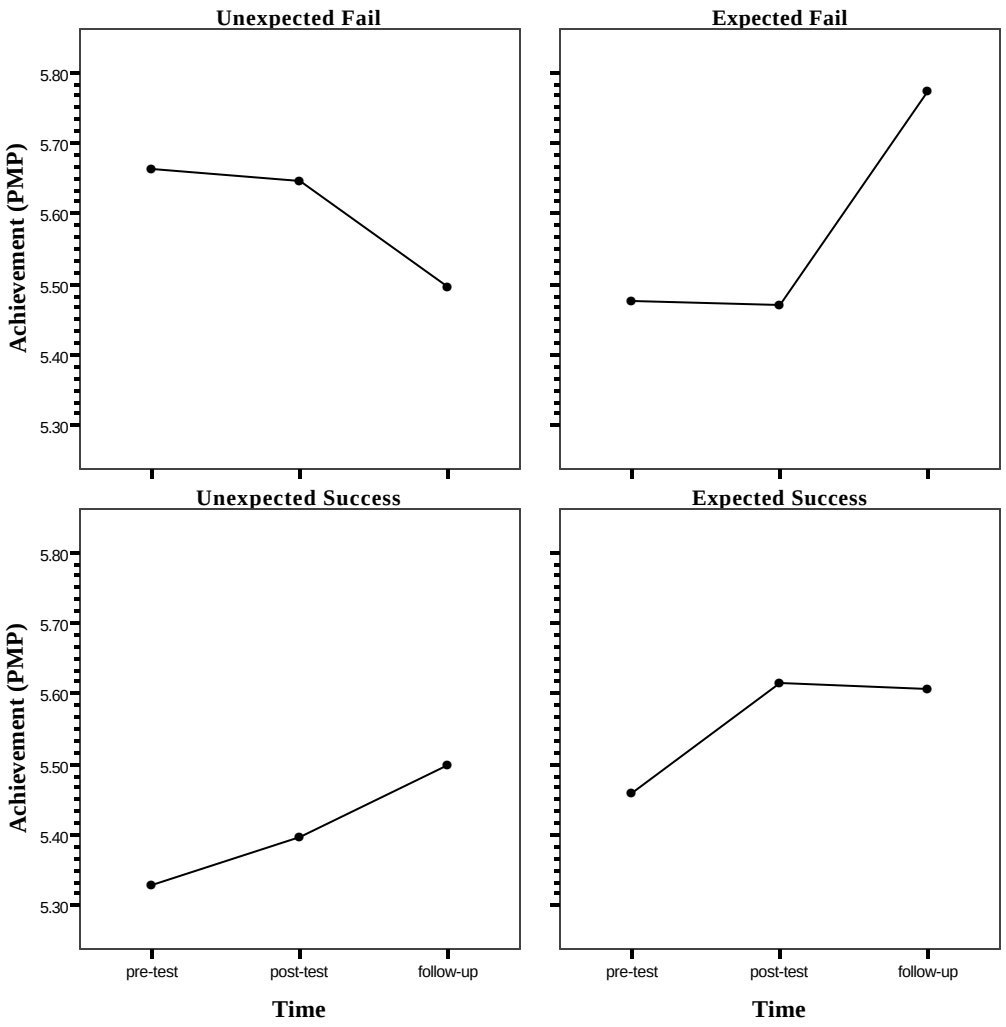

Figure 9. Interaction Effects for Achievement (as a Source of Personal Meaning)

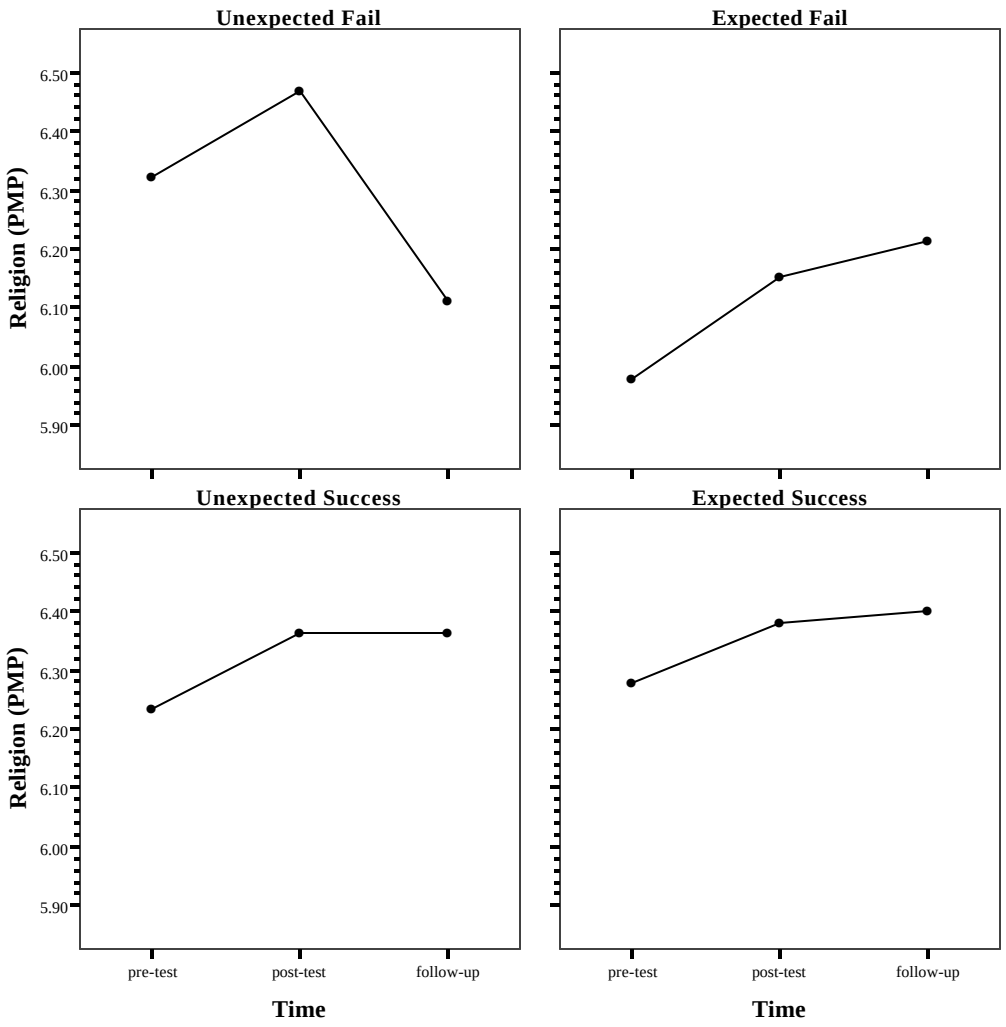

Figure 10. Interaction Effects for Religion (as a Source of Personal Meaning)

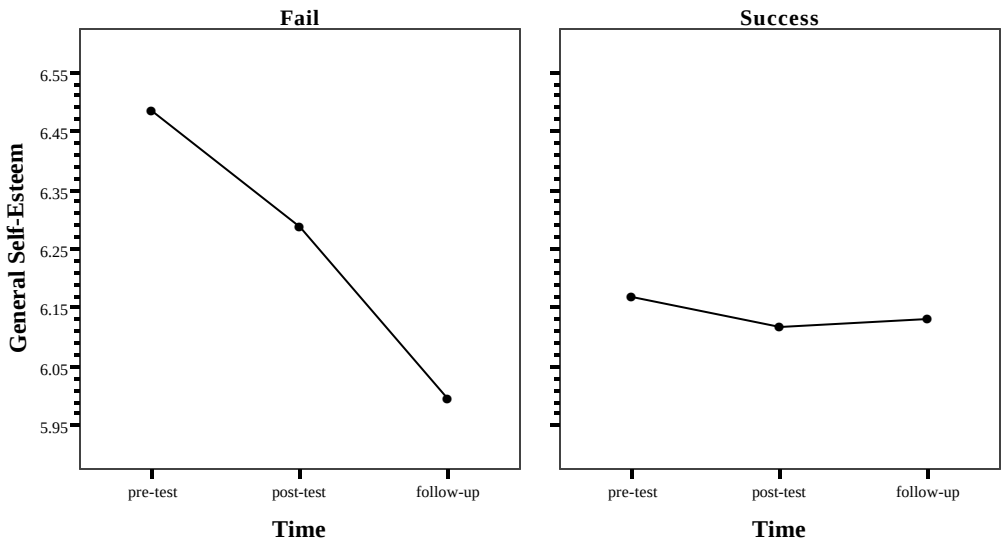

Figure 11. Interaction Effects for General Self-Esteem

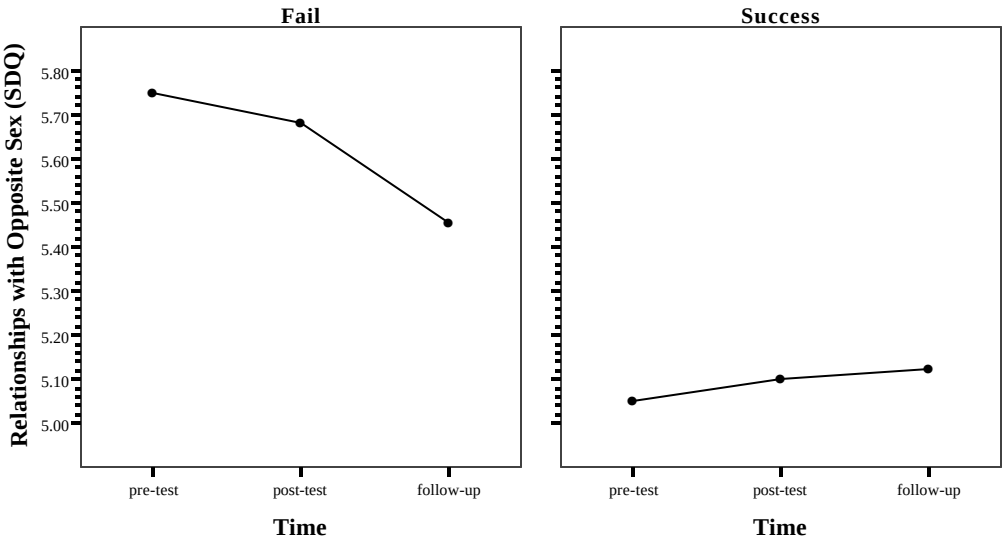

Figure 12. Interaction Effects for Self-Concept in Relationships with Opposite Sex

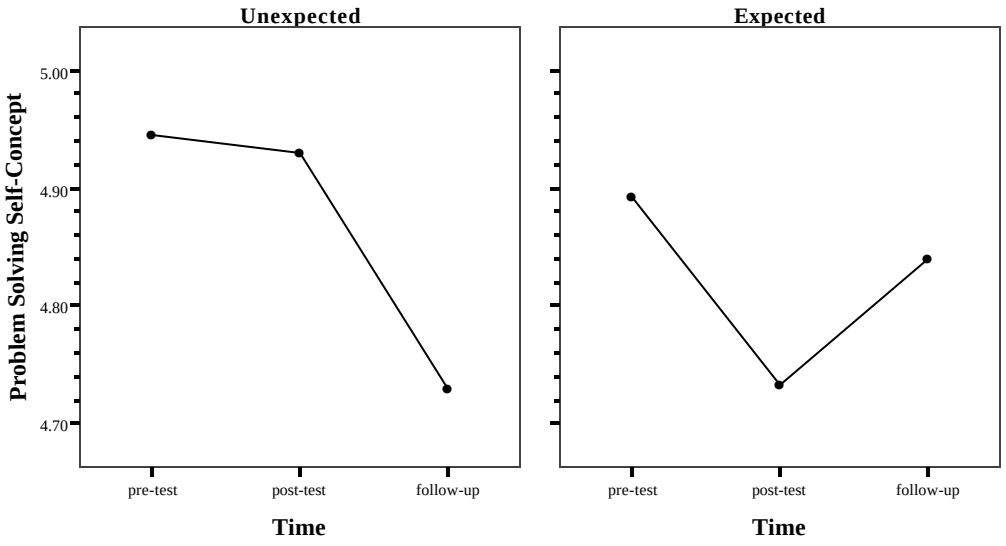

Figure 13. Interaction Effects for Problem Solving Self-Concept

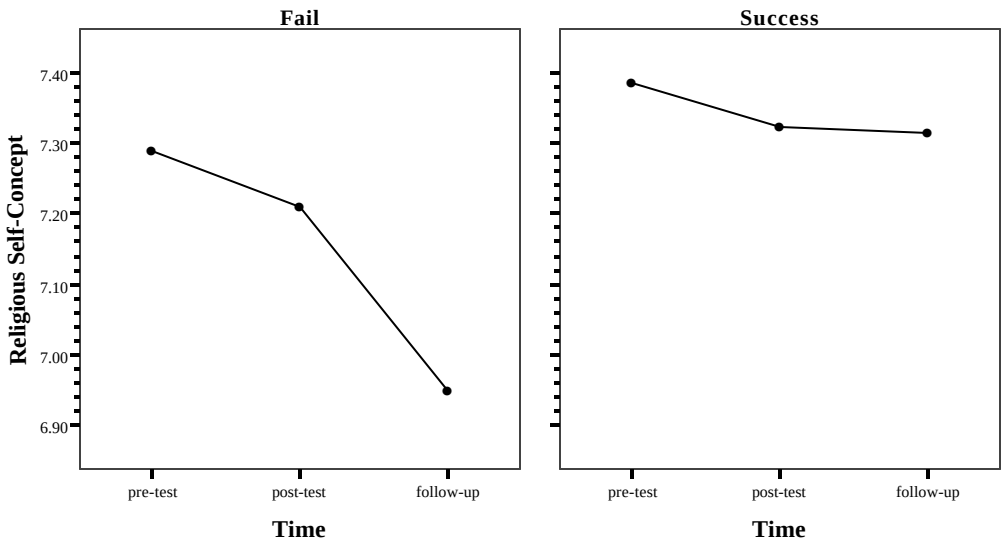

Figure 14. Interaction Effects (Two-way) for Religious Self-Concept

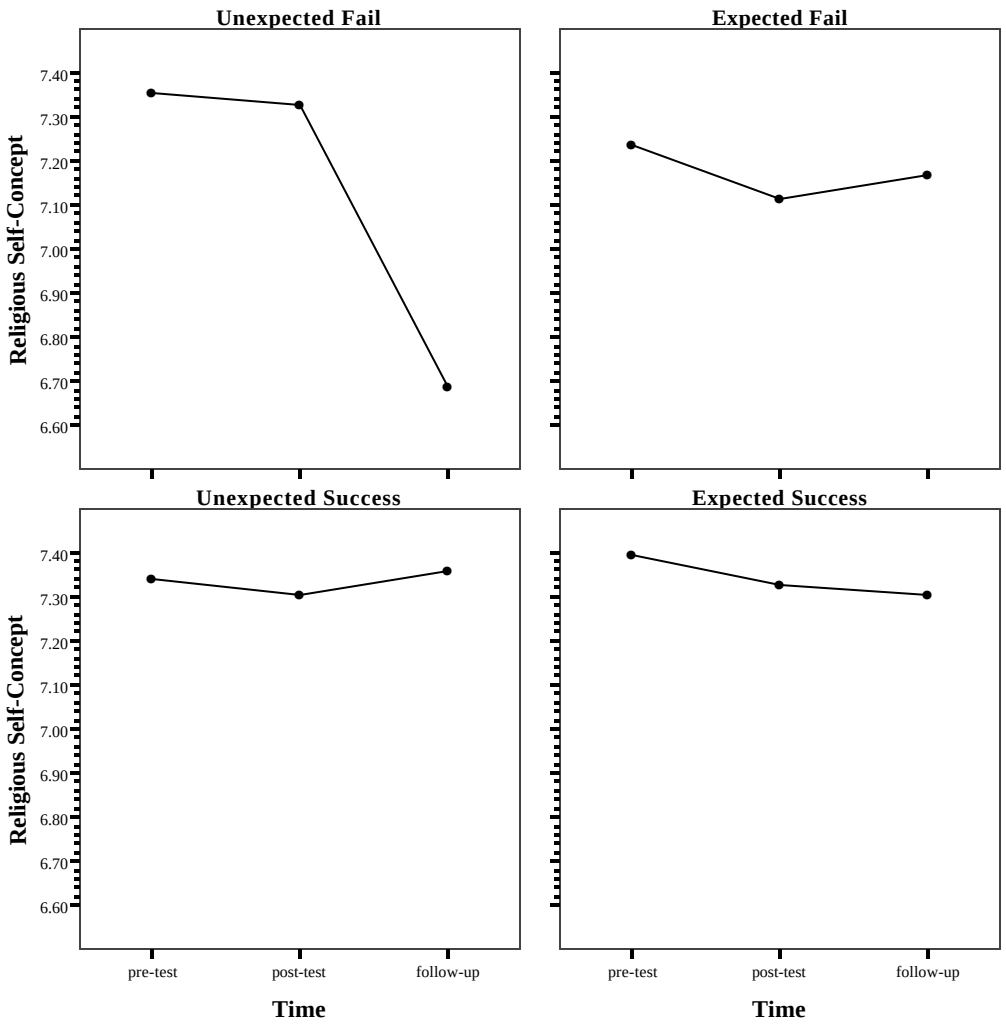

Figure 15. Interaction Effects (Three-way) for Religious Self-Concept

APPENDIX A

Consent Form

Thank you for volunteering to be a part of this study. Please read the following information and give your signature at the bottom.

PURPOSE

To better understand how first year university students' concept of themselves and sense of responsibility changes because of their first semester academic results.

PROCEDURE

Subjects will fill out demographic information as well as a questionnaire package three times (before midterm, after midterm, and at end of semester) throughout the fall 2001 semester.

TIME COMMITMENT

Time needed to complete each questionnaire package is approximately 30 minutes.

WHAT'S IN IT FOR YOU?!

All participants will automatically be entered into a draw after each of the three measurement times when questionnaires are returned.

Before midterms prizes are a $25 gift certificate at EARL's restaurant OR
$25 gift certificate to CHAPTER's books!
After midterms prize is $50 cash!
End of semester prize is $100 cash!

CONFIDENTIALITY

Completed questionnaires will be kept confidential. During the semester, you will be associated with an assigned number. A list of names will be kept in a secure location and accessed only by the research team.

RIGHTS

Participants have the right to refuse to participate or withdraw from the study at any time.

"I have read and understand the description of the study and I willingly consent to participate in this study."

NAME (Please print): _____ DATE: _____
SIGNED: _____
Please indicate which course you received this package in: _____

For your information: (fold, tear on dotted line, and detach if you wish)
Tanya Daum: daum@agape.twu.ca
Glendon Wiebe: GlWiebe@agape.twu.ca
Faculty Advisor: Dr. Philip Laird laird@twu.ca

APPENDIX B

Demographics Questionnaire

Please circle or fill in the appropriate response where indicated. Please provide a response for each and every question.

Age: _____ **Gender**: M / F

Ethnicity/ Race (please circle one):

Caucasian Black Asian Hispanic

First Nations East Indian Other _____

Religious Background (please circle one):

Protestant Catholic Jewish Hindu

Buddhist Muslim Other _____

Family Origin (please circle one):

One parent family Two parent original family

Two parent step-parent family Foster family

Other (please specify) _____

Current Family Income per year (please circle one only):

over $100,000 $75,000 to $99,000

$50,000 to $74,999 $25,000 to $49,999

less than $24,999

High School G.P.A. (please circle one only)

4.00 or above 3.5 to 3.99 3.0 to 3.49

2.5 to 2.99 2.0 to 2.49 less than 1.99

Current University Major: _____ / no declared major

APPENDIX C

Academic Locus of Control

The following statements describe beliefs about academic issues. Please use the following eight-point response scale to indicate how true (or how false) the statements are in describing your beliefs. Try to avoid leaving any items blank.

1	2	3	4	5	6	7	8
Definitely False	**False**	**Mostly True**	**More False Than True**	**More True Than False**	**Mostly True**	**True**	**Definitely True**

___ College grades reflect the effort you put into classes.
___ I came to college because it was expected of me.
___ I have determined my own career goals.
___ Some people have a knack for writing, while others will never write well no matter how hard they try.
___ I have taken a course because it was an easy good grade.
___ Professors make an early impression on you and then no matter what you do, you cannot change that impression.
___ There are some subjects in which I could never do well.
___ Some students, such as student leaders and athletes, get free rides in college classes.
___ I feel that there is nothing I can do to improve my situation.
___ I never feel really hopeless – there is always something I can do to improve my situation.
___ I would never allow social activities to affect my studies.
___ There are many more important things for me than getting good grades.
___ Studying every day is important.
___ For some courses it is not important to go to class.
___ I consider myself highly motivated to achieve success in life.
___ I am a good writer.
___ Doing work on time is always important to me.
___ What I learn is more determined by college and course requirements than by what I want to learn.
___ I have been known to spend a lot of time making decisions which others do not take seriously.
___ I am easily distracted.
___ I can be easily talked out of studying.
___ I get depressed sometimes and then there is no way I can accomplish what know I should be doing.
___ Things will probably go wrong for me some time in the near future.
___ I keep changing my mind about my career goals.
___ I feel I will someday make a real contribution to the world if I work hard at it.
___ There has been instances in school where social activity impaired my academic performance.
___ I would like to graduate from college, but there are more important things in my life.
___ I plan well and stick to my plans.

Scoring Instructions

Answers in left column are indicative of external locus of control responses. Higher scores are indicative of a more external locus of control.

F 1. College grades most often reflect the effort you put into classes.
T 2. I came to college because it was expected of me.
F 3. I have largely determined my own career goals.
T 4. Some people have a knack for writing, while others will never write well no matter how hard they try.
T 5. I have taken a course because it was an easy good grade at least once.
T 6. Professors sometimes make an early impression on you and then no matter what you do, you cannot change that impression.
T 7. There are some subjects in which I could never do well.
T 8. Some students, such as student leaders and athletes, get free rides in college classes.
T 9. I sometimes feel that there is nothing I can do to improve my situation.
F 10. I never feel really hopeless – there is always something I can do to improve my situation.
F 11. I would never allow social activities to affect my studies.
T 12. There are many more important things for me than getting good grades.
F 13. Studying every day is important.
T 14. For some courses it is not important to go to class.
F 15. I consider myself highly motivated to achieve success in life.
F 16. I am a good writer.
F 17. Doing work on time is always important to me.
T 18. What I learn is more determined by college and course requirements than by what I want to learn.
F 19. I have been known to spend a lot of time making decisions which others do not take seriously.
T 20. I am easily distracted.
T 21. I can be easily talked out of studying.
T 22. I get depressed sometimes and then there is no way I can accomplish what know I should be doing.
T 23. Things will probably go wrong for me some time in the near future.
T 24. I keep changing my mind about my career goals.
F 25. I feel I will someday make a real contribution to the world if I work hard at it.
T 26. There has been at least one instance in school where social activity impaired my academic performance.
T 27. I would like to graduate from college, but there are more important things in my life.
F 28. I plan well and stick to my plans.

APPENDIX D

Personal Meaning Profile

(Wong, 1998)

This questionnaire measures people's perception of personal meaning in their lives. Generally, a meaningful life involves a sense of purpose and personal significance. However, people often differ in what they value most, and they have different ideas as to what would make life worth living.

The following statements describe potential sources of a meaningful life. Please read each statement carefully and indicate to what extent each item characterizes your own life. You may respond by circling the appropriate number according to the following scale:

1	2	3	4	5	6	7
Not at all			Moderately			A Great Deal

For example, if going to parties does not contribute to your sense of personal meaning, you may circle 1 or 2. If taking part in volunteer work contributes quite a bit to the meaning in your life, you may circle 5 or 6.

It is important that you answer honestly on the basis of your own experience and beliefs.

Achievement

6. I engage in creative work ……..... 1 2 3 4 5 6 7
7. I am successful in achieving my aspirations …..……. 1 2 3 4 5 6 7
8. I pursue worthwhile objectives ……. 1 2 3 4 5 6 7
9. I strive to achieve my life goals ……. 1 2 3 4 5 6 7
12. I believe in the value of my pursuits ……... 1 2 3 4 5 6 7
13. I seek to actualize my potentials …… 1 2 3 4 5 6 7
21. I like challenge ……... 1 2 3 4 5 6 7
24. I take initiative ……... 1 2 3 4 5 6 7
25. I am able to make full use of my abilities ……. 1 2 3 4 5 6 7
26. I strive to do my best in whatever I am doing ……... 1 2 3 4 5 6 7
29. I am committed to my work …….. 1 2 3 4 5 6 7
34. I am enthusiastic about what I do ……... 1 2 3 4 5 6 7
40. I do not give up when I encounter setbacks or obstacles ……. 1 2 3 4 5 6 7
44. I strive toward personal growth …… 1 2 3 4 5 6 7
47. I am persistent and resourceful in attaining my goals …… 1 2 3 4 5 6 7
48. I value my work …….. 1 2 3 4 5 6 7

Relationship

10. I care about other people …… 1 2 3 4 5 6 7

18. I relate well to others ……. 1 2 3 4 5 6 7
27. I have a number of good friends …… 1 2 3 4 5 6 7
28. I am trusted by others ……... 1 2 3 4 5 6 7
32. I am higher regarded by others …….. 1 2 3 4 5 6 7
41. I am altruistic and helpful ……. 1 2 3 4 5 6 7
42. I am liked by others …….. 1 2 3 4 5 6 7
45. I bring happiness to others ……1 2 3 4 5 6 7
50. I contribute to the well-being of others …… 1 2 3 4 5 6 7

Religion

3. I am at peace with God ……..…. 1 2 3 4 5 6 7
5. I believe that life has an ultimate purpose and meaning ……. 1 2 3 4 5 6 7
19. I have a sense of mission or calling …….. 1 2 3 4 5 6 7
20. I seek to do God's will …… 1 2 3 4 5 6 7
22. I believe that human life is governed by moral laws …… 1 2 3 4 5 6 7
33. I seek to glorify God …….. 1 2 3 4 5 6 7
51. I believe in afterlife …… 1 2 3 4 5 6 7
52. I believe that one can have a personal relationship with God …. 1 2 3 4 5 6 7
54. I believe that there is order and purpose in the universe ……..... 1 2 3 4 5 6 7

Self-Transcendence

2. I believe I can make a difference in the world ……. 1 2 3 4 5 6 7
15. I strive to make this world a better place …….. 1 2 3 4 5 6 7
23. It is important to dedicate my life to a cause …… 1 2 3 4 5 6 7
30. I have a purpose and direction in life …… 1 2 3 4 5 6 7
31. I seek higher values – values that transcend self-interests …….... 1 2 3 4 5 6 7
39. I have a sense of coherence and continuity in my life ……... 1 2 3 4 5 6 7
49. I make a significant contribution to society …….. 1 2 3 4 5 6 7
53. I attempt to leave behind a good and lasting legacy …… 1 2 3 4 5 6 7

Self-Acceptance

4. I have learned that setbacks and disappointments are
   an inevitable part of life……. ……... 1 2 3 4 5 6 7
16. I am at peace with myself ……1 2 3 4 5 6 7
36. I accept my limitations …….. 1 2 3 4 5 6 7
37. I am at peace with my past …… 1 2 3 4 5 6 7
46. I accept what cannot be changed ……. 1 2 3 4 5 6 7
57. I have learned to live with suffering and make the best of it ….. 1 2 3 4 5 6 7

Intimacy

1. I have a good family life …… 1 2 3 4 5 6 7
11. I have someone to share intimate feelings with …… 1 2 3 4 5 6 7
17. I have confidants to give me emotional support …… 1 2 3 4 5 6 7
38. I have a mutually satisfying loving relationship …… 1 2 3 4 5 6 7
43. I have found someone I love deeply ……... 1 2 3 4 5 6 7

Fair Treatment

14. I have found that there is rough justice in this world ……... 1 2 3 4 5 6 7
35. Life has treated me fairly …… 1 2 3 4 5 6 7
55. I am treated fairly by others ……... 1 2 3 4 5 6 7
56. I have received my fair share of opportunities and rewards …... 1 2 3 4 5 6 7

APPENDIX E

Self-Description Questionnaire - III

Scoring Program Script

```
TITLE  'SCORING PROGRAM FOR THE SDQ III (MODIFIED 1 FEBRUARY, 2002)'.
DATA LIST
        FILE='a:\sdq3raw.txt' FIXED RECORDS=2 TABLE
        /1  Q1 TO Q75  1-75 ID1 76-79
        /2 Q76 TO Q136 1-61 SEX 63  AGE 64-65  ID2 76-79.
EXECUTE.
COMMENT THIS FORMAT READS DEMOGRAPHIC INFORMATION THAT
        WILL TYPCICALLY BE COLLECTED AS PART OF THE STUDY:
        (E.G.,SEX (1=MALE, 2=FEMALE);  AGE IN YEARS) IN ADDITION TO THE
        136 SDQIII ITEMS.  BECAUSE THERE WILL USUALLY BE OTHER
        INFORMATION COLLECTED AS PART OF THE STUDY, THIS FORMAT
        WILL HAVE TO BE ADJUSTED APPROPRIATELY, OR THE VARIABLES
        RESULTING FROM THIS PROGRAM WILL HAVE TO BE MERGED WITH
        OTHER VARIABLES.

MISSING VALUES Q1 TO ID2 (0).

COMMENT THE PURPOSE OF THE NEXT DO REPEAT IS TO REVERSE SCORE
        THE NEGATIVE ITEMS (I.E., ITEMS FOR WHICH A LOW SCORE
        REFLECTS A POSITIVE SELF-CONCEPT).
RECODE      Q2,Q4,Q6,Q8,Q10,Q12,Q14,Q16,Q18,Q20,Q22,Q24,Q26,Q28,Q30,Q32,
          Q34,Q36,Q38,Q40,Q42,Q44,Q46,Q47,Q48,Q50,Q52,Q56,Q58,Q62,Q64,Q66,
          Q70,Q72,Q73,Q74,Q76,Q78,Q80,Q81,Q82,Q84,Q88,Q90,Q92,
          Q96,Q98,Q99,Q100,Q102,Q104,Q106,Q107,Q108,Q110,Q114,Q115,
          Q116,Q118,Q120,Q122,Q124,Q126,Q130,Q132,Q133,Q135,Q136
          (1=8)(2=7)(3=6)(4=5)(5=4)(6=3)(7=2)(8=1) .

COMMENT  THE FOLLOWING COMPUTE STATEMENT COUNTS THE NUMBER
        OF MISSING VALUES FOR THE 136 SDQIII ITEMS USED BELOW .
COMPUTE  NUMISS=NMISS(Q1 TO Q75,Q76 TO Q136).

COMMENT THE NEXT 14 COMPUTES CREATE SCALE SCORES FOR THE 13
        SDQIII SCALES AND FOR THE TOTAL SELF SCALE .
COMPUTE  PHYS=MEAN(Q13,Q26,Q39,Q52,Q65,Q78,Q91,Q104,Q117,Q130).
COMPUTE  APPR=MEAN(Q11,Q24,Q37,Q50,Q63,Q76,Q89,Q102,Q115,Q128).
COMPUTE  OSEX=MEAN(Q5,Q18,Q31,Q44,Q57,Q70,Q83,Q96,Q109,Q122).
COMPUTE  SSEX=MEAN(Q12,Q25,Q38,Q51,Q64,Q77,Q90,Q103,Q116,Q129).
COMPUTE  PRNT=MEAN(Q8,Q21,Q34,Q47,Q60,Q73,Q86,Q99,Q112,Q125).
COMPUTE  HONS=MEAN(Q4,Q17,Q30,Q43,Q56,Q69,Q82,Q95,Q108,Q121,
```

```
        Q132,Q134).
COMPUTE  RELG=MEAN(Q2,Q15,Q28,Q41,Q54,Q67,Q80,Q93,Q106,Q119,
        Q133,Q136).
COMPUTE  EMOT=MEAN(Q7,Q20,Q33,Q46,Q59,Q72,Q85,Q98,Q111,Q124).
COMPUTE  GENL=MEAN(Q3,Q16,Q29,Q42,Q55,Q68,Q81,Q94,Q107,Q120,
        Q131,Q135).
COMPUTE  MATH=MEAN(Q1,Q14,Q27,Q40,Q53,Q66,Q79,Q92,Q105,Q118).
COMPUTE  VERB=MEAN(Q6,Q19,Q32,Q45,Q58,Q71,Q84,Q97,Q110,Q123).
COMPUTE  ACAD=MEAN(Q9,Q22,Q35,Q48,Q61,Q74,Q87,Q100,Q113,Q126).
COMPUTE  PROB=MEAN(Q10,Q23,Q36,Q49,Q62,Q75,Q88,Q101,Q114,Q127).
COMPUTE  TOTSLF=MEAN(PHYS,APPR,OSEX,SSEX,PRNT,HONS,RELG,EMOT,
        GENL,MATH,VERB,ACAD,PROB).
```

APPENDIX F

Post-Test Questionnaire

Please write the course you are referring to when answering this questionnaire___
Date: _____ Circle the appropriate responses for each of the following:

I am concerned about my performance on this exam.

I do not care at all							I care very much
1	2	3	4	5	6	7	8

I believe my parent(s) and/or friends care about my performance.

They do not care at all						They care very much	
1	2	3	4	5	6	7	8

I expected my results on this exam.

Fully Unexpected						Fully Expected	
1	2	3	4	5	6	7	8

I consider my results a success.

Totally a Failure						Totally a Success	
1	2	3	4	5	6	7	8

Which year of studies at TWU are you in?

1st year	3rd year
2nd year	More than 3 years

Have you attended another university or college (other than TWU) before this fall?

(Please circle one) Yes No

Thank you for volunteering to be a part of this study.

For more information: (fold, tear on dotted line, and detach)
Tanya Daum: daum@agape.twu.ca
Glendon Wiebe: GlWiebe@agape.twu.ca
Faculty Advisor: Dr. Philip Laird laird@twu.ca

APPENDIX G

Follow-Up Questionnaire

Please answer the following questions keeping in mind the same course you referred to in the previous questionnaire.

Please write the course you are referring to _____
Date: _____ Circle the appropriate responses for each of the following.

I am concerned about my performance on this exam.

I do not care at all							**I care very much**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**

I believe my parent(s) and/or friends care about my performance.

They do not care at all						**They care very much**	
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**

I expected my results on this exam.

Fully Unexpected						**Fully Expected**	
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**

I consider my results a success.

Totally a Failure						**Totally a Success**	
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**

Have you experienced any of the following this semester?

If so, please circle one:

Family member loss	**Major medical/psychological problem**
Relationship strain/termination	**Financial crisis**
Other major stressor (specify): _____	

Thank you for volunteering to be a part of this study.

For more information: (fold, tear on dotted line, and detach)
Tanya Daum: daum@agape.twu.ca
Glendon Wiebe: GlWiebe@agape.twu.ca
Faculty Advisor: Dr. Philip Laird laird@twu.ca