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# **Exploring Exploration: Career Identity Development and Temperament**

by

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## Abstract

Career identity exploration is a central component of the lives of undergraduate university students. Although students are encouraged to explore, it is unclear whether different methods of exploration are better suited for certain individuals. In the present study, quantitative data were collected to examine the relationship between shyness and various methods of exploration. Two hundred fifty-seven university undergraduate students (29 male), ranging in age from 17-25 years completed a 60-minute self-report questionnaire. Shyness, identity, identity distress, subjective dimensions of exploration (*satisfaction with exploration, reasons for not exploring, helpfulness of exploration methods*), foci of exploration (*non-social, social, self, and environmental*), approaches to exploration (*breadth, depth*), and moderating variables (*social support, sociability*) were measured.

Shyness was positively correlated with moratorium (high exploration, low commitment) and uncorrelated with the other identity statuses. Shyness was also positively correlated with identity distress, and a predicted interaction between shyness and identity diffusion predicting career identity distress was supported. Shyness was negatively correlated with satisfaction with amount of exploration engaged in to-date. In addition, shyness was correlated with the likelihood of selecting *too stressful* and *too anxiety provoking* as reasons for engaging in less exploration than one would like. Expected relationships between shyness and beliefs about, and engagement in, various methods of exploration were largely non-significant. Exceptions to this were the negative correlations between shyness and engagement in social exploration, and beliefs about the helpfulness of social self-exploration, both of which were significant at a trend level. A





predicted interaction between shyness and social support predicting *total social exploration* was supported, showing that high social support buffers the negative relationship between shyness and exploration; such a moderating relationship did not exist, however, between sociability, shyness and social exploration.

Results suggest that although shy university students are engaged in career exploration, they are experiencing feelings of distress and dissatisfaction with their career identity exploration and development. Thus, to help shy students become successful in their exploration, it is important for counsellors, family members, and peers to be aware of the feelings the individuals are experiencing and help them reduce the anxiety and stress associated with the exploration process. One promising method, supported by the results in this study, is by encouraging shy individuals to explore with social support.



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## INTRODUCTION

Erikson (1968) introduced the world to the concept of a psychosocial task of adolescence: identity development. Next, Marcia (1980) operationally defined Erikson's concepts into a testable model with two dimensions: exploration and commitment. Although research within the identity exploration dimension continues to expand, a framework for organizing the various methods of exploration is lacking. From the suggestions made by several researchers (e.g. Hamer & Bruch, 1997), therefore, I have developed an *exploration tree*. This tree will serve as a foundation for organizing and testing hypotheses concerning the methods and foci of identity exploration in the career domain.

In addition, healthy identity development is often considered a product of *social* exploration (e.g. Cantor, Kimmelmeier, Basten, & Prentice, 2002). However, as Buss (1985) argued, individuals who are shy are disadvantaged in novel social situations, such as exploration. It is unclear, therefore, whether shyness impedes the development of a healthy identity. To examine this possibility, shyness will be included as a predictor of interest throughout my thesis.

First, I will present a discussion of the theoretical significance of identity, focusing on *what* identity is, *why* it is important, and *when* and *how* it develops. Second, I will review research pertaining to identity exploration. Third, an introduction to the topic of shyness will be made, concluding with the potential role of shyness in identity exploration and, consequently, the role of shyness in the present research. Last, I will introduce my organizational model – the *exploration tree*.



## Identity

### *Defining Identity – The “What”*

Any discussion of identity ought to begin with Erik Erikson, as it is widely accepted that his 1968 landmark book *Identity: Youth and Crisis* instigated readers to describe, research, and study what may be the most critical developmental task of adolescence: identity development (Adams & Montemayor, 1983). As such, Erikson's definition of identity merits careful consideration and interpretation. This special attention is granted not only as a result of his highly respected position in the identity field, but also because his definition has stood the test of time. Contemporary definitions, as will be shown, remain faithful to its central concepts (Patterson, Sochting, & Marcia, 1992). In Erikson's (1968) words:

Ego identity then, in its subjective aspect, is the awareness of the fact that there is a self-sameness and continuity to the ego's synthesizing methods, the *style of one's individuality*, and that this style coincides with the sameness and continuity of one's *meaning for significant others* in the immediate community (p.50).

Patterson et al. (1992) extracted and described three key components of identity from Erikson's definition. The first, inner sameness, reflects the need for consistency and coherence among one's values and goals. These subsequently become the foundation on which to order one's behaviour. The second key component, continuity, explains the importance of past behaviours and future hopes as being related to the present self. The third component, social relationships, indicates that one's identity is developed from, and experienced within, relationships to others and the roles one occupies in society. Harold Grotevant's (1998) more recent definition of identity as the “distinctive combination of personality characteristics and social style by which one defines him- or herself and by



which one is recognized by others” (p.1119) illustrates that Erikson’s key components do, indeed, remain an integral part of contemporary identity theory.

### *Does Identity Really Matter? The “Why”*

According to Adams and Marshall (1996), identities that are actively self-constructed represent Erikson’s (1968) “optimal sense of identity” (p.165). The components of an optimal identity, as previously mentioned in Erikson’s (1968) definition and described by Patterson et al. (1992), serve important functions for the individual. Adams and Marshall (1996) described several of these functions such as intrapersonal competence, successful interpersonal relationships, and the ability to function productively in society.

First, identity provides the structure for understanding whom one is. Adams and Either (1999) argued that this understanding of the “self” can reveal itself in low levels of anxiety about the self (in Serafini & Adams, 2002). Low anxiety, in turn, can be manifested as high self-acceptance and self-esteem, and low self-consciousness. Indeed, individuals who have self-constructed and achieved an optimal identity have shown high levels of the former and low levels of the latter constructs, suggesting healthy intrapersonal competence.

Second, compared to individuals who have not established their identity, individuals who have achieved and maintain a healthy identity have been found to be more deliberate in their approach to romantic relationships, are more willing to open up and disclose personal information about themselves to their partner, and score higher on measures of intimacy (Adams, 1998; Serafini & Adams, 2002).





Finally, active self-construction of an optimal identity allows an individual to select a role, such as an occupation, that is harmonious with their biological attributes and psychological characteristics, as well as being valued by society (Lerner, 2002). This function, as outlined by Patterson et al. (1992), is an example of a component of identity that is developed from and experienced within society. The importance of this fit between person and role is that it has shown to be related to job satisfaction, career longevity, and thus, productive functioning in society (Grotevant, 1992).

Another approach to understanding the importance of identity is to consider the outcomes of individuals who are classified as having a lack of interest in exploring their identity or committing to values and roles. These individuals, often labelled as diffuse, have increased substance use and academic problems, are more neurotic, and are less conscientious than individuals who are classified as having an achieved identity (Lerner, 2002; Schwartz, 2001). Furthermore, diffused individuals are likely to be highly self-focused and self-conscious, are often emotionally distant from their family, have problems in intimate relationships, have poor interpersonal skills, and become drifters or low-functioning individuals (Adams, Markstorm, & Abraham, 1987; Schwartz, 2001).

Forming an optimal identity is seen as a prerequisite for future health and success (Lerner, 2002). More specifically, successful resolution of crises encountered during the adult years, such as Erikson's intimacy vs. isolation and generativity vs. stagnation crises, are seen as dependent on healthy identity development during the adolescent and young adult years (Lerner, 2002). Thus, the literature clearly suggests that identity development has life-long implications for the individual.



### *Developing Identity – The “When”*

Although identity development continues throughout life (Grotevant, 1987), adolescence is often seen as *the* period for identity crises, exploration, and development. First, the “crisis” might reflect adolescents’ pressure to reply to society’s “who are you?” question, precisely at the stage when they are most unsure about this themselves (Lerner, 2002). Second, adolescence is a period when society offers time free from adult roles and responsibilities and provides the necessary institutions for identity explorations to take place (Van Hoof & Raaijmakers, 2002). Finally, it is during adolescence that the individual reaches the physical and cognitive maturation necessary to face identity issues (Van Hoof & Raaijmakers, 2002). However, it is notable that although identity-related exploration may be taking place, stable commitments are rare during adolescence (Grotevant & Cooper, 1998). That is, although adolescents may be engaged actively in exploring identity alternatives, few have made commitments to specific beliefs, values and goals that will ultimately define their healthy sense of self. Perhaps this lack of commitment is a result of the transient and tentative nature of adolescent explorations (Arnett, 2000).

Arnett (2000) argued that the modern “age of exploration” is, in fact, emerging adulthood, defined as a developmental period from the age of 18 through to the late twenties. As compared to adolescence, it is during emerging adulthood, he believed, that identity explorations are more serious and focused. He explained that emerging adulthood is ideal for identity exploration as it is free from the parental control often associated with adolescence and, in addition, is not yet associated with the multitude of social obligations and expectations of early adulthood (Arnett, 2004). Emerging adulthood, in fact, is



associated with a high enrolment in postsecondary education, a setting which promotes identity exploration in the areas of love, work, and worldviews. Furthermore, although emerging adulthood is associated with identity explorations in a number of domains, career explorations are likely to be particularly heightened during this period. Thus, in this study I will be specifically interested in exploration of the career domain in emerging adults.

The preceding sections established that identity development is critical for healthy intra-and interrelationships and that although identity development continues throughout life, researchers have largely associated identity exploration with adolescents and emerging adults. Next, a review of another important aspect of identity will be presented: *how* identity develops.

#### *Developing Identity – The “How”*

Theorists generally agree on the importance of person-context interactions in the processes underlying identity development, and, furthermore, on the position that such interactions mutually influence the person and context in a nonlinear way (e.g. Adams & Marshall, 1996; Erikson, 1968; Grotevant & Cooper, 1998). Despite this general agreement, however, there is disagreement among theorists over which source is *most* influential on an individual’s developing identity. Berzonsky’s (1989) *identity styles* theory, for example, emphasized internal characteristics such as decision-making abilities and personal interpretations of experiences. Côté (1996), on the other hand, stressed the influence of contextual resources such as financial assets, schools, clubs, and politics on identity development.





One theory of identity development that, according to Schwartz (2001), begins to capture the multidimensionality of identity that Erikson envisioned is Adams and Marshall's (1996) *developmental social psychology* theory. Adams and Marshall (1996) viewed identity development as consisting of two processes, integration and differentiation. Integration, the social component of identity, refers to the processes of becoming part of a group, connected to others, and fitting in with one's sociocultural context. Differentiation, on the other hand, is the individual component. It refers to the processes of asserting oneself as a unique individual with unique characteristics. These authors maintained that it is a balance between these two processes that lead to the development of a healthy identity and that being too high or low on either can lead to negative consequences such as rejection by others or a loss of sense of one's agency and uniqueness.

It has now been established that both the person and the context are influential in the development of an individual's identity. However, any discussion focused on *how* identity develops must acknowledge that aspects of identity, such as one's ideas, values, and goals, are *selected* (Adams & Marshall, 1996). What is meant by selections and how are they made? The answers lie in an examination of James Marcia's (1980) *identity status* theory.

#### Marcia: Exploration and Commitment

Despite Erikson's unprecedented contribution to identity research, his writings were based largely on observations he made during psychoanalytic sessions with patients and thus are described as being "rich in clinical and metaphorical description but lacking in rigor and detail" (Schwartz, 2001, p.11). From Erikson's writings, Marcia (1980)





extracted operational definitions and developed a testable model to measure these constructs. This model, known as the *identity status* paradigm, has become the most widely used model in the identity literature (Grotevant, 1987). The following is a brief description of the *identity statuses*, which will then lead into a more in-depth examination of exploration, one of the key dimensions of identity development.

In short, Marcia's (1980) identity status model consists of two dimensions: exploration and commitment. Grotevant (1987) defined exploration as "problem-solving behaviour aimed at eliciting information about oneself or one's environment in order to make a decision about an important life choice" (p.204). For example, barriers to exploration, such as finances and competing alternatives, might present themselves to the individual during the exploration process. As such, problem-solving and decision-making skills are necessary in order to make choices as to which alternatives best fits with one's developing identity. The resulting choice represents Marcia's second dimension, commitment, which is the act of choosing and adhering to goals, values, and beliefs, from among the possible alternatives (Schwartz, 2001).

Marcia (2001) explained that it is through external statements about clients' explorations and commitments in the real world that researchers are able to uncover their internal processes. Furthermore, one's identity structure will differ depending on the amalgamation of these dimensions.

The dimensions of exploration and commitment each can be divided into low and high levels. Through interviews and/or questionnaires, an individual then can be described as being low on each dimension (diffuse identity status), high on each dimension (achieved), low on exploration and high on commitment (foreclosure), or,



finally, high on exploration and low on commitment (moratorium). Some researchers suggested a shift from what is often cited as the least mature identity status (diffusion) in early adolescence to the most mature identity status (achieved) in late adolescence (e.g. Waterman, 1999). Schwartz (2001), however, disagreed. He believed that there is no clear developmental sequence and until there is, the statuses are best conceptualized as reflecting different character types.

I believe that identity might be best conceptualized as a mixture of these two points of view. For example, identity might be developmental in nature but as opposed to chronological age, life events might be better predictors of current identity status, in addition to what is most healthy for an individual (e.g. Marcia, 2001). However, it is also likely that an individual's personality characteristics would predict how they deal with identity-related issues (Grotevant, 1987), which supports the idea of identity styles. For example, as will be argued in a later section, shyness might affect one's approach to identity exploration.

The identity status paradigm has generated a substantial research literature and is still widely employed, despite its limitations (see Bosma, 1992) and notable extensions (see Archer & Waterman, 1990). Researchers have observed a parallel pattern between the statuses and various measures of psychological states (Adams, Markstrom, & Abraham, 1987). More specifically, individuals in what has been termed the more advanced statuses (moratorium and achieved) are more likely to score higher on measures of personality characteristics, such as locus of control and moral development, than individuals in the less advanced statuses (foreclosure and diffusion). In addition, individuals who have actively self-constructed their identities (moratorium and achieved)



have a greater structure for understanding the self, more personal control and free will, and more ability to recognize future possibilities and choices than individuals whose identities are based on imitation and identification (diffusion and foreclosure) (Serafini & Adams, 1998). Furthermore, it is precisely such functions of identity that fit with Erikson's (1968) concept of optimal identity. Therefore, although perhaps not the case in all cultures or ethnic groups (e.g. Lewis, 2003; Markstrom-Adams & Adams, 1995; Streitmatter, 1998), the overall consensus from researchers studying identity development in Western societies is that active self-construction and exploration are necessary steps in the achievement of optimal identities.

#### *Global versus Domain-Specific Statuses*

Prior to further discussion regarding identity exploration, it is important to bring attention to the distinction between assigning an individual a global identity status (one status reflecting one's ideological *and* interpersonal identity) and assigning an individual domain-specific statuses (separate statuses for *each* identity component within the ideological and interpersonal domains such as individual statuses for occupation and dating, respectively) (Goossens, 2001). In his original clinical interviews, for example, Marcia believed it was important to consider which domains were presently most meaningful to an individual and use those as a guide for assigning their identity status, as opposed to weighing each domain equally when assigning a status (Goossens, 2001). The finding that the identity concerns of students might be dependent on the time of the academic year, for example, supported the importance of considering which identity issues are most salient in an individual's life, at that precise time (Van Hoof & Raaijmakers, 2002). Despite considering the meaning of identity domains for each





individual, they would nevertheless receive a global status meant to represent all components of their identity.

Identity interviews and questionnaires that have been developed recently may allow researchers to determine a global or domain-specific status. In his review, Goossens (2001) argued for the use of domain-specific status, whenever possible, as they are better able to capture the complexity of identity development. His argument was supported by several findings such as the finding that only a small percentage of students are assigned the same identity status in all three ideological domains (religion, politics, and occupation). Further, global statuses masked gender differences that emerged when domain-specific statuses were examined. Goossens concluded his argument by explaining that identity is not a unitary construct and thus should not be treated as such, a fact that was previously often overlooked by past identity researchers. Therefore, I have opted for the domain-specific approach to measuring identity in the present study. Moreover, due to thesis constraints, I will focus specifically on the occupational (career) domain as exploring and committing to a specific career is a meaningful area of identity development for university students.

Three key points from the preceding pages assist in the introduction of the following sections and, subsequently, in building the rationale for the present study. First, active self-construction and exploration are considered to be prerequisites in the development of an optimal identity. Second, emerging adulthood is a period of serious and focused identity exploration. Third, examination of domain-specific statuses, as opposed to global statuses, is preferable for identity research. In the following two





sections, I take a closer look at identity exploration processes and some of the benefits and consequences associated with it.

### Exploring Exploration

A brief clarification of terminology ought to be made as researchers have used the words “exploration” and “crisis” interchangeably when discussing Marcia’s identity dimensions. More specifically, keeping with traditional Eriksonian terminology, some textbooks continue to refer to Marcia’s two dimensions of identity as *crisis* and *commitment* (e.g. Lerner, 2002). Other researchers, however, have used the term “crisis” to describe the emotional upheaval that adolescents face during their identity development (Lerner, 2002). In the present research, in reference to Marcia’s identity dimension, I will adopt the more commonly-used term “exploration” as opposed to “crisis”, as it better evokes and represents the behavioural aspect of this construct.

As previously defined, identity exploration refers to the process of examining alternatives that will eventually lead to commitment to a set of values and beliefs that reflect one’s true self. Grotevant (1987) identified two components of exploration: abilities (such as skills) and orientations (or attitudinal factors). In addition, he identified various antecedents of exploration, such as information-seeking tendency and willingness to explore.

Schwartz, Kurtines, and Montgomery (2005) explained identity exploration further by describing it as two distinct, yet overlapping processes. The first, based on a person-as-scientist perspective, conceptualizes exploration as a cognitively-focused, problem-solving decision-making process. That is, a person “self-constructs” identity through rational decisions made about externally presented alternatives. This process



resembles Berzonsky's (1989) identity style theory. Berzonsky conceptualized identity as not only a conceptual structure, but as representing personal decision-making and problem-solving processes. Thus, his theory is based on how individuals construct their identities.

The second exploration process, based on theories of self-actualization and flow, conceptualizes exploration as involving the discovery of one's unique talents and potentials and constructing one's identity based on these (Schwartz et al., 2005). That is, a person "self-discovers" their identity through the examination of alternatives that best fits with his or her "true self". This theory of exploration is reflective of Waterman's (1992) personal expressiveness construct, which is an extension of Marcia's status paradigm. Essentially, personal expressiveness entails an "intense form of subjective experience" that is experienced when individuals are exploring and engaged in activities that they feel are self-defining and, subsequently, make them feel complete and fulfilled (Waterman et al., 2003).

As mentioned, self-construction and self-discovery are overlapping processes. Moreover, the authors concluded that both should be utilized when encouraging youth to engage in the crucial period(s) of identity exploration (Schwartz et al., 2005). In my study, therefore, I included measures that captured both exploration processes. Items that assessed *environmental* exploration, for example, focused on the decisions made about externally presented alternatives and were therefore representative of the self-construction exploration process. The *self-exploration* items, on the other hand, were reflective of the discovery of how one's values and beliefs are related to one's career interests. These items, therefore, represented the self-discovery exploration process.



### *Exploring the Dangers of Exploration*

Despite the importance of exploration in the development of one's identity, it should be of little surprise that exploration is associated with negative experiences. Such findings (e.g. Berman, Weems, & Petkus, 2006) merely support Erikson's claim that adolescents are confronting their identity crisis, which is characterized by emotional upheaval (Lerner, 2002). Marcia (1980), for example, described individuals in the exploratory moratorium status as being anxious and less cooperative with authorities than with their peers. Similarly, Berman et al. (2006) found that identity distress scores and psychological symptoms, such as depression and anxiety, significantly correlated positively with exploration. Finally, Kidwell and Dunham (1995) reported that in their adolescent sample, exploration correlated positively with feelings of self-doubt, confusion and agitation, in addition to conflicts with parents, presence of physical symptoms, impulsivity, unhappiness and disturbed thinking. As a result of these findings, research examining identity development should acknowledge the stress associated with exploration and control for it, if necessary. In the present research, for example, moratorium (current exploration) scores will be partialled from analyses containing identity distress to uncover any distress associated with identity development over and above that accounted for by the exploration process.

Up to this point in my review, exploration has been defined and conceptualized as examining and sorting through numerous alternatives. Another form of exploration is intense exploration of *one* alternative. The following is a discussion of this distinction.





### *Breadth vs. Depth*

Luyckx and colleagues argued that Marcia's dimension of exploration might better be conceptualized as being composed of two components: breadth and depth (Luyckx, Goossens, Soenens & Beyers, 2006a). Exploration in breadth refers to "the gathering of information about different alternatives to guide the choices one makes" (Luyckx, Goossens, Soenens, Beyers & Vansteenkiste, 2005, p.606). This style of exploration is equivalent to Marcia's classical exploration dimension. It is exploration in depth, or "the gathering of information about current choices to guide the maintenance and evaluation of these choices" (p.606), which the authors suggested might warrant inclusion in a new model.

Through extensive testing of their model (see Luyckx et al., 2006a for a review), the researchers confirmed the existence of two types of identity exploration and, in addition, found that although interrelated, they appear to be serving different purposes. Exploration in breadth correlated positively with indices of adjustment difficulties (e.g. depressive symptoms, substance use), and negatively to commitment making. Thus, the authors concluded that exploration in breadth may be indicative of a period of identity crisis - a period that precedes commitment. Exploration in depth, on the other hand, was positively correlated with commitment making, identification with commitment and academic adjustment, and negatively correlated with substance use. Thus, the authors concluded that exploration in depth might be the exploration style of choice when individuals are strengthening and evaluating their commitments.

This research is still in its infancy. However, the results suggest a very promising and exciting way of conceptualizing exploration. Consequently, to test my proposed





### *Breadth vs. Depth*

Luyckx and colleagues argued that Marcia's dimension of exploration might better be conceptualized as being composed of two components: breadth and depth (Luyckx, Goossens, Soenens & Beyers, 2006a). Exploration in breadth refers to "the gathering of information about different alternatives to guide the choices one makes" (Luyckx, Goossens, Soenens, Beyers & Vansteenkiste, 2005, p.606). This style of exploration is equivalent to Marcia's classical exploration dimension. It is exploration in depth, or "the gathering of information about current choices to guide the maintenance and evaluation of these choices" (p.606), which the authors suggested might warrant inclusion in a new model.

Through extensive testing of their model (see Luyckx et al., 2006a for a review), the researchers confirmed the existence of two types of identity exploration and, in addition, found that although interrelated, they appear to be serving different purposes. Exploration in breadth correlated positively with indices of adjustment difficulties (e.g. depressive symptoms, substance use), and negatively to commitment making. Thus, the authors concluded that exploration in breadth may be indicative of a period of identity crisis - a period that precedes commitment. Exploration in depth, on the other hand, was positively correlated with commitment making, identification with commitment and academic adjustment, and negatively correlated with substance use. Thus, the authors concluded that exploration in depth might be the exploration style of choice when individuals are strengthening and evaluating their commitments.

This research is still in its infancy. However, the results suggest a very promising and exciting way of conceptualizing exploration. Consequently, to test my proposed



model, I have included in my questionnaire measures of both exploration in depth and exploration in breadth.

Researching the tendency to engage in breadth and depth might help us better understand identity exploration processes and learn which styles are most helpful in identity development. However, it is likely that other factors of exploration merit investigation. For example, is exploration a solitary activity? Or, is it something that must take place within the presence of others? Do the answers to these questions depend on the *focus* of exploration, be it self or environmental? In the following section I will discuss this social versus non-social aspect of exploration.

#### *Does Exploration Necessarily Involve Social Interaction?*

As previously discussed, Adams (1998) conceptualized identity as embedded in a social context. Furthermore, part of developing a healthy identity is becoming *integrated* with those around you; that is, becoming connected with others in society. Adams, therefore, maintained that a healthy social identity is a central component of an overall healthy identity. However, is this necessarily true for identity *exploration*? Are social interaction and integration co-requisites for exploring one's values, beliefs, and goals?

There is little doubt that Cantor, Kimmelmeier, Basten, and Prentice (2002) would have answered affirmatively. These researchers argued that "personal well-being is contingent on the ability to successfully navigate the social environment by finding outlets for participation" (p.177). Moreover, a safe and secure social environment, they argued, is an essential antecedent for self-exploration and identity development.

Coatsworth et al. (2005), however, might not agree. Although the highest rates of self-defining activities (activities that represent the individual as a person and become a



part of their self-presentation) for participants in their multicultural study were sports and social activities, the researchers nevertheless argued that identity development can occur in a variety of structured and unstructured activities that individuals can do *alone or with others*. They maintained that the most important criteria is a “fit” between the person and context. This position is similar to Erikson’s (1968) views. Although he stressed the importance of finding social roles and niches, he nevertheless maintained that these roles must fit with one’s biological and psychological capacities and interests. Therefore, although the “end product” – an optimal identity – should include a social identity, the exploration that leads to the development of one’s identity could take place through engagement in solitary activities. Therefore, the argument can be made that self (and, as we will see, environmental) exploration is possible with little or no social interaction. A brief discussion follows of the Internet as one possible way in which exploration of *both* ideological and interpersonal identity domains can be accomplished without face-to-face interactions, or, as termed in my research, through non-social exploration.

#### *Virtual Self and Environmental Exploration*

A recent article by Valkenburg, Schouten and Peter (2005) began: “there is general consensus among researchers that the Internet can offer its users tremendous opportunities to experiment with their identities” (p.384). These researchers found that a highly cited reason for the engagement in Internet-based identity experiments, specifically, pretending to be somebody else, was for self-exploration. In addition, motives cited for using the Internet for identity experiments were that it facilitates social interaction (more so for younger adolescents than for older adolescents) and that it can be





used as a form of social compensation (reported by girls more than boys), such as by providing a medium that makes them feel less shy.

Thus, in addition to being a medium for self-exploration, the Internet might fulfill social needs and thus provide a sense of connectedness and belongingness for individuals who have difficulty establishing social relationships (Sheperd & Edelman, 2005).

Participants in Maczewski's (2002) study further the idea that the Internet can be used for self-exploration by explaining that virtual relationships offered them the opportunity to see and engage in multiple perspectives, engage in multiple interactions, and experience multiple ways of being.

The previous two studies showed that the Internet may be conceptualized as a vehicle for self-exploration, facilitating the examination of the "interior" such as values and beliefs. Given the vast amount of information accessible on the web, it should not be surprising that the Internet also can be utilized for environmental exploration (examining the "exterior" such as jobs and dating partners). Identity exploration of the occupational domain illustrates this point. For example, up-to-date job opportunities are posted on the Internet and are available for individuals to explore. Indeed, research is being conducted and programs are being developed with the specific aim of having people of all ages use the Internet as a meaningful career exploration tool (e.g. Refvem, Plante, & Osborne 2000; Robinson, Meyer, Prince, McLean & Richard, 2000). It ought to be noted that individuals are not limited to exploration of their ideological identities (occupation, religion, and politics) on the Internet. Research has shown that online dating allows individuals to explore their interpersonal identities (e.g. Yurchisin, Watchravesringkan & McCabe, 2005).





The aforementioned studies are just a few that exist in the extensive research examining the benefits of Internet usage, and they help illustrate the need to include this medium as a possible vehicle for identity exploration. However, although the Internet may enable individuals to explore their identities, is it able to replace the learning experiences that accompany face-to-face social interaction?

The following two adolescent quotes, extracted from Maczewski (2002), illustrate the possible inadequacy or incompleteness of the Internet for identity exploration: “. . .the Internet is cool but it’s not what you should experience to learn about life . . .”, and “. . . she was still isolated as she didn’t know the virtual people in person and that she couldn’t really experience anything because it was just ‘talk’” (p.121). Findings such as these suggest that the Internet be used for identity exploration but only as a way to supplement face-to-face social exploration. This may be satisfying for many, but what about individuals who have difficulty establishing social relationships or engaging in social interactions? If social exploration is indeed an integral part of identity exploration, how will this affect the development of their identity?

We now turn to a discussion of a personality trait (shyness) that likely would render social exploration difficult. I will begin with clarifications of terminology, the presentation of shyness statistics and a consideration of the consequences of shyness. Then, I will describe the small number of studies that have examined how identity exploration and development might be impeded for shy individuals, with special attention given to questions that remain unanswered.



## Shyness

Shyness has been defined as discomfort, inhibition, and awkwardness in social situations, particularly in situations with unfamiliar people (Buss, 1985). A three-component model has been proposed for shyness consisting of physiological, cognitive and behavioral features (Cheek, Melchior, & Carpentieri, 1986). More specifically, many (but not all) shy individuals report physical discomforts such as upset stomach, sweating and blushing while in social situations. Further, many shy individuals report self-deprecating thoughts and excessive concerns about being negatively evaluated by others (cognitive components). Finally, despite not necessarily lacking in social skills, many shy people believe that others think of them as being socially awkward, which, in turn, may affect their performance (behavioural component).

There is little doubt that most people have, at least once, experienced the feelings associated with shyness. Pilkonis (1977), for example, reported that over 80% of North Americans admitted to having been shy at some point in their lives. Of particular interest, however, is the large group of individuals who describe themselves as dispositionally shy. Hamer and Bruch (1997), for example, reported that between 30% and 40% of individuals label themselves as “shy persons” and, perhaps more shockingly, described their disposition as a lifelong hindrance. Furthermore, recent research suggests that these numbers are on the rise; the percentage of adults who label themselves as chronically shy has been escalating gradually and is now close to 50% (Henderson & Zimbardo, in press). This finding is not unique to adults, half of the adolescent participants in Ishiyama’s (1984) study rated themselves as “moderately shy” or “quite shy”. Recall that



this age group is of particular importance for the present study; adolescence, as well as emerging adulthood, are the periods most often associated with identity exploration.

### *Consequences of Shyness*

Loneliness, lessened social support, lower quality of both same-sex and opposite-sex relationships, negative perceptions of social and athletic competence, and interference with academic success have been some of the negative experiences reported by individuals who are shy (Ishiyama, 1984; Rubin, 1993; Summerfeldt, Kloosterman, Antony, & Parker, 2006). Furthermore, shy individuals often suffer from lower self-esteem than non-shy individuals as can be evidenced by the finding that shyness was negatively correlated with five measures of self-evaluation: self-regard, academic ability, physical appearance, physical ability, and vocational certainty (Cheek et al., 1986). This negative correlation between shyness and self-esteem, however, has not always been supported (e.g. Ishiyama, 1984). Mixed results have also been found for how others view shy individuals. Rubin (1993), for example, found that socially withdrawn early adolescents were disliked by their peers, whereas Ishiyama (1984) found no group differences between shy and non-shy adolescents in being liked by others.

In addition to differences in self-perception and peer regard, shy and non-shy individuals also differ with respect to their cognitions and behaviours while engaged in social interaction. For example, the observed behaviours of self-reported shy individuals in dyadic interactions with a stranger (Phillips & Bruch, 1988) have shown fewer initiations of discussions, less self-disclosure, greater gaze aversions and longer speech latencies than behaviours of non-shy individuals. Furthermore, shy individuals reported having loss of concentration, speech problems, and self-punitive self-talk during social





interactions (Ishiyama, 1984). Such social skill deficits and low verbal fluency skills have been linked to vocational difficulties, such as interview difficulties and earning less income, for shy individuals (Henderson & Zimbardo, in press). Taken together, therefore, these findings paint a worrisome picture for shy individuals' identity development in a world where socialization is the process by which individuals become both integrated with others and develop a sense of individuation (Adams & Marshall, 1996).

Evidence for this strong proclamation comes from a report written by Harris (1984), which described the subjective experiences of individuals who "suffer" from shyness. The word "suffer" aptly describes the feelings these individuals had towards their shyness; other expressions they used to describe their shyness were "problem" and "handicap". Some even considered themselves "victims" to the "terrible affliction" or "curse" of shyness. Although these statements do not imply that *all* shy people feel so negatively about their shyness, they nevertheless encourage further investigation into the potential harmful effects that shyness may have on late adolescents' and emerging adults' developing identities. A quote from this article captures this concern of identity distress:

At the heart of the frustration that shyness brings lies a discrepancy between the sorts of lives the correspondents would like to lead, and the lives that they actually do lead, a discrepancy emphasized by the apparent ease with which most of those around them manage to achieve these desired aims (Harris, 1984, p.1087).

### *Shyness and Identity*

Two studies lend support to the theory that shyness may impede the development of an optimal identity. The first of these studies was a thirty-year longitudinal study (Caspi, Bem, & Elder, 1988). Children identified as shy and reserved by their mothers and teachers were followed into their early adult years, with particular attention given to





the transitional years from youth to adulthood (now termed emerging adulthood; Arnett, 2000). It is during this period, the authors argued, that individuals face changing roles and relationships. In order to establish the necessary social contacts and actions required for forming adult roles, individuals must approach various types of novelty. Given that shy individuals may be particularly disadvantaged in novel situations, the authors hypothesized that they would experience difficulties during this phase of life. Their theory was partially supported. Compared to their non-shy counterparts, men who were shy as children were delayed in getting married, becoming fathers, and entering stable careers. Shy women, on the other hand, did not differ from their non-shy counterparts in age of marriage or motherhood. They did, however, tend to follow a more “traditional” homemaking pattern; either they never worked outside the home or were much more likely than non-shy woman to cease working once they had their children. Although some researchers might not view these outcomes as problematic (e.g. Henderson & Zimbardo, in press), contemporary identity researchers would likely argue that these women are foreclosed. Recall that foreclosure, characterized by commitment with no prior exploration, is considered to be a passive identity based on imitation and therefore these women would not have achieved an optimal identity based on active self-construction (Adams & Marshall, 1996).

The second study that lends support to the theory that shy individuals may experience difficulty developing a healthy identity is that of Hamer and Bruch (1994). These researchers argued that if the social behavior of shy individuals is as limited as theory would suggest, then we would expect these individuals to engage in little or no exploration. In support of their argument, for example, Henderson and Zimbardo (in



press) explained that shy individuals develop coping strategies, such as avoidance or minimal involvement, in social situations where they expect others to criticize or reject them. Identity exploration would likely be included in such situations, therefore, Hamer and Bruch (1994) hypothesized that shyness would be correlated positively with identity diffusion. A positive correlation was not hypothesized with foreclosure, however, as it was argued that various characteristics associated with shyness, such as low self-esteem, are incompatible with a strong sense of commitment that is characteristic of foreclosure. The researchers, therefore, predicted no relationship between shyness and foreclosure. Hypotheses were partially supported. They found that shyness did indeed have a significant positive relationship to identity diffusion, a negative relationship to identity achievement, and no relationship to identity foreclosure. Contrary to their hypotheses, however, was the finding of a positive correlation between shyness and moratorium (high exploration, no commitment) status. The authors explained this somewhat contradictory finding as being the result of psychometric difficulties with the identity measure. Indeed, it has been documented that this particular measure (EOMEIS-2) does not sharply differentiate between the diffusion and moratorium statuses (Adams, 1998).

In the present study, I stated the same hypotheses as Hamer and Bruch (1994) to examine whether their results are replicable. In keeping with the focus on the career domain, however, I chose to use a measure of identity that is specific to the exploration and commitment of occupations. Furthermore, a change in measure had the added benefit of measuring moratorium without the psychometric difficulties of the aforementioned scale. **I hypothesized that shyness would positively predict Diffusion, negatively predict Achievement and Moratorium, and not predict Foreclosure scores.**



Although Hamer and Bruch's (1994) study found important relationships between shyness and the identity statuses, little is known about how shy individuals *feel* about their current identity. As previously discussed, many individuals describe their shyness as a "curse" or "handicap" (Harris, 1984). It seems quite probable that these feelings of stress would translate to feelings associated with the developing self. Therefore, in addition to the hypotheses stated above, I was interested in taking a closer look at the relationship between shyness and identity *distress*. As such, I included a measure of identity distress in the present study, **predicting that career identity distress would correlate positively with shyness.**

Furthermore, although I predicted that shyness would be positively correlated with diffusion, I agree with Archer and Waterman's (1990) view that individuals might differ with respect to their motivations underlying diffusion and the ways in which they choose to express it. This idea might be stretched to predict that if individuals' motivations differ, then perhaps they also *feel* differently about their diffuse status. For example, the lack of exploration characteristic of the diffusion phase is often thought of as resulting from an "I'm not interested attitude". This might be typical of first-year undergraduates. However, shy individuals may not have the "I'm not interested" feeling but instead might feel "I can't" with respect to exploration. This is supported by the finding that shy individuals often have an issue with their self-confidence and report thinking highly negative thoughts such as "I won't do well" and "I can't do this" (Glass & Shea, 1986, p. 316). If shy diffused individuals do indeed feel as though "they can't" with respect to exploration, they may feel more distressed about their current career identity than their less shy diffused counterparts. Therefore, in the present study I





**predicted that the relationship between identity diffusion and identity distress would be moderated by shyness. More specifically, I expected that high shy/high diffuse participants would report more career identity distress than low shy/high diffuse participants.**

### *Shyness and Identity Exploration*

The findings from the above studies suggest that shy individuals might have difficulty establishing a healthy identity. Moreover, Hamer and Bruch (1994) identified identity exploration as a particular source of difficulty. Given the documented importance of identity exploration and development (e.g. Cantor et al., 2002; Lerner, 2002; Serafini & Adams, 2002), it is necessary to consider the ways in which shy individuals may overcome their anxieties to embark on the path of self-discovery. Recall that much of the literature pertaining to exploration has focused on social forms of exploration (e.g. Coatsworth et al., 2005). As has been discussed above, it is precisely these types of novel social situations that shy individuals find the most challenging. How then do they ever discover “who they really are”? Perhaps shy individuals reduce the anxiety associated with exploration by engaging in non-social forms of exploration and/or by seeking friends to accompany them during their exploration tasks.

Prior to examining these possibilities in more detail, however, it is important to uncover some of the more general subjective beliefs that shy individuals hold in regard to their exploration. With no prior research on which to develop hypotheses, the following three research questions were developed and examined: **Is there a negative relationship between shyness and satisfaction with amount of career exploration engaged in to-date? Does shyness predict the reasons that emerging adults give for doing less**





**career exploration than they would like to do? Does shyness predict which method of exploration is judged as being the most likely to result in successfully obtaining career goals?**

The responses to the above research questions will provide a nice picture of how shy individuals *feel* with respect to their career exploration. Next, I turn to a more detailed examination of the exploration process and conclude this section with a number of research questions and predictions aimed at uncovering which methods of exploration shy individuals are actually *engaging* in.

#### *Social vs. Non-Social Exploration*

The present study may be conceptualized as an extension and elaboration of the ideas originally put forth by Hamer and Bruch (1994). Although they found a relationship between shyness and identity diffusion, they noted that future research is needed to uncover precisely which types of exploration shy individuals find difficult. They suggested that various modes of identity exploration may exist. Therefore the question remains: which methods of identity exploration are best suited for and are most successful for shy individuals?

Hamer and Bruch's (1997) study examined some of these questions in relation to the career exploration of shy individuals. They recognized that developing an occupational identity involves engaging in two forms of exploration: self and environmental. Their hypothesis was that shyness would have a negative relation to both types of exploration. Their reasoning was that self-exploration would arouse negative affect in shy individuals, as a result of their self-concept deficiencies. Therefore, these exploration activities would be avoided. Environmental exploration, on the other hand,



would be restricted as a result of both cognitive and behavioral aspects of shyness. However, these hypotheses were not supported; there was no relationship between shyness and engagement in self or environment exploration. The authors suggested that perhaps this finding was attributable to the fact that exploration may be accomplished using both social and nonsocial methods. Perhaps, therefore, shy individuals are more likely to engage in nonsocial forms of exploration, a theory that the ambiguous items in their measures were unable to capture. For example, an exploration item such as “obtained information on specific jobs or companies” could be interpreted as social (e.g. by attending a career workshop), or as non-social (e.g. by searching the Internet) exploration. If a clear distinction had been made between social and non-social exploration, differences may have emerged between the shy and non-shy groups. These ideas, though highly plausible, have yet to be investigated further.

In the present study, I will explore these possibilities. Consistent with Hamer and Bruch’s (1997) *results*, **I predicted that shyness will be uncorrelated with frequency of total exploration.** Total exploration refers to engagement in nonsocial *and* social exploration methods. Next, as suggested by the researchers, I have divided exploration into two subtypes: social and nonsocial. Based on their results and suggestions, I have made the following two predictions: **shyness will be uncorrelated with frequency of non-social exploration and shyness will be negatively correlated with frequency of social exploration.** Finally, social exploration was divided into self and environmental exploration. The following research question was examined: **Does the negative relationship expected between shyness and social exploration hold true for both social self *and* social environmental exploration?**



The above review and research questions should make it clear that career exploration can take place socially or non-socially. These methods of exploration can be utilized when an individual is exploring just one, or a number of career alternatives simultaneously. These approaches to exploration, termed depth and breadth respectively, were introduced in an earlier section. They have been included in my research as additional exploration variables of interest. More specifically, the following research question was examined: **is there a relationship between shyness and tendency to explore in either breadth or depth?**

Thus far in the review it has been argued that shy individuals might engage in more frequently, and benefit from, nonsocial exploration as opposed to social forms. This is not to say, however, that they are unable to or should avoid engagement in social exploration. Despite the potential for such forms of exploration to be anxiety provoking for shy individuals, there might be ways to reduce such feelings of anxiety. Seeking the support of a friend during these exploration activities, for example, could be helpful.

### *Social Support*

Bradshaw (1998) termed a friend who reduces the anxiety of shy individuals in social situations a “social surrogate”. He hypothesized that high shy individuals would report *recruiting* persons to accompany them in anxiety-provoking situations, *utilize* their social surrogate by having them engage and take initiative in the majority of interactions, and, finally, that the presence of their social surrogate would reduce their anxiety. Thus, the shy individuals would report an increase in participation in these social situations (*performance increase*). As Bradshaw noted, the forms of assistance the social surrogate







offers may vary from simply accompanying the shy individual, to acting as a facilitator of interactions, to engaging in the interaction in place of the shy person.

Characteristics of the individual and the situation, undoubtedly, influence the extent to which social surrogates are recruited and utilized. Results of Bradshaw's (1998) study largely supported his hypotheses. Of particular interest is the finding that shy persons were likely to report "conditional entry" – that is, they were less likely to enter the anxiety-provoking situation if they were unable to recruit a social surrogate. Thus, these results highlight the importance of social surrogates (social support) for shy individuals and the need for them to be included in theoretical models of exploration. In the present study, therefore, **I predicted that social support would moderate the negative correlation between shyness and frequency of social exploration. More specifically, it was expected that shy participants reporting social support would engage in more social exploration than shy participants without such support but that there would be no relationship between level of social support and level of social exploration for low shy individuals.**

The preceding hypothesis predicted that social support might act as a moderating variable between shyness and social exploration. However, do shy individuals require *external* support to increase their frequency of exploration? Could there be characteristics *within* the individual that would increase the likelihood of social exploration? One possibility could be their level of sociability.

#### *The Moderating Role of Sociability?*

Unlike shyness, which refers to feelings of discomfort or inhibition when with others (Cheek & Buss, 1981), low sociability is typified by a nonfearful preference for



being alone rather than being with others (Hamer & Bruch, 1997). Although shyness and sociability are correlated, they are only moderately so,  $r = -.30$ . This finding prompted Cheek and Buss (1981) to question whether level of sociability affected shy persons' social behaviour. The need to be with others characteristic of sociability in combination with the high emotionality and fearfulness of shyness, they predicted, would result in high shy/high sociable individuals experiencing difficulty in social situations. Their hypotheses were supported; shy-sociable individuals engaged in more anxiety-suggestive behaviours such as talking less, averting their gaze more, and touching their face and body more frequently than shy non-sociable individuals.

Cheek and Buss' (1981) results suggested that being high on sociability might impinge on shy individuals' social behavior. However, the relationship between the two personality dimensions might be more complex. In their discussion of attachment styles, Duggan and Brennan (1994) suggested that high sociable shy individuals are drawn to people for the rewards they offer. They are therefore more likely to interact with others than low sociable-shy individuals. The results from another study, on the other hand, did not support either theory; shyness was the best predictor of dysfunctional interactions regardless of one's level of sociability (Bruch, Gorsky, Collins, & Berger, 1989).

Perhaps as a result of the seemingly complex relationship between the two personality dimensions, many studies in the field of shyness research continue to include sociability as a possible moderating variable (e.g. Arkin & Grove, 1990; Santesso, Schmidt, & Fox, 2004) when investigating the relationship between shyness and various outcome measures. In the present study I will continue this tradition by **predicting that the correlations between shyness and level of social exploration would differ**



according to degree of sociability. More specifically, high sociable/high shy individuals were expected to engage in more social exploration than low sociable/high shy individuals.

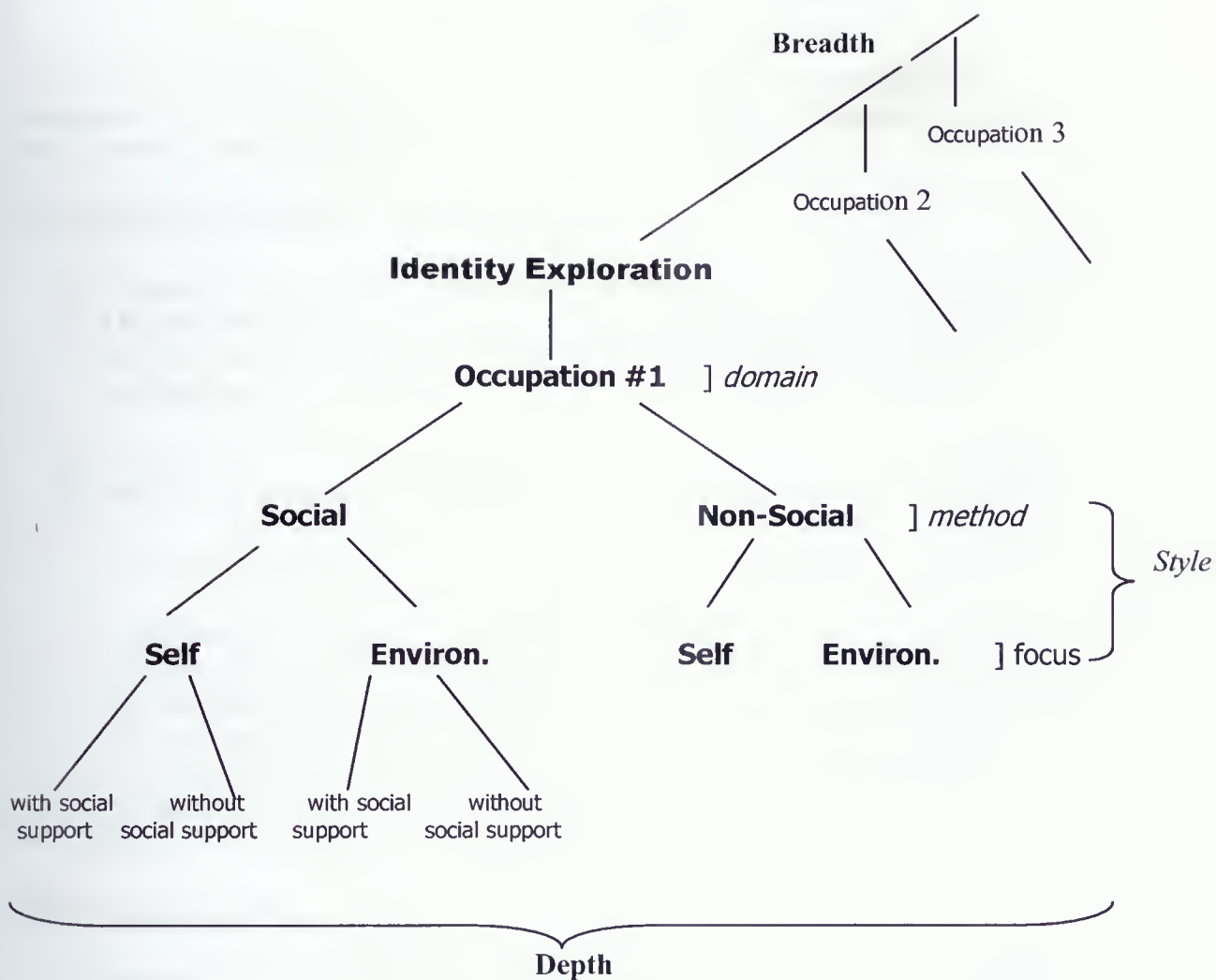
#### Need for an Integrative Model

Throughout the introduction, a large amount of information was presented regarding the identity exploration process. This information will be briefly reviewed and an organizational framework then will be introduced.

First, it is important to distinguish between *depth* and *breadth* of exploration. Depth refers to the detailed exploration of one career in the present research and breadth refers to multiple career searchers. Each type of exploration can be done either by *social* (involving interactions with others) or *non-social* (solitary) activities. Third, these methods of exploration can be subdivided into specific foci: *self* (the “internal” such as goals and values) or *environmental* (the “external” such as job opportunities). Finally, engagement in social exploration can occur either “*by oneself*” or with “*support*”.

In an attempt to organize these various mechanisms of exploration, an *Exploration Tree* was developed (Figure 1). The purpose of this tree is to display how the various aspects of exploration might be pieced together to form an integrative whole. The hypotheses and research questions of this thesis involve examining the branches of this tree in more detail and, in addition, examining the role of shyness in the exploration process. A summary of these hypotheses and questions are presented following the presentation of Figure 1.





*Figure 1.* The exploration tree.  
Environ. = Environmental





## Summary of Hypotheses

*Note: the lack of previous research and theory made it difficult to make directional predictions on several issues described below. In these cases, the issues were explored as exploratory research questions.*

### *Shyness and Identity Development*

- 1) Shyness was expected to predict occupational identity status scores. Specifically, I hypothesized that shyness (“not shy” to “extremely shy”) would positively predict Diffusion, negatively predict Achievement and Moratorium and not predict Foreclosure scores.
- 2) Shy individuals were predicted to feel more distressed with their identity status than their less shy peers. In particular,
  - (a) Career identity distress was expected to correlate positively with shyness.
  - (b) Identity distress scores were expected to be predicted by an interaction between shyness and diffusion scores. More specifically, high shy/high diffuse participants were expected to report more career identity distress than low shy/high diffuse participants. No differences on level of identity distress were expected between low diffuse/high shy and low diffuse/low shy participants.

### *Shyness and Subjective Feelings Towards Identity Exploration*

- 3) Shyness may be related to subjective feelings and beliefs in relation to identity exploration. Specific questions include the following:
  - (a) Is there a negative relationship between shyness and satisfaction with amount of career exploration engaged in to-date?
  - (b) Does shyness predict the specific reasons that emerging adults gave for doing less career exploration than they would like to do?
  - (c) Does shyness predict which method of exploration was judged as being the most likely to result in successfully obtaining career goals?

### *The Exploration Tree*

- 4) (a) Shyness was expected to be uncorrelated with frequency of *total* exploration.



Total exploration was divided into *social* and *non-social* exploration. Specific hypotheses follow:

- (b) Shyness would be uncorrelated with frequency of non-social exploration.
- (c) Shyness would be negatively correlated with frequency of social exploration.

Social exploration was divided into social *self-exploration* and social *environmental* exploration. The following research question was examined:

- (d) Is shyness negatively correlated with both social self *and* social environmental exploration?
- 5) Shyness may be related to breadth and depth dimensions of identity exploration. Specific questions include the following:
- (a) Is there a relationship between shyness and tendency to explore in *depth*?
  - (b) Is there a relationship between shyness and tendency to explore in *breadth*?
- 6) It was predicted that social support would moderate the negative correlation between shyness and frequency of social exploration. More specifically, it was expected that shy participants reporting social support would engage in more social exploration than shy participants without such support.

#### *Moderating Variable of Exploration*

- 7) Individual characteristics might moderate the relation between shyness and social forms of exploration (self and environment).

The correlations between shyness and level of social exploration were expected to differ according to degree of sociability. More specifically, high sociable/high shy individuals were expected to engage in more social exploration than low sociable/high shy individuals.



## METHOD

### Procedure

#### *Recruitment*

Clearance from Brock University's Research Ethics Board was obtained prior to recruitment (see Appendix A). After receiving permission from instructors, overheads announcing the study were shown in first- and second-year psychology classes in October 2006. In addition, the study was advertised and instructions for completion were detailed on the Brock University Psychology Department webpage, using a web-based experimental management software program (SONA). Finally, posters advertising the study were placed on bulletin boards located throughout the University. Participation in the study could be exchanged for research participation bonus marks, if applicable. Recruitment continued until February 2007. Online and paper methods of administration were available to participants and are described below.

#### *Online Method*

The majority of participants (80.9%) completed the questionnaire online. This procedure was selected to attract a large number of participants and increase the likelihood of recruiting shy individuals. Furthermore, given that the questionnaire was relatively lengthy (taking approximately an hour to complete), this on-line procedure offered participants the choice of either completing the questionnaire in one sitting or partially completing the questionnaire and returning at a later time to fill in the remainder.

The appropriate web-link for the questionnaire was provided during the recruitment phase and also was listed on SONA and posters. The first page of the website included a brief introduction to the study and the informed consent form. Participants also





were asked to fill in their name and, if appropriate, check the box indicating that they were completing this survey for research participation marks. Consent was obtained by the participants checking a box that says “Yes, I agree with the above information and consent to participate”. Only after this box had been checked were participants able to move to the next page. Please refer to Appendix B for the complete list of instructions provided to participants prior to and upon completion of the online survey.

### *Paper Method*

Approximately half-way through data collection, the survey website experienced technical difficulties for an extended period. As I worked with the programmer and the university’s web development group to fix the problem, clearance was obtained from the ethics committee (see Appendix C) to begin data collection using a take-home paper version of the survey. Slight modifications were made to the consent form, instructions, and formatting of the survey to accommodate this change in method.

Participants were instructed to pick up a study packet from a box outside my office. Included in the packet were the survey, a consent form to be signed and returned, and a feedback letter on the final page. The student returned the sealed survey packet and, if applicable, received a signed consent form that could be used in exchange for course research credit.

Prior to data analysis, I checked for effects of method of administration. More specifically, independent t-tests were calculated with method as the grouping variable for each independent and dependent variable described in the hypotheses, in addition to the demographic variables shown in Table 1. Only the t-test for university year was significant ( $t(255) = 2.32, p = .021$ ). More specifically, higher university-level



Table 1. *Demographic Characteristics of Participants*

Variable	<i>n</i>	% Web      Hard Copy      Total		
Gender				
Male	29	10.6	14.3	11.3
Female	228	89.4	85.7	88.7
University Year				
1	134	47.1	73.5	52.1
2	51	23.6	4.1	19.8
3	38	14.9	14.3	14.8
4	31	13.0	8.2	12.1
5	3	1.4	0.0	1.2
Ethnicity/Cultural Affiliation				
North American	169	67.1	61.2	65.8
Aboriginal	1	0.5	0.0	0.4
British Isles	15	6.3	4.1	5.8
French	5	1.9	2.0	1.9
European	39	16.4	10.2	15.2
Arab	1	0.5	2.0	0.4
South Asian	1	2.4	0.0	0.4
East and Southeast Asian	7	1.0	4.1	2.7
African	4	1.0	4.1	1.6
Latin, Central, and South American	2	0.5	0.0	0.8
Caribbean	2	0.5	2.0	0.8
Other	5	2.4	0.0	1.9
Multiple	5	0.0	10.2	1.9
Missing	1	0.5	0.0	0.4
Mother's Level of Education				
Not Applicable	2	1.0	0.0	0.8
Did not finish high school	16	6.7	4.1	6.2
Finished high school	72	29.3	22.4	28.0
Some college or university	42	15.4	20.4	16.3
Finished college or university	95	36.1	40.8	37.0
Finished graduate degree	30	11.5	12.2	11.7



participants were more likely to take the survey online than their lower university-level counterparts. However, as university level was not used in any analyses, there was no need to control for method of administration.

### *Participants*

Participants were 257 emerging adult undergraduate university students, ranging in age from 17 to 25 years ( $M = 19.9$ ,  $SD = 1.812$ ). The demographic characteristics of the participants are described further in Table 1. There are a number of characteristics of the sample that should be noted. First, a large majority of the participants were young women. Second, although an introductory psychology class was the main research pool for this study, only slightly more than half of the participants reported being first-year students. Third, only a small percentage reported a visible minority affiliation. Finally, there was a range of maternal education levels, although the majority of the participants reported that their mothers completed at least some college or university.

### *Measures*

The measures in the present study were part of a larger study of shyness and adjustment in emerging adulthood. In addition to those listed below, assessments of attachment, openness to experience, social anxiety, and fear of negative evaluation were included in the survey packet. A summary of measures is presented in Table 2 and copies of all measures can be found in Appendix D. All constructs were assessed using two orders of questionnaires to allow assessment of order effects. Temperament and identity scales, for example, were counterbalanced with scales assessing exploratory styles. Survey order A was as follows: Demographics, Career questions, Shyness, Identity,



Table 2. *Summary of Measures*

Construct Measured	Measure	Scale and Scoring
Shyness (e.g. discomfort in social situations)	The Revised Cheek & Buss Shyness Scale (Cheek, 1983)	0-4 rating scale Averaged score of 13 items
Occupational Identity (continuous scores on each of four identity statuses)	Occupational Identity Scale (Melgosa, 1987)	1-5 rating scale 28 items Averaged score on each of 4 subscales
Identity Distress (e.g. worrying over identity-related issues)	Identity Distress Survey (IDS) (Berman, Montgomery & Kurtines, 2004)	1-5 rating scale 10 items (focused on occupational distress scores)
Exploration in Breadth (gathering of information about different career options)	Ideological exploration subscale from EIPQ (adapted from Balistreri, Busch-Rossnagel & Geisinger, 1995)	1-6 rating scale Averaged score of 4 items
Exploration in Depth (amount of information gathered for one career of interest)	U-GIDS (adapted from Meeus & Dekovic, 1995)	1-5 rating scale Averaged score of 5 items
(a) social & non-social exploration methods (b) intended exploration (c) internal/external search instrumentality (two questions)	Various subscales (modified) from Career Exploration Survey (adapted from Stumpf, Colarelli, & Harman, 1983)	1-5 rating scale (a) 18 items (b) 6 items (c) 14 items; rank order Averaged score of respective subscales
(a) Exploration activities (b) Satisfaction with exploration (c) Breadth/Depth single item	Author Constructed	(a) 1-5 rating scale (b) 1-6 rating scale, check-list (c) 1-5 rating scale
Sociability (tendency to affiliate with others)	Cheek & Buss Sociability Scale (Cheek & Buss, 1981)	0-4 rating scale Averaged score of 5 items





Exploration Styles, and Identity distress. Survey order B was Demographics, Identity, Identity distress, Exploration Styles, Shyness, and Career questions. Furthermore, the survey orders differed in the order of the Exploration Styles measures. Independent samples t-tests were conducted to check for potential order effects. Of the 19 analyses run, there were three significant results suggesting order effects: achievement ( $t(255) = 2.079, p = .039$ ), breadth of exploration ( $t(254) = 3.524, p = .001$ ), and non-social self exploration ( $t(254) = 2.373, p = .018$ ). Order was controlled in analyses that included these variables.

Average scores for each measure were calculated from each participant's total score so that any missing data that were present were eliminated. Scores were calculated only if participants were missing no more than one or two items per scale (number varied depending on length of scale). There was only a very small percentage of missing data overall (described in results section); therefore this was considered to be an acceptable and effective way to handle the missing data (Tabachnick & Fidell, 2001).

### *Demographic Information*

Participants were asked to indicate their age, gender, university year, mother's level of education, parents' occupation, and ethnic group(s) with which they identify. Participants who completed the online questionnaire had to choose only one ethnic affiliation. The majority of paper participants also indicated only one affiliation, although a category entitled "Multiple" was created to encompass participants who reported two or more ethnic affiliations. Of the five participants who listed multiple affiliations, two participants repeated a combination of South American and European affiliations, one participant listed North American and European, one participant listed



British and French, and the final participant listed French, European, African, Caribbean, and Arab affiliations.

In addition, participants were asked the following questions to assess their history of career exploration. First, they were asked to indicate whether, in high school, they had taken a career studies course and, if so, how many years ago this was. Two hundred and five participants (79.8%) indicated having taken such a course on average 1.37 years ago ( $SD = 1.33$ , range 0 to 8). Second, participants were asked to indicate whether they had received any other form of career counselling, such as with career services at University. Approximately one-third of participants (34.6%) indicated that they had received career counselling. Additional general career questions included “what would you like to be when you grow up”, “how long have you felt this way”, “how confident are you with this career choice” and “how important is it for you to establish a career of interest”, and “to develop the career domain of your identity”. Participants listed a variety of career aspirations and data for the remaining questions can be seen in Table 3.

Table 3. *Means and Standard Deviations for General Career Questions*

Scale		Mean - years		
		Web	Hard Copy	Total
Length of Career Aspiration	0 to 25 years (range)	5.21 (4.47)	4.41* (3.14)	5.07* (4.28)
Confidence in Career Aspirations	1 to 3	2.48 (0.59)	2.55 (0.65)	2.50 (0.60)
Importance of Establishing Career of Interest	1 to 4	3.42 (0.78)	3.59 (0.57)	3.45 (0.75)
Importance of developing career domain of identity	1 to 4	3.13 (0.80)	3.29 (0.71)	3.16 (0.79)

*Note.* Standard deviations in brackets.

\*may be slightly lower than actual mean as 6 participants were excluded for responses such as “always” and “forever”



It is notable that, despite approximately half the participants being first year students, they reported being overall very confident with their career choice.

Furthermore, not surprisingly, most participants reported that establishing their careers is very important at that point in their lives.

### *Shyness*

The 13-item Revised Cheek and Buss Shyness Scale (CBSS-R; Cheek, 1983) was used to assess shyness, defined as one's discomfort and inhibition in social situations. Participants were asked to rate the items (e.g. *"I feel inhibited in social situations"*) according to how characteristic they are of their feelings and behaviours on a scale that ranged from 0 (extremely uncharacteristic) to 4 (extremely characteristic). Scoring on the scale involved reversing the score on four items and summing across all items. An average score was calculated from each participant's total score. Any participant missing more than two responses would have been dropped from further analyses involving this variable; however, no participant met this criterion.

This scale has been reported to have acceptable internal consistency (Cronbach's  $\alpha = .82$ ) and a mean inter-item correlation of .26 (range .10 to .61) (Bruch, et al., 1989). Various researchers who have explored the factor structure of this scale have found a single factor for shyness (Bruch et al., 1989; Cheek & Buss, 1981). Scores in the present study indicated good internal consistency ( $\alpha = .86$ ) and ranged from 0 to 3.62. The sample mean for shyness was 1.57 ( $SD = .673$ ). In addition, the CBBS-R has been reported to have good 90-day test-retest reliability with college students ( $r = .74$ ) (Bruch, et al., 1989).





## *Identity Measures*

### *Occupational Identity*

Occupational identity status was measured with Melgosa's (1987) Occupational Identity Scale (OIS). Based on the writings of Erikson and Marcia, Melgosa constructed a scale similar to Adams, Shea and Fitch's (1979) widely used Objective Measure of Ego Identity Status scale (OM-EIS). Unlike the OM-EIS, however, the OIS provides a measure of the occupational domain without confounding information from other identity domains. Participants were asked to rate 28 statements regarding their occupational plans (e.g. *"After many doubts and considerations, I have it clearly in my mind what my occupation will be"*) on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Continuous scores for each of Marcia's identity statuses may be calculated by summing the appropriate items. Achievement is measured using items # 3, 5, 20, 22, 23, 25, 27; Moratorium is items # 1, 2, 6, 9, 10, 12, 17, 21; Foreclosure is items # 4, 8, 13, 15, 18, 24, 26; and Diffusion is items # 7, 11, 14, 16, 19, 28.

Concurrent validity of the OIS was obtained through its correlation with the occupational domain of the OM-EIS (Adams et al., 1979). Correlations between the two instruments were .79 for achievement, .68 for moratorium, .38 for foreclosure, and .43 for diffusion. Although the latter two correlations were fairly low, the OM-EIS contains only two items per status making it difficult to achieve high correlations.

Melgosa (1987) reported moderate internal consistency for each subscale of the OIS (Cronbach's  $\alpha$  ranged from .70 to .87). Similar results were found by Berrios-Allison (2005). Scores for the present study's internal consistency, range, means, and standard



deviations for each subscale are reported in Table 4. As can be seen, each subscale of the OIS demonstrated acceptable internal consistency and range of scores.

Table 4. *Scale Properties for the Occupational Identity Scale*

	Cronbach's $\alpha$	Range	Sample Mean	SD
Achievement	.86	1.00 – 5.00	2.98	.87
Moratorium	.89	1.00 – 4.88	2.88	.98
Foreclosure	.74	1.00 – 4.43	2.11	.66
Diffusion	.78	1.00 – 4.33	2.04	.67

### *Identity Distress*

The 10-item Identity Distress Survey (IDS) was modeled after the *DSM-III-R* categorization of Identity Disorder (Berman, Montgomery, & Kurtines, 2004). Seven items ask to what degree the participant has recently been upset, distressed, or worried over identity-related issues (e.g., long-term goals), rated on a 5-point scale (1 = not at all, 5 = very severely). Two general questions follow. Participants are asked to rate on the same 5-point scale how much the issues raised in the previous seven questions, taken together, have caused them *discomfort* and *life interference*. Finally, one question asks about the duration of distress over these issues (1 = never or less than a month, 5 = more than 12 months).

Specific criteria must be met to be classified as having an Identity Disorder (see Berman et al., 2004). However, in keeping with the theme of the present research, I have only examined the single item that assessed distress related specifically to career choice.

As expected and consistent for this measure (Berman et al., 2004), in the present study the career distress item correlated positively with moratorium scores ( $r(257) = .551$ ,



$p < .01$ ) and negatively with achievement scores ( $r(257) = -.148, p = .02$ ). Good range was shown for this variable (1.00 – 5.00) and the sample mean was 2.90 ( $SD = 1.18$ ).

*Measures of Exploration – [as displayed on the “exploration tree” (Fig 1)]*

#### *Exploration in Breadth*

Slightly modified ideological exploration items from the EIPQ were used to assess exploration in breadth (Balistreri, Busch-Rossnagel & Geisinger, 1995). The original scale assessed ideological exploration of occupational, political, religious, and value domains, whereas the present study focused on career exploration. Thus, the two occupational items were retained; however, occupation was replaced with the word “career” to remain consistent with wording in other measures. In addition, two other ideological items were reworded to assess career exploration. The final measure therefore contained four career exploration items (e.g. “*I have considered pursuing different kinds of careers*”); it was decided that additional items would render the scale unnecessarily repetitive. Participants were asked to rate the four items on a scale that ranged from 1 (strongly disagree) to 6 (strongly agree). One of the exploration items was reverse scored. The values for each item were averaged.

Given that the above measure contained only four items and that the internal reliability of the newly worded items is unknown, I created the following question as a check of validity: “*When attempting to determine which career would suit me best, I tend to investigate various career possibilities, examining **numerous alternatives simultaneously***”. This question assesses exploration in breadth and thus should have a strong correlation with the above items. Participants were asked to rate this item on a 5-





point scale (1 = strongly disagree, 5 = strongly agree). The placement of this item in the questionnaire booklet was separate from the above measure.

The 4-item breadth scale had moderate internal consistency (Cronbach's  $\alpha = .73$ ) and a good range (1.00 – 5.00). The sample mean of the scale was 3.41 ( $SD = .836$ ). Removal of the reverse coded item slightly improved the scale's internal consistency (Cronbach's  $\alpha = .76$ ), thus this item was eliminated from the composite score. There was a significant and moderate positive correlation ( $r(254) = .341, p < .01$ ) between the 3-item breadth scale and the author-constructed single item. Combining the single-item with the 3-item scale reduced internal consistency (Cronbach's  $\alpha = .73$ ), thus the decision was made to use the breadth composite score without the inclusion of the single item measure.

### *Exploration in Depth*

The five ideological exploration items from Meeus and Dekovic's (1995) Utrecht-Groningen Identity Development Scale (U-GIDS) were used to assess career exploration in depth. The items were slightly modified; the original scale assessed exploration of one's school identity. Thus for each item the word "education" was replaced with "career of interest" (e.g. *"I try to find out a lot about my career of interest"*). Participants were asked to rate each item on a five-point scale (1 = completely true, 5 = completely untrue) for how characteristic it was of their exploratory behavior. The values for each item were averaged.

Meeus and Dekovic (1995) reported that the U-GIDS has high internal reliability for the ideological exploration items (Cronbach's  $\alpha = .84$ ). More recently, a study by





Luyckx et al. (2005) reported lower, though still acceptable, internal reliability (Cronbach's  $\alpha = .62$ ).

I created the following question as a check for validity with the above items:  
*"When attempting to determine which career would suit me best, I tend to focus on discovering as much as there is to know about **one specific career of interest**. I make a decision about its fittingness with my goals and values, and only explore other alternatives if this one doesn't seem suitable for me"*. Participants were asked to rate this item on a 5-point scale (1 = strongly disagree, 5 = strongly agree).

The 5-item depth scale had good internal consistency (Cronbach's  $\alpha = .80$ ) and a good range (1.6 – 5.0). The sample mean of the depth scale was 3.78 ( $SD = .67$ ). There was a significant but weak positive correlation ( $r(255) = .195, p < .01$ ) between the 4-item depth scale and the single-item author-constructed question. As expected, combining the single-item measure with the 4-item scale did not increase the scale's reliability; thus the decision was made to perform the planned analyses with the depth of exploration 4-item scale.

#### *Exploration Styles (Refer to Figure 2, p.60)*

As Figure 2 illustrates, each *method* of exploration (social and nonsocial) is broken down into two *foci* of exploration (self and environment). Therefore, there are a total of four *styles* of exploration (#1. social self, #2. social environment, #3. non-social self, and #4. non-social environment). Measures assessed frequency of *engagement* (Row A) of these styles, in addition to how *helpful* each style was rated (Row B). A summary of these styles and the measures used to assess them are presented in Table 5.



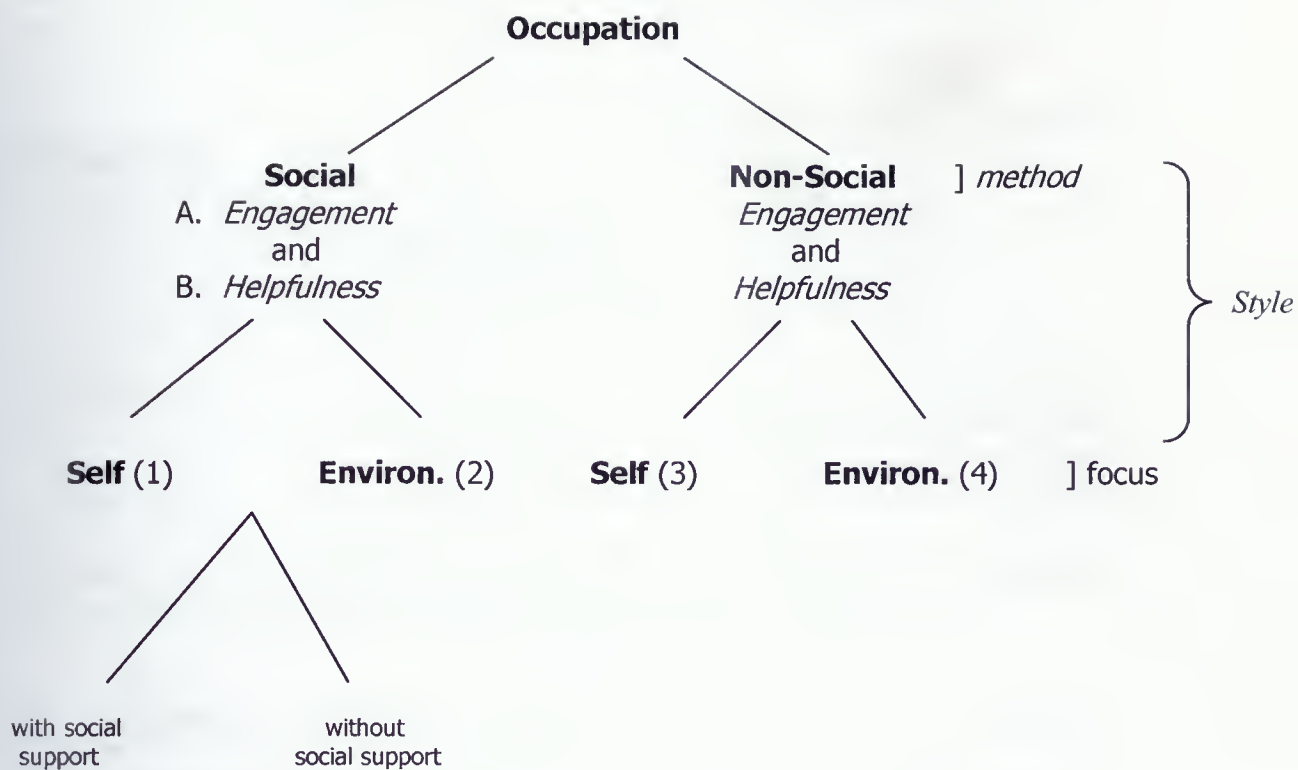


Figure 2. Branches of exploration tree outlining exploration styles.



Table 5. *Career Exploration Survey Subscales used to Measure Exploratory Behaviours and Beliefs.*

Style		Measure: Career Exploration Survey (CES) *
A. Engagement		Subscales
	1. Social Self	Self-Exploration
	2. Social Environment	Environmental
	3. Non-Social Self	Self-Exploration
	4. Non-Social Environment	Environmental
B. Helpful		
	1. Social Self	Internal Search Instrumentality
	2. Social Environment	External Search Instrumentality
	3. Non-Social Self	Internal Search Instrumentality
	4. Non-Social Environment	External Search Instrumentality
C. Social Support	Social Styles of Exploration	Intended-Systematic Exploration

\*All subscales were modified to capture the various *styles* of exploration.

*Engagement – Row A.* Frequency of *engagement* in these four styles of career exploration was assessed using a modified form of Stumpf, Colarelli, and Hartman's (1983) Career Exploration Survey (CES). Three of the original seven dimensions of Career Exploration and two of the original Beliefs about Exploration subscales were adapted for the current study. More specifically, the Self-Exploration subscale was modified to assess non-social self-exploration (Fig. 2, *style 3*; e.g. "*Thought about my past*") and, additionally, was adapted to capture social forms of self-exploration (Fig. 2, *style 1*; e.g. "*Talked about my past with a career or guidance counsellor*"). Similarly, items from the Environmental Exploration subscale were modified to emphasize social forms of environmental exploration (Fig. 2, *style 2*; e.g. "*Discussed career possibilities with knowledgeable individuals such as career advisors*"). The difference between the latter two examples, or social forms of exploration, is the focus of exploration [e.g. past (internal) and career possibilities (external)]. In addition, each item was modified to capture a non-social form of environmental career exploration behaviour (Fig. 2, *style 4*;





e.g. “Obtained information on specific jobs or companies by searching for them on the Internet”).

*Helpfulness – Row B.* Next, as Figure 2 illustrates, items asked participants to rate how *helpful* each exploration style was in obtaining their career goals. The Internal Search Instrumentality subscale of the CES was included, largely unchanged, to assess non-social self-exploration (Fig. 2, *style 3*), while the External Search Instrumentality subscale assessed social environmental exploration (Fig. 2, *style 2*). In addition to the original subscales, modified versions of each were included to assess social self (Fig. 2, *style 4*) and non-social environmental (Fig. 2, *style 1*) exploratory behaviours.

#### *Social Support*

Finally, as indicated in Figure 2, social exploration (*styles 1 and 2*) might occur with or without social support. The Intended-Systematic Exploration subscale of the CES was reworded to assess participants’ likelihood of engaging in these styles of career exploration in the near future both *alone* and *with friend(s)*.

#### *Scale Properties*

The Self, Environmental, and Intended Exploration subscales of the CES consists of five, four, and three items, respectively. Participants were asked to rate each item on a scale ranging from 1 = “little” to 5 = “a great deal”. Internal and External Search Instrumentality, on the other hand, consists of four and three items, respectively, and was rated on a scale that ranges from 1 = “very low probability” to 5 = “very high probability”. Within each subscale, the item values were summed and averaged.

The internal consistency reliabilities for the original CES scales to be used in this study have been reported to range from .67 (External Search Instrumentality) to .89



(Internal Search Instrumentality; Stumpf, et al., 1983). In addition, Blustein (1988) reported marginal to adequate internal consistency (Cronbach's  $\alpha$  ranged from .67 to .86) and two-week test-retest reliability (range = .70 to .85) for his modified version of various CES subscales. Internal consistencies, means, standard deviations, and ranges for the current study are listed in Table 6.

*Table 6. Scale Properties for Exploration Measures Assessing Exploratory Behaviours and Beliefs*

	<i>N</i>	Cronbach's $\alpha$	Mean	SD	Range
Exploration Styles (frequency)					
Social Self	256	.88	2.26	1.03	1.00 - 5.00
Social Environment	257	.69	2.51	.87	1.00 - 4.75
Non-Social Self	256	.82	3.50	.88	1.20 - 5.00
Non-Social Environment	255	.72*	2.78	1.04	1.00 - 5.00
Social Support					
Alone	255	.69	2.30	.79	1.0 - 4.67
With Friend(s)	254	.71	1.57	.63	1.0 - 4.17
Exploration Styles (helpful)					
Social Self	252	.71	3.26	.81	1.00 - 5.00
Social Environment	255	.66*	3.47	.85	1.00 - 5.00
Non-Social Self	254	.70	3.45	.75	1.00 - 5.00
Non-Social Environment	255	.67*	3.48	1.04	1.00 - 5.00

\*after removal of one item

As can be seen in Table 6, internal consistencies are in the moderate to acceptable range, similar to those reported by Blustein (1998). In the non-social environment (frequency) subscale, the following item was removed to increase reliability: "*watched television programs relevant to career interests*". Furthermore, for the same reason, the item "*initiating conversations with other students about their career interviews*" was removed from the social environment (helpful) subscale while the item "*searching the web to obtain career information on general job opportunities in my career area*" was removed from the non-social environment (helpful) subscale. Each subscale listed in



Table 6 demonstrates good range of scores. Furthermore, the normality distributions of each scale were within the normal range. Skewness and kurtosis values are reported in the Results section.

### *Sociability*

Sociability (the tendency to affiliate with others) was assessed using the 5-item CBSS (Cheek & Buss, 1981). Participants were asked to rate the items (e.g. *"I like to be with people"*) on a scale that ranged from 0 (extremely uncharacteristic) to 4 (extremely characteristic). Responses for the five items were averaged so that higher scores reflect higher sociability. Self-reported sociability has only a moderate correlation ( $r = -.30$ ) with self-reported shyness (Cheek & Buss, 1981).

The measure has shown adequate internal consistency (Cronbach's  $\alpha = .70$ ) and a mean inter-item correlation of .32 (range .20 to .57) (Cheek & Buss, 1981). Internal consistency in the present study was moderate (Cronbach's  $\alpha = .69$ ). Removing one item (*"I would be unhappy if was prevented from making many social contacts"*) would have slightly increased the scale's internal consistency (Cronbach's  $\alpha = .70$ ). The decision was made, however, to leave the scale as the authors constructed it. The sample mean for sociability was 2.57 ( $SD = .71$ ) and the scale had good range (0 to 4). Consistent with Cheek & Buss (1981), sociability was significantly and negatively correlated with shyness ( $r = -.463, p < .001$ ).





## RESULTS

### Data Screening

The online nature of this study allowed for the automatic entry of data which were stored in a secure file as participants filled in the questionnaires. The accuracy of this data entry system was examined extensively by me and the website programmer, prior to participant recruitment. Specifically, we each completed the survey several times, checking that the downloaded data did indeed match the selected responses. In addition, 49 participants (19.1% of total sample) completed paper copies of the questionnaire. This data entry was checked manually. All values were within range of the scales. Data were also screened for missing data, normality, and outliers. Additional modifications made to the data are described below.

### *Missing Data*

Two hundred fifty-seven participants completed the questionnaire. Overall, there were very few missing data (<.001%). Many composite scales, including shyness and identity, had no missing data. Exploration with social support (composite) and satisfaction with amount of exploration (single item) had the highest numbers of missing data, although this involved only three participants (1.2%). The remaining scales had between zero and two participants with missing data. As a result, participants with missing data were simply removed from relevant analyses.

### *Distributions*

Distributions were examined for departures from normality and the presence of outliers. Skewness and kurtosis values were examined to determine if the distributions were adequately normal. Skewness is a measure of the symmetry of the distribution,





whereas kurtosis is a measure of the peakedness of the distribution (George & Mallery, 2003). The skewness and kurtosis values for the relevant distributions are presented in Table 7.

If a distribution were perfectly normal, skewness and kurtosis values would be zero; skewness and kurtosis values between  $\pm 1$  are considered excellent and values between  $\pm 2$  are considered acceptable (George & Mallery, 2003). As shown in Table 7, all distributions had excellent skewness and kurtosis values with the exception of *Exploration with Friends*, though its higher values are still within the acceptable range.

Table 7. *Skewness and Kurtosis Values*

Scales	Skewness	Kurtosis
1. Shyness Scale	.404	.007
2. Sociability Scale	-.452	.433
3. Achievement	-.115	-.523
4. Moratorium	-.035	-.918
5. Foreclosure	.440	.356
6. Diffusion	.505	.079
7. Social Exploration	.329	-.918
8. Non-Social Exploration	.099	-.264
9. Exploration with Friends	1.273	1.513
10. Depth of Exploration	-.406	.410
11. Breadth of Exploration	-.660	.714
12. Career Distress	.009	-.895

To identify outliers, each variable was standardized and z-scores and scatterplots were examined. Z-scores greater than  $\pm 3.29$  ( $p < .001$ , two-tailed test) signify potential outliers (Tabachnick & Fidell, 2001). When examining the z-scores for variables numbered 1-6 in Table 7, it was found that *sociability* and *foreclosure* each had two



potential outliers (z-score= -3.68, -3.43 and 3.49, 3.27, respectively) and *diffusion* had one (z-score= 3.43). However, as Tabachnick and Fidell (2001) suggested, a few z-scores in excess of 3.29 would be expected with a large sample size. Furthermore, these z-scores were not especially large and did not significantly affect the means, skewness, or kurtosis of the distributions. Thus the normality was still acceptable and they did not appear to be outliers.

When examining the z-scores for the exploration measures (Table 7, variables 7-11), three outliers (ID 264, 184, and 150) were identified for *exploration with friends* with extreme scores of 4.12, 3.60, and 3.33, respectively<sup>1</sup>. When the distribution of this variable was examined with these outliers deleted, the skewness score improved slightly. Because it was the presence of outliers that lead to the deviations from normality, it was decided not to transform this variable. Instead, the research question: “does social support moderate the relationship between shyness and frequency of social exploration” was performed with the outliers included. Careful examination of the Mahalanobis distance scores from this analysis was undertaken to identify any multivariate outliers. The second largest univariate outlier (ID 184) was identified as having a much higher Mahalanobis score (55) than the remaining univariate outliers. Because multivariate outliers can have a large influence on the regression line, and thus the results (Cohen, Cohen, West, & Aiken, 2003), the decision was made to remove this case from the respective analysis.

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<sup>1</sup>In addition, the Mahalanobis distance was examined and evaluated as  $\chi^2$  to search for multivariate outliers as suggested by Tabachnik and Fidell (2001). These three case numbers were not multivariate outliers and thus will be treated as univariate outliers. It was found, however, that ID 27 was a multivariate outlier ( $\chi^2(11)=49.916, p<.001$ ). A stepwise regression revealed that only scores on the exploration “probability” measures and on achievement distinguished ID 27 as a multivariate outlier. Because there was only one minor analysis involving these variables it was decided to leave this case in the data set and examine its influence on the respective analysis.



### Correlations Among Variables

Zero-order correlations among the variables are presented in Table 8. Correlations between demographic (gender and age) and model variables were examined. As can be seen in Table 8, *sociability* was significantly and positively correlated with gender, such that females rated themselves as being more sociable than males. *Diffusion*, on the other hand, was negatively correlated with gender, such that males were more likely to agree with items that assessed their current lack of identity exploration and commitment than were females.

In addition, age was significantly and negatively correlated with *foreclosure* and *social support*, such that younger participants were more likely to report higher ratings on foreclosure and higher engagement in exploration with social support than older participants. *Non-social exploration*, on the other hand, was significantly and positively correlated with age, such that older participants reported higher frequency of non-social exploration than younger participants.

Shyness, the main predictor of interest, was significantly correlated with several variables. Specifically, shy emerging adults were more likely than their less shy peers to have higher scores on both moratorium identity and career distress. Furthermore, there was a significant and negative relationship between shyness and social support as well as a trend-level negative relationship between shyness and social exploration.

In addition, correlations among the identity measures ranged from highly significant ( $-.476$ ; achievement and moratorium) to nonsignificant ( $-.046$ ; diffusion and foreclosure). These correlations are consistent with previous research (Adams, 1998). In the present study, I was interested in examining the *unique* relationship between shyness





Table 8. Zero-order Correlations among Temperament, Identity, and Exploration Measures

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Gender	--												
2. Age	-.061	--											
<i>Temperament</i>													
3. Shyness	-.014	-.044	--										
4. Sociability	.160*	-.057	-.463***	--									
<i>Identity-Related</i>													
5. Achievement	.069	.098	-.098	.160*	--								
6. Moratorium	.001	-.037	.220***	-.192**	-.476***	--							
7. Foreclosure	.059	-.148*	-.019	.067	.249***	-.084	--						
8. Diffusion	-.137*	-.079	-.002	-.100	-.285***	.340***	-.046	--					
9. Career Distress	.001	-.058	.234***	-.139*	-.148*	.551***	-.091	.043	--				
<i>Exploration Measures</i>													
10. Social Exploration (engaged)	.010	-.083	-.115†	.182**	.159*	-.149*	.295***	.000	-.039	--			
11. Non-Social Exploration (engaged)	.115†	.147*	-.045	.063	.226***	.036	.076	-.108†	.098	.356***	--		
12. Breadth of Exploration	.007	-.006	.030	.078	.053	.345***	-.055	.159*	.222***	.052	.340***	--	
13. Depth of Exploration	.105†	.043	-.011	.136*	.396***		.133*	-.400***	.031	.252***	.483***	.200***	
14. Social Support	-.076	-.131*	-.127*	.189**	.119†	.033	.332***	.135*	.019	.240**	.102	.067	.082

Note. Men = 0, Women = 1. Means and standard deviations for Shyness can be found on p. 54, Identity-Related Variables on p. 56-57, Breadth on p. 58, Depth on p. 59, Social/Non-Social Exploration and Social Support on p. 63, and Sociability on p. 64.

Note: Zero-order correlations for Exploration *Engaged* and Exploration *Helpful* can be found in Appendix E.

† $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$  two-tailed.



and each of the identity status scores; as a result, all significantly correlated identity scores were partialled from appropriate analyses. Similarly, as would be expected, there were significant positive correlations among many of the exploration variables. In order to test “*The Exploration Tree*”, I was interested in the unique relationship between shyness and each of the specific methods of exploration. Therefore, consistent with analyses involving shyness and identity, all analyses involving shyness and exploration used partial correlations. For example, breadth was partialled from depth (and vice versa) and non-social exploration was partialled from social exploration (and vice versa).

#### Hypothesis One: Shyness and Identity

Hypothesis One comprised predictions that shyness would be positively correlated with Diffusion, negatively correlated with Moratorium and Achievement, and not correlated with Foreclosure scores. Gender, age, method (paper or online), order, and the remaining identity scores were controlled in each partial correlation, if significantly correlated with either the predictor (shyness) or the criterion (identity).

The correlation between shyness and achievement, controlling for order, age, moratorium, foreclosure, and diffusion scores was not significant ( $r(250) = .012, p = .848$ ). In addition, the correlation between shyness and foreclosure, controlling for age and achievement was not significant ( $r(253) = -.001, p = .986$ ) nor was the correlation between shyness and diffusion, controlling for gender, achievement, and moratorium ( $r(252) = -.086, p = .173$ ).

In contrast, the correlation between shyness and moratorium, controlling for achievement and diffusion scores, was significant ( $r(253) = .212, p = .001$ ). This correlation was small in size (Lipsey, 1990), with shyness scores accounting for 4.5% of



the variance in moratorium scores. However, this correlation was in the opposite direction to what had been predicted; emerging adults who reported higher shyness were more likely to receive higher moratorium scores (indicating current career exploration) than emerging adults with lower shyness scores.

In sum, contrary to what had been predicted, degree of shyness did not predict achievement or diffusion identity but did *positively* correlate with moratorium identity scores. Last, consistent with predictions, degree of shyness did not predict foreclosure scores.

### Hypothesis Two: Shyness and Subjective Identity

#### *Shyness and Identity Distress*

The prediction that shyness would correlate positively with career identity distress was examined. Following the finding that shyness was positively correlated with moratorium scores, I decided to control for this identity score as I was interested in assessing the relationship between shyness and career distress above and beyond the stress commonly associated with identity exploration. In addition, order of administration was controlled in the analysis as it was correlated with career distress. Results of the partial correlation support the hypothesis; shyness was significantly and positively correlated with career distress ( $r(253) = .155, p = .013$ ). This correlation was small in size (Lipsey, 1990), with shyness accounting for 2.4% of the variance in career distress.

#### *Shyness, Diffusion, and Distress*

The hypothesis that identity distress scores would be predicted by an interaction between shyness and identity diffusion was examined. More specifically, I predicted that high shy/high diffused individuals would have higher identity distress scores than low



shy/high diffused individuals. This hypothesis was examined using a hierarchical multiple regression analysis.

As suggested by Cohen et al. (2003), continuous variables were centered prior to computing interaction terms, and the centered form of all other continuous predictors was used. Order and gender were entered on step one as they were significantly correlated with career distress and diffusion, respectively. In addition, the moratorium and achievement identity scores were also entered on this step as they were correlated with diffusion. Shyness and diffusion scores were entered next, and the shyness by diffusion interaction was entered last. If the interaction entered on the third step was significant, it would indicate that the relationship between diffusion and career distress differed by level of shyness. The results of the analyses are presented in Table 9.

Table 9. *Hierarchical Multiple Regression Analysis Predicting Career Identity Distress from Shyness by Diffusion Interaction*

	B	R <sup>2</sup> Δ	Df	FΔ	p
Step One		.334	4, 252	31.573	.000
Order	-.118*				
Gender	-.018				
Achievement	.132*				
Moratorium	.617***				
Step Two		.037	2, 250	7.306	.001
Shyness	.117*				
Diffusion	-.159**				
Step Three		.013	1, 249	5.266	.023
Shyness by Diff. Interaction	.117*				

*Note.* The  $\beta$  value shown here is the value at the point at which the predictor was entered into the equation.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ , two-tailed

The overall model for this analysis was significant ( $F(7, 249) = 22.14, p < .001$ ), accounting for approximately 15% of the variance in career distress ( $R = .384$ ). As can be





seen in Table 9, the control variables in step one accounted for a large part of this variance. Step two, composed of the main effects, was also significant. As reported in the previous analysis, shyness positively correlated with career distress. Diffusion, on the other hand, was negatively correlated with career distress, consistent with previous findings (Berman et al., 2004). The third step, involving the interaction between shyness and diffusion was significant, accounting for 1.3% of the variance. The shyness by diffusion interaction was plotted in order to interpret the interaction (Figure 3). To plot the interaction lines, low shyness and low diffusion were calculated by substituting one standard deviation below the mean into the regression equation and one standard deviation above the mean was used to calculate high shyness and high diffusion (Cohen et al., 2003). Examination of the figure supports the prediction that individuals who are high shy and high diffused are more distressed about their career identity than those who are low shy and high diffused. There was no difference for those participants low on diffusion. Tests of significance of slopes were conducted according to the procedures outlined by Aiken and West (1991). Results of these procedures can be seen in Figure 3.

### Hypothesis Three: Shyness and Subjective Exploration

The research questions of Hypothesis Three examined whether shyness was related to subjective feelings and beliefs in relation to identity exploration.

#### *Shyness and Satisfaction with Exploration*

First, I examined the question of whether there is a negative correlation between shyness and satisfaction with amount of career exploration engaged in to-date. The results supported this relationship; the correlation between shyness and satisfaction with exploration was significant ( $r(254) = -.152, p = .015$ ). This correlation was small in size



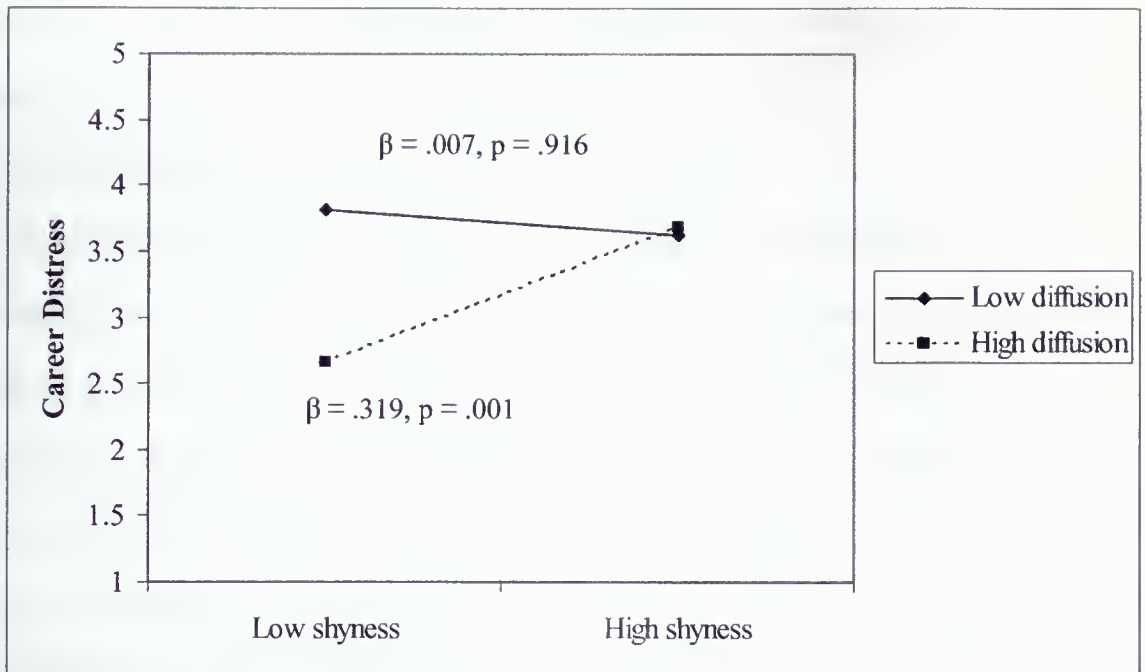


Figure 3. Shyness by diffusion interaction predicting career identity distress.



(Lipsey, 1990), with shyness accounting for 2.3% of the variance in satisfaction with exploration.

### *Reasons for Not Exploring*

The second analysis for this hypothesis tested whether shyness predicted the specific reasons that emerging adults gave for doing less career exploration than they would like to do. Table 10 presents the percentage of respondents who selected each reason, coded as selected (1) or not selected (0), in addition to the zero-order correlations between shyness and each reason, and the correlations between reasons.

Table 10. *Percentages and Zero-Order Correlations for Reasons for Not Exploring Career.*

	%	1	2	3	4	5	6	7
1. Not Interested	4.7	--						
2. Not Enough Time	42.8	-.080	--					
3. No Social Support	6.2	-.057	.168*	--				
4. Too Anxiety Provoking	21.4	-.026	.181*	.023	--			
5. Too Stressful	26.5	-.049	.248**	.064	.569**	--		
6. Too Difficult	13.2	-.032	.219**	.232**	.216**	.365**	--	
7. Have Decided on Career (without exploration)	13.6	.073	-.022	-.008	-.041	-.058	-.088	--
8. Shyness	--	-.013	.057	.029	.192**	.197**	.064	-.022

\* $p < .01$ ; \*\* $p < .001$  two-tailed.

To test the research question, zero-order or partial correlations (controlling for age, gender, order, and/or method, if necessary) were conducted between shyness and each reason. Only two partial correlations were significant. Shyness was significantly and





positively correlated with *too anxiety provoking* ( $r(254) = .188, p = .003$ ) and *too stressful* ( $r(252) = .214, p = .001$ ). The remaining zero-order correlations between shyness and reasons for not exploring were nonsignificant and can be seen in Table 10.

### *Helpful Styles of Exploration*

The third part of Hypothesis Three examined the question “Does degree of shyness predict which style of exploration is judged as being the most likely to result in successfully obtaining career goals?” This question was addressed in two ways. The first method consisted of a 14-item scale that contained subscales for each exploration style: social self, social environmental, nonsocial self, and nonsocial environmental. Items in each subscale were averaged. Participants, therefore, received a score representing how helpful they believed each style of exploration to be. Means and standard deviations for these scores are listed in Table 11. The second method was a ranking question. That is, participants were asked to indicate which focus of exploration would be the most helpful, second most helpful, and so on.

Table 11. *Means and Standard Deviations for “Helpful” Subscales of Exploration Styles.*

	Mean	Standard Deviation
Social Environmental	3.47	.845
Social Self	3.26	.809
Non-Social Environmental	3.48	1.040
Non-Social Self	3.45	.751

For the first method of assessment, two-tailed partial correlations were conducted between shyness and the subscale scores of the four exploration styles, controlling for the



other exploration types and age and gender (if necessary). There were no significant correlations. However; shyness was positively correlated with social self-exploration ( $r(246) = .112, p = .079$ ) at a trend level of significance.

As a post hoc follow-up to this question, I was interested in examining whether shyness was related to any conceptual discrepancy between how *helpful* individuals report this style of exploration (beliefs), and how *frequently* they report engaging in it (behaviour). I focused solely on this style of exploration as it matched my interest in “unpacking” the exploration styles correlated with shyness.

Essentially, I was interested in whether shyness predicted engagement in social self exploration, over and above any variance accounted for by their beliefs about the helpfulness of this exploration style. If a negative relationship existed, this would suggest that shy participants are engaging in *less* social self exploration than would be expected based on their beliefs. A hierarchical multiple regression was conducted to test this question using social self engagement as the criterion variable. Age was entered on the first step as a control variable, in addition to the social self helpfulness variable. Shyness was entered on the second step. The results of the analyses are presented in Table 12.

The overall model for this analysis was significant ( $F(3, 247) = 10.99, p < .001$ ), accounting for approximately 12% of the variance in social self exploration ( $R = .343$ ). As can be seen in Table 12, age and belief in the helpfulness of social self exploration accounted for a large portion of this variance. Of interest, however, was the trend level relationship found between shyness and social self engagement. With the helpfulness scores being partialled from the engagement scores, the resulting correlation between shyness and social self engagement actually represents the relationship between shyness



and residuals scores. These residual scores can be conceptualized as the discrepancy between actual behaviour and predicted behaviour based on beliefs.

Table 12. *Hierarchical Multiple Regression Analysis Predicting Discrepancy Between Actual Social Self Behaviour and Predicted Behaviour Based on Beliefs From Shyness*

	B	$R^2\Delta$	df	$F\Delta$	p
Step One		.105	2, 248	14.499	.000
Age	-.067				
Social Self Helpful	.395*				
Step Two		.013	1, 247	3.663	.057
Shyness	-.179				

\* $p < .001$  two-tailed.

The resulting negative relationship, therefore, suggests that shy participants may be engaging in less social self exploration than would be expected based on their beliefs.

Zero-order correlations were also conducted between shyness and the ranked scores participants gave to each type of exploration. Low ranks were assigned to exploration styles that were considered most helpful. As can be seen in Table 13, shyness was not significantly correlated with any of the ratings of the helpfulness of exploration styles.

In summary, there is little support that shyness is related to beliefs about the helpfulness of any particular method of exploration. The exception to this, however, is that there was a (positive) trend between shyness and social self-exploration. Furthermore, despite their belief in the importance of social self-exploration, the post-hoc follow-up analysis suggested that shyness may be positively correlated with the discrepancy between how helpful this style of exploration is perceived to be and how frequently participants actually reported engaging in it.





Table 13. *Zero-order Correlations between Shyness and “Helpful” Rated Exploration Styles.*

	<i>R</i>	<i>P</i>
Social Environmental	.043	.496
Social Self	.036	.568
Non-Social Environmental	-.002	.980
Non-Social Self	-.076	.229

#### Hypothesis Four: Shyness and Exploration

##### *Total Exploration*

The prediction that shyness would be uncorrelated with frequency of *total* career exploration was examined. The zero-order correlation between shyness and total frequency of exploration was not significant ( $r(256) = -.101, p = .109$ ), indicating that degree of shyness does not predict *total* exploration frequency.

##### *Non-Social and. Social Exploration*

Next, total exploration was divided into *non-social exploration* and *social exploration*. I predicted that degree of shyness would be uncorrelated with frequency of non-social exploration but negatively correlated with frequency of social exploration. Analyses were performed twice. First, correlations were calculated controlling only for age, gender, and order effects, if necessary. This allowed for the examination between exploration methods ( $r = .356$  between the two). Second, partial correlations were computed so that social exploration was controlled in correlations involving non-social exploration and vice versa. This allowed for examination of the unique relationships between shyness and each method of exploration.

As predicted, the correlation between shyness and non-social exploration, controlling for order and age, was not significant ( $r(252) = -.029, p = .647$ ) nor was the





partial correlation controlling for social exploration, order and age ( $r(251) = .020, p = .746$ ). The zero-order correlation between shyness and social exploration, on the other hand, although not significant, showed a trend in the predicted direction ( $r(256) = -.115, p = .067$ ). This trend supported the prediction that emerging adults who reported higher shyness also reported engaging in less frequent social exploration than emerging adults who reported lower shyness. The partial correlation (controlling for non-social exploration) resulted in similar findings ( $r(253) = -.106, p = .092$ ).

In sum, consistent with predictions, shyness was not correlated with frequency of non-social exploration but correlated (negatively) at trend level with frequency of social exploration. This correlation was not as strong as expected, however, with shyness scores accounting for only 1.3% of the variance of social exploration.

#### *Social Self and Social Environmental Exploration*

To examine further the relationship between shyness and social exploration, this exploration method was divided into two foci: self and environment exploration. I examined the question “is shyness negatively correlated with both frequency of social self-exploration and frequency of social environment exploration?” Partial correlations were conducted so that social self-exploration was controlled in analyses examining the relationship between shyness and social environment exploration and vice versa. Partial correlations were not significant for shyness predicting social environment exploration ( $r(253) = -.061, p = .333$ ) or social-self-exploration ( $r(253) = -.035, p = .576$ ). Thus, the research question was not supported.



### Hypothesis Five: Breadth and Depth

In Hypothesis Five, the question of whether shyness is related to breadth and depth dimensions of exploration was examined. To examine the unique relationships between shyness and the exploration variables, depth was controlled in the shyness/breadth analysis and vice versa. Additionally, order of administration was controlled in the shyness/breadth analysis as it was significantly correlated with breadth ( $r(256) = -.218, p < .001$ ). The partial correlation between shyness and breadth of exploration was not significant ( $r(251) = .054, p = .392$ ), nor was the correlation between shyness and depth of exploration ( $r(252) = -.017, p = .784$ ).

### Hypothesis Six: Shyness and Social Support

It was predicted that the correlations between shyness and social exploration would differ by amount of social support. Specifically, a negative correlation between shyness and social exploration was expected to hold only for individuals *low* on social support; *high* social support, therefore, would serve as a buffer. A hierarchical multiple regression was conducted to test this hypothesis.

Age and method of survey administration were entered on the first step as control variables, in addition to the exploring alone and non-social exploration scores. These latter variables were included in the regression so the resulting analysis represented the unique relationship between engaging in *social* exploration with *social support*. Shyness and social support were entered next, and the shyness by social support interaction was entered last. If the interaction entered on the third step was significant, it would indicate that the relationship between shyness and frequency of social exploration differed by social support. The results of the analyses are presented in Table 14.



Table 14. *Hierarchical Multiple Regression Analysis Predicting Frequency of Social Exploration From Shyness by Social Support Interaction*

	B	$R^2\Delta$	$df$	$F\Delta$	$p$
Step One		.278	4, 248	23.861	.000
Age	-.131**				
Method	-.068				
Exploration – Alone	.387***				
Non-social Exploration	.254***				
Step Two		.006	2, 246	1.097	.336
Shyness	-.061				
Social Support (SS)	.053				
Step Three		.0113	1, 245	4.421	.037
Shyness by S.S. Interaction	.116*				

*Note.* The  $\beta$  value shown here is the value at the point at which the predictor was entered into the equation.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ , two-tailed

The overall model for this analysis was significant ( $F(7, 245) = 14.79, p < .001$ ), accounting for approximately 24% of the variance in social exploration ( $R = .545$ ). As can be seen in Table 14, the control variables in step one accounted for a large part of this variance. Step two, composed of the main effects, was not significant. The third step, involving the interaction between shyness and social support was significant, accounting for 1.3% of the variance in frequency of social exploration. The shyness by social support interaction was plotted in order to interpret the interaction (Figure 4). To plot the interaction lines, low shyness and low social support were calculated by substituting one standard deviation below the mean into the regression equation and one standard deviation above the mean was used to calculate high shyness and high social support (Cohen et al., 2003). Examination of the Figure supports the prediction that level of





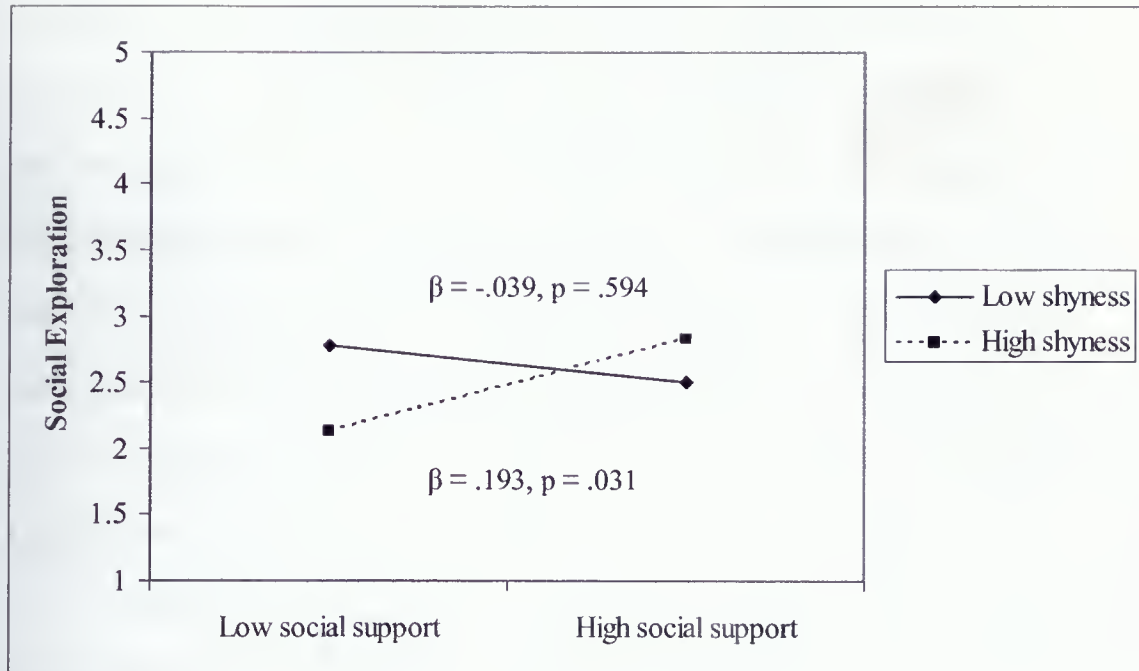


Figure 4. Shyness by social support interaction predicting social exploration.



social support does not affect frequency of social exploration for low shy individuals but that social support does indeed buffer the negative relationship between (high) shyness and social exploration. That is, individuals who are high shy but report using social support engage in more social exploration than high shy individuals with low social support. This relationship holds true over and above their frequency of non-social exploration and their reported level of exploration engaged in by themselves (“alone”). Tests of significance of slopes were conducted according to the procedures outlined by Aiken and West (1991). Results of these procedures can be seen in Figure 4.

The above analysis supports the prediction that shyness moderates the relationship between level of social support and *total* frequency of social exploration. However, as shown in Figure 1 (Exploration Tree, p. 44), individuals might make use of social support when taking part in social *self-exploration* or social *environmental* exploration. Therefore, although specific predictions were not made for these subtypes of social exploration, it was decided to “unpack” *total* exploration to examine whether a similar relationship holds true for both self and environment exploration. Hierarchical multiple regressions, controlling for the social exploration focus (self or environmental) *not* being examined in the respective analyses, were conducted.

As can be seen in Table 15, results from the analyses indicate that social support moderates the relationship between degree of shyness and social *environment* exploration ( $p = .044$ ) but not social *self-exploration* ( $p = .945$ ). This relationship was small, however, with the shyness by social support interaction accounting for only 0.9% of the variance in social environment exploration. The interaction was plotted as described



Table 15. *Hierarchical Multiple Regression Analysis Predicting Frequency of Social Self and Environmental Exploration From Shyness by Social Support Interaction*

	B	R <sup>2</sup> Δ	df	FΔ	p
<i>Social Environmental Exploration</i>					
Step One		.483	5, 246	46.019	.000
Age	.003				
Method	-.023				
Exploration – Alone	.202***				
Social Self-Exploration	.545***				
Non-social Exploration	.106*				
Step Two		.001	2, 244	.285	.752
Shyness	-.031				
Social Support (SS)	-.021				
Step Three		.009	1, 243	4.087	.044
Shyness by S.S. Interaction	.095*				
<i>Social Self-Exploration</i>					
Step One		.461	5,246	42.060	.000
Age	-.104*				
Method	-.031				
Exploration – Alone	.155*				
Social Environ. Exploration	.568***				
Non-social Exploration	.099				
Step Two		.004	2,244	.815	.444
Shyness	.061				
Social Support (SS)	-.020				
Step Three		.000	1,243	.005	.945
Shyness by S.S. Interaction	.003				

*Note.* The  $\beta$  value shown here is the value at the point at which the predictor was entered into the equation.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ , two-tailed



previously. As can be seen in Figure 5, the relationship between social support, shyness and social *environmental* exploration is similar to the analysis for shyness, social support and *total* social exploration described above. Tests of significance of slopes were conducted according to Aiken and West (1991) and are presented in Figure 5.

#### Hypothesis Seven: Shyness and Sociability

It was predicted that sociability would buffer the negative correlation between shyness and frequency of social exploration. More specifically, high shy/high sociable individuals were expected to engage in more social exploration than high shy/low sociable individuals. This relationship was not expected to exist for low shy individuals. This hypothesis was examined by conducting a hierarchical multiple regression analysis. Predictors were entered in the following order: gender and non-social exploration were entered as control variables in step one; shyness and sociability in step two; and the interaction between shyness and sociability in step three. Results from this multiple regression are presented in Table 16.

The overall model was significant ( $F(5, 248) = 8.888, p < .001$ ), accounting for 15.2% of the variance in predicting social exploration ( $R = .390$ ). As can be seen in Table 14, however, the only significant variables are non-social exploration and sociability,





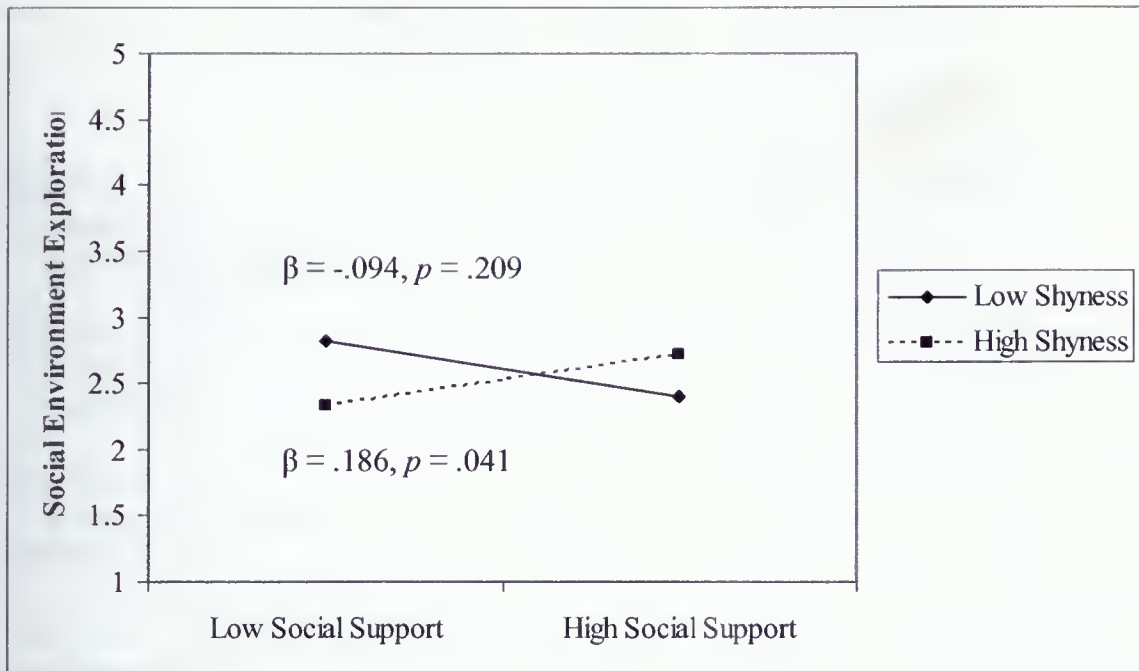


Figure 5. Shyness by social support interaction predicting social environmental exploration.



Table 16. *Hierarchical Multiple Regression Analysis Predicting Social Exploration From Shyness by Sociability Interaction.*

	B	$R^2\Delta$	$df$	$F\Delta$	$P$
Step One		.124	2, 251	17.742	.000
Gender	-.029				
Non-social Exploration	.354***				
Step Two		.028	2, 229	4.085	.018
Shyness	-.009				
Sociability	.165*				
Step Three		.000	1, 248	.077	.781
Shyness by Sociability Interaction	-.017				

*Note.* The  $\beta$  value shown here is the value at the point at which the predictor was entered into the equation.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ , two-tailed

which are control and main effect variables, respectively. Sociability accounted for 2.3% of the variance ( $p = .015$ ) of social exploration, such that emerging adults with high sociability scores reported higher frequency of social exploration. The third step consisting of the interaction was not significant.

In summary, the results of this multiple regression did not provide support for the hypothesized interaction between shyness and sociability predicting social exploration.



## DISCUSSION

*Exploration* and *commitment* have been described as two processes central to the development of a healthy identity (Marcia, 1980). Research has demonstrated the importance of identity exploration and documented the relationship between personality dimensions such as self-esteem and self-monitoring to one's orientation to explore (Grotevant, 1987). However, many questions have been left unaddressed, especially questions related to the *mechanisms* of exploration. Thus, the first goal of this study was to "unpack" the process of career identity exploration, build an organizational model representing such processes, and learn more about exploration styles. In addition, although researchers have suggested that shy individuals may experience difficulties during transitional phases of their life (Casper et al., 1988) and that they might be more identity diffused than their less shy counterparts (Hamer & Bruch 1994), it remains unclear whether these findings indicate that shy individuals engage in less exploration than their non-shy counterparts. Therefore, a second goal of this study was to examine the relationship between shyness and identity exploration. In the next few pages, the results of this study will be summarized and discussed in light of theoretical positions on shyness and identity exploration.

### *"The Exploration Tree"*

As mentioned, prior to researching how shyness might affect career identity exploration, it was necessary to develop a model that served as an organizational framework for the multiple components of exploration discussed by previous researchers (e.g. Hamer & Bruch, 1997). Upon closer examination of the branches of "The Exploration Tree" (Figure 1), I believe it served its function of clearly displaying various





distinct, though correlated, methods of exploration. A discussion of the relevance of this model to past and future research in the identity exploration field will now be presented.

First, following Luyckx and colleagues' (2006a) finding that there might be two forms of exploration serving different purposes in identity development, I included measures of both exploration in breadth and depth in the present research. Similar to Luyckx et al. (2006a) findings, I found that although the two forms of exploration were related ( $r = .200$ ), this correlation was fairly weak, suggesting that they contain unique variance. As such, if breadth and depth of exploration are included in future identity exploration research, interesting relationships may emerge between these variables and other predictors of interest. Therefore, I believe they merit a place in "The Exploration Tree".

In addition, findings from my study supported that my measures of exploration in breadth and depth were assessing what they were designed to, which serves as a reliability check for researchers working with these "new" dimensions. First, consistent with Luyckx et al. (2005), in my research breadth correlated with moratorium, which suggested it is measuring current *exploration* of numerous alternatives. In addition, breadth also correlated with distress but, unlike past research, was not negatively correlated with achievement. Similarly, as expected, depth was correlated positively with achievement and foreclosure, suggesting some relationship with *commitment*. These results further my belief that breadth and depth of exploration serve unique purposes in identity exploration and should be continued to be researched in future.

Second, as suggested by Hamer and Bruch (1994), I designed measures to clearly differentiate between social and nonsocial methods of exploration. Although these



methods were correlated ( $r = .356$ ), there was only 12.7% shared variance. The large percentage of unique variance, therefore, supports the importance of including separate branches for social and non-social exploration in “The Exploration Tree”.

Next in the model, social and non-social methods were each divided into self and environmental exploration (*foci* of exploration). Similar to the findings described above, although non-social self and non-social environmental exploration had shared variance (3.6%), this percentage was small. As a result, dividing, presenting, and examining the two foci separately was beneficial as they appear to represent different processes. The social styles of exploration on the opposite side of the tree, however, had a much higher rate of shared variance (43.8%). This might be a result of the items between the two styles representing much more closely related processes than the items between the non-social styles. In future research, therefore, either the items on the subscales should be made more distinct or, alternatively, the subscales might be examined together as one branch with little loss of variance.

It is important to note that although the internal consistencies of most subscales, or exploration methods and styles were high, the reliabilities for environmental exploration (both social and non-social) were slightly low (Cronbach’s  $\alpha < .70$  for each). This suggests that there was more variability within participants’ responses for the items on these scales. In future research, if additional activities are generated for these styles of exploration, the subscales might warrant further divisions (i.e. extra branches on the model) to help better capture the unique variance accounted for by the activities.

Third, social exploration was divided into engaging in exploration alone (no social support) or with friend(s) (social support). These methods of exploration were



moderately correlated ( $r = .400$ ), sharing 16% of their variance. Once again, their far from perfect correlation suggests that individuals who report exploring alone are not necessarily also exploring with friends, or vice versa. It is important, therefore, to separate these two methods in the exploration model.

Last, my exploration model and constructed measures were designed to only assess exploration in the occupation domain. Future research is needed to examine whether this model fits the exploration processes found in the identity development of other ideological (e.g. religion, politics) or the interpersonal domains (e.g. relationships, friendships).

In conclusion, the branches of “The Exploration Tree” appear to represent the various methods and processes of exploration. Next, the branches were examined more closely in an attempt to understand how shyness might fit into the model. Contrary to hypotheses, shyness was not related to frequency of total exploration. Consistent with hypotheses, however, shyness was uncorrelated with non-social exploration, and a trend level relation was found between shyness and frequency of social exploration. Furthermore, as predicted, though weaker than expected, social support moderated the negative correlation between shyness and social exploration. Finally, there was no relationship between shyness and tendency to engage in breadth or depth of exploration. A more detailed examination and discussion of these results follows a discussion of the relationship between shyness and identity as well as between shyness and subjective beliefs about the process of identity development.





### *Shyness and Identity*

To my knowledge, only one study has examined the relationship between shyness and identity status (Hamer & Bruch, 1994). The authors formed their predictions based on the premise that shyness is a personality trait that would inhibit exploration and, subsequently, identity development. Based on this rationale and Hamer and Bruch's findings that shyness was positively correlated with diffusion and moratorium, negatively correlated with achievement, and uncorrelated with foreclosure, similar hypotheses were tested in the present study using career identity as opposed to a more global identity score. These analyses allowed us to examine the consistency of Hamer and Bruch's findings and served as a gateway into our focus on identity *exploration*.

### *Achievement and Diffusion*

Contrary to Hamer and Bruch's findings, I did not find a relationship between shyness and achievement or between shyness and diffusion. These differing results may be accounted for by our specific focus on *occupational* identity whereas Hamer and Bruch examined the relationship between shyness and *global* identity. Their measure, therefore, collapsed interpersonal (e.g. friendship, dating) and ideological (e.g. occupation, politics) identity domains into a single score. As discussed in the introduction, identity is not a unitary construct, meaning individuals' current level of exploration and commitment might vary by domain. By overlooking the complexity of identity, we might miss important relationships (Goossens, 2001). One such relationship might be between shyness and occupational identity of university students.

With achievement, for example, it is unlikely that many young university students, whether they are shy or not, have completed their exploration and are





committed to a specific career (Wessel, Christian, & Hoff, 2003). This argument is supported by the finding that the demand for career services in universities, such as career courses, is increasing (Reese & Miller, 2006). It is during these undergraduate years, therefore, that students are exposed to career options and encouraged to engage in active, focused exploration. A negative correlation between shyness and achievement might be expected with an older sample, following the expected years of exploration.

As a side note, however, an interesting finding was that shyness was significantly and negatively correlated with how *confident* students are in the career they listed as “what they would like to be when they grow up” ( $r(256) = -.172, p = .006$ ). This question might be considered a more indirect measure of career exploration and commitment as it assumes that the participants have, at the very least, thought about their career choice. Participants who reported higher shyness scores, therefore, did appear to differ to some extent from participants with lower shyness scores on an achievement-related variable in that they were *less* confident with their career choice.

The absence of a significant positive relationship between shyness and diffusion is best understood through consideration of the university student sample of this study. This sample of emerging adults is biased with respect to their current focus on developing a career. For example, more than three-quarters of participants responded that they were “moderately” or “very” interested in developing their career identity while almost 90% rated that establishing a career of interest is moderately or very important to them at *this point in their lives*. The fact that the participants are enrolled in post-secondary education, regardless of their level of shyness, suggests that they are unlikely to agree with questions such as “although I don’t have a clear idea of what my occupation will be, I don’t care at



this point”. It would be interesting to see whether this positive relationship would exist in a sample more representative of the population and/or with a non-university sample.

### *Moratorium*

Contrary to what had been predicted, shyness correlated positively with moratorium. This finding, although unexpected, suggests that shy individuals *are* indeed exploring the career domain of their identity and, therefore, a closer examination of the branches of “The Exploration Tree” was warranted. This examination, however, will be presented following a discussion of the relationships between both shyness and moratorium, and shyness and subjective experiences of identity and exploration.

The positive correlation between shyness and moratorium is actually consistent with the results reported by Hamer and Bruch (1994). These researchers suggested that this puzzling finding might be attributed to psychometric difficulties; the diffusion and moratorium scores on the EOMEIS have been reported to load as one factor (Adams, 1998). Although in my data moratorium and diffusion were indeed positively correlated, this explanation cannot, nevertheless, account for the relationship between shyness and moratorium in my study.

First, the relationship between shyness and diffusion was not significant and was actually negative in direction – contrary to the positive correlation reported by Hamer and Bruch (1994). This finding holds true even when the correlation between shyness and diffusion is calculated *without* controlling for the other identity scores (similar to analyses run by Hamer & Bruch). Therefore, shyness does not hold the same relationship with moratorium as it does with diffusion and, thus, it is unlikely that their positive correlation is a result of the items assessing a dimension similar to diffusion. Similarly, although



diffusion and moratorium were indeed moderately correlated ( $r = .340$ ), when performing the analyses I used *partial* correlations to remove any overlapping variance among related predictors. Therefore, even if moratorium and diffusion *were* sharing a common dimension, the relationship between shyness and moratorium was examined over and above any of common variance.

Second, although the OIS (used in the present study) was based on and validated against the EOMEIS (used in Hamer & Bruch's study), the correlations between the two are moderate at best. The diffusion subscale of the OIS only correlates .43 with the *occupational* subscale of the EOMEIS while the moratorium subscales have a slightly higher correlation of .68 (Melgosa, 1987). Furthermore, the OIS has not often been used in research and, thus, has not been subject to extensive scale reviews. Nevertheless, it is clear that the subscales do not correspond directly to those from the EOMEIS; therefore it cannot be assumed that the moratorium and diffusion dimensions are also loading as a single factor on this scale. Therefore, although our results are consistent with those reported by Hamer and Bruch (1994), other explanations for the puzzling relationship between shyness and moratorium need consideration.

Upon examination of the items measuring moratorium in the current study, it is not really surprising that there was not a *negative* correlation between it and shyness. Although by definition moratorium consists of active exploration of career alternatives (without commitment), the wording of the items certainly do not imply that this exploration must be social and thus challenging for shy individuals. For example, items contain words such as "examining", "bombarded with suggestions", and "struggling with





several ideas”. It can be assumed that shy (university) participants would be as likely to agree with these statements as their less shy counterparts.

The question remains, however, why was there a significant *positive* correlation? What is it about shy individuals that actually made them *more* likely to agree with these statements? One explanation, like above, centers on the wording of the identity scale items.

Shy individuals have been reported to have increased anxious self-preoccupation, and less self-esteem, specifically lower levels of vocational certainty than their less shy counterparts (Cheek et al., 1986). Furthermore, this vocational uncertainty might translate into real difficulties as individuals with chronic shyness might experience such high emotional distress and inhibition that their personal and professional goals are abandoned (Henderson & Zimbardo, in press). It is unsurprising, therefore, that shy individuals agreed with moratorium statements that contained words such as “bothers me”, “feel I have to pick something specific soon”, “many doubts” and “I wish I could soon decide”. These statements are embedded with feelings of anxiety and worry about their future careers. Therefore, although less shy participants might be examining their career alternatives, they might not be *as stressed* or *worried* about it as these items would suggest and therefore report lower moratorium scores than higher shy individuals.

Indeed, the preceding argument that shy individuals might have higher levels of anxiety and worry about their career development than their less shy counterparts was supported in this study. In addition to measuring the identity status scores, I also examined participants’ subjective feelings regarding their current career identity. I will now turn to a discussion of these results.



## *Shyness and Subjective Identity*

### *Career Distress*

Previous researchers have reported positive correlations between identity distress and internalizing symptoms (Hernandez, Montgomery, & Kurtines, 2006). Examples of such symptoms are depression, anxiety, and social withdrawal. Results from the present study extend the findings linking identity distress to adjustment problems by demonstrating a relationship between career identity distress and shyness. This positive correlation would be expected given the correlation between shyness and some of the symptoms listed above such as depression (Cheek, Carpentieri, Smith, Rierdan, & Koff, 1986). The finding from the current study, therefore, lends some evidence of validity to the newly developed Identity Distress Survey (Berman et al., 2004).

It might be argued that shyness and identity distress should be related given the finding from this study that shyness is positively correlated with the exploratory status moratorium. After all, research has shown that individuals currently exploring their identities show signs of confusion, unhappiness, and self-doubt (Kidwell & Dunham, 1995). However, when performing the current analysis, moratorium scores were partialled from the correlation. Aware of the overlap between distress and exploration, I was interested in the relationship between shyness and career distress over and above any distress accounted for by the current state of exploration. The fact that the correlation remained significant, therefore, might indicate that shy individuals are prone to distress over and above the feelings of stress predicted by their current engagement in identity exploration.



Evidence for this hypothesis comes from the career development literature.

Multon, Hepner, Gysbers, Zook, and Ellis-Kalton (2001), for example, recognized that clients approaching career counsellors for help are often experiencing a broader range of psychological distress symptoms such as anxiety and depression. Indeed, they found that 60% of clients had such symptoms upon entering career counselling. However, following completion of career counselling that adopted a holistic approach, many of the clients had improved scores on measures assessing their psychological distress. The authors concluded that there should be an integrative goal in such sessions, such that the client experiences both psychological and career adjustment.

This approach seems like it would be particularly beneficial for shy individuals. Even if not depressed, most shy individuals experience cognitive distortions such as self-deprecating thoughts and excessive concerns about being negatively evaluated by others (Cheek et al., 1986). As a result of these thoughts and feelings, shy individuals often experience behavioural consequences such as poor performance in social situations (Ishiyama, 1984). Counselling focused solely on their career development might be futile as shy individuals will unlikely be able to act on their new goals and knowledge if they are still experiencing cognitive distortions, anxiety, and low self-confidence. Perhaps what would be most beneficial for shy university students would be counselling and training aimed at their shyness, coupled with practice exercises in career exploration situations. For example, treatment for shy individuals often includes exposure to feared situations, coping skills training, communication exercises, and in-vivo behavioural homework (Henderson & Zimbardo, in press). Counsellors, therefore, could teach





strategies for handling shyness during their sessions and encourage their clients to apply these newly developed skills to the real-world of career exploration.

### *Distress and Diffusion*

Diffusion, defined by Marcia (1980) as consisting of no current identity exploration or commitment, is often considered the least healthy identity status (Waterman, 1999). Overall, diffuse individuals are generally considered to be apathetic and disinterested (Marcia, 1980). The diffused items on the widely used Objective Measure of Ego Identity Status (Bennion & Adams, 1986) capture these characteristics. For example, one item from occupational identity reads: *“I’m not really interested in finding the right job, any job will do. I just seem to flow with what is available”*. Similar items appear in the OIS (Melgosa, 1987) used in the present research (e.g. *It is too early for me to be concerned about my professional future*).

However, as discussed in the introduction, I believe that the reasons for shy participants’ lack of exploration and commitment might be something more than disinterest or lack of motivation. Specifically, they might feel as though they “can’t” and, as a result, feel more distressed about their career identities than their less shy/high diffused counterparts.

The results of the study support this idea. Specifically, the lack of correlation between shyness and diffusion suggested that the participants scoring high on the diffusion measure are both low and high shy. The results of the interaction analysis performed, however, suggest that the high shy/high diffused participants are more *distressed* about their current status than their less shy/high diffused participants. That is, the high shy/high diffused individuals seem more bothered about their current lack of





exploration than their less shy counterparts. This, therefore, might support my idea that shy diffused individuals are indeed experiencing feelings of “I can’t” as opposed to “I’m not interested”, with respect to identity exploration.

This finding supports the need for holistic counselling services, as previously discussed. More specifically, it is necessary for counselling services to be aware that not all diffused individuals are distressed and that it is necessary to help their clients discover *why* they are not exploring their career alternatives. As Archer and Waterman (1990) suggested, the motivations underlying individuals’ choices not to explore or commit differ, and for some individuals this identity status is developmentally healthy whereas for others it is not. This idea should be examined in future research. In addition, supplementing the quantitative data with qualitative data could be extremely beneficial in increasing our understanding of the relationship between shyness, diffusion, and distress.

#### *Exploration Dissatisfaction and Reasons*

Following the finding that shyness is positively correlated with career distress, the question remains *why* are shy individuals distressed? Part of the reason appears to be because, compared to their less shy counterparts, shy individuals are less satisfied with the *amount* of exploration in which they have engaged. This is despite reporting that they are actually engaging in more *current* exploration, as evidenced by their higher moratorium scores.

This negative correlation between shyness and exploration satisfaction is of particular interest when the finding that shyness is uncorrelated with achievement identity status is considered. Overall, shy participants are no less achieved than their less shy



counterparts. Consequently, a question that deserves thoughtful examination is *why* are they less satisfied with their exploration and more distressed with their career identity?

One possibility is that shy participants are trying to explore but are unable to – an argument previously made with respect to diffusion. Perhaps shy individuals are more concerned with becoming identity achieved, at this point in their lives, than less shy undergraduates. Shy individuals' difficulty with the exploration process, however, is interfering with obtaining this goal. Why would they be more concerned with identity achievement? Research suggests that anxiety results from a motivation to create a desired impression on others but self-doubt about one's abilities to do so (Schlenker & Leary, 1985). As previously seen, many individuals with shyness have a preoccupation with what others think and being negatively evaluated by them (Cheek et al., 1986). This might cause them to develop overly high standards for themselves, such as becoming identity achieved, in order to form favourable impressions on others. As university undergraduates, they might feel pressure from their parents or professors to start making decisions about their careers. However, believing that they struggle in social interactions and other areas related to exploration may make them preoccupied with their limitations (Schlenker & Leary, 1985), consequently leading to dissatisfaction and distress. It is important to note, however, that this theory of overly high standards and perfectionism being related to shyness has not always been supported (e.g. Jackson, Towson, & Narduzzi, 1997); thus future research is needed to determine its applicability to the current findings.

As a follow-up to the question regarding satisfaction with amount of current exploration, participants were asked to indicate the reason why they may have taken part



in less exploration than they would have liked to do. As expected, the reasons “too anxiety provoking” and “too stressful” were correlated positively with shyness. These findings, once again, support the need for a holistic, integrative career counselling system for university students. It is unlikely that the anxiety and stressfulness of the exploration process is unique to career development. Instead, it is likely something that affects multiple areas of the individuals’ lives and thus should be approached directly.

Of interest was the finding that shyness was uncorrelated with the feeling that there was “not enough social support” for exploration. This might be promising in the context of the current finding that social support might buffer the negative correlation between shyness and social exploration. Other research has suggested that shyness is negatively correlated with such support (Jones & Carpenter, 1985). However, if shy participants feel they have close, trustful relationships, then they need to be encouraged to utilize them during social exploration.

### *Helpfulness of Exploration Styles*

In the present study, shyness and belief in the effectiveness of social self-exploration were positively related (at trend level). Interestingly, however, the current data suggest that this style of exploration is not that helpful. For example, among zero-order correlations between exploration styles and achievement status, social self was the only style *not* to show a positive correlation. Furthermore, among the unique relationships between exploration style and achievement (by partialling out the other styles), social self-exploration is the only one that becomes a *negative* predictor of achievement, though not significant. Despite this finding, an argument will be put forth that although social self-exploration might not directly predict career identity, there might be other benefits to







this style of exploration. Shy individuals, therefore, might not have erroneous beliefs about the effectiveness of this style of exploration and, as such, should not necessarily be advised to abandon this style in replacement of another. It is important to note, however, that because the correlation between shyness and social self-exploration was only at trend level, the findings and recommendations pertaining to this analysis should be interpreted with caution.

If shyness entails discomfort in the presence of others due to the prospect of interpersonal evaluation (Buss, 1980), it was somewhat unexpected that shyness would be related to the belief that *social self-exploration* would be helpful in achieving career goals. It could be presumed that this style of exploration would be difficult and stressful for shy individuals. For example, items used to measure this style included “talking with others about the type of person I am” and “assessing myself through feedback from others”. Therefore, the activities involve “opening up” and discussing oneself with other people. Hamer and Bruch (1997) argued that self-exploration should be avoided by shy individuals as it arouses negative affect as a result of their low concept. It would seem that this would be especially true with *social self-exploration*. However, perhaps shy individuals realize the importance of “opening up” to others for identity development and life satisfaction in general, are aware of their difficulties with this type of interaction, and, consequently, would like to improve this skill.

If this explanation is correct, it might be a promising sign. Career counsellors exist on most campuses to help students sort through personal *and* career-related problems, because the two are intertwined (Niles, Anderson, & Cover, 2000).

Furthermore, Anderson and Niles (1995) found that non-university adult client gains in



career counselling, such as lowered levels of anxiety and confusion, were associated with self-exploration and emotional support. Therefore, although social self-exploration might not directly predict career identity achievement, it should nevertheless be encouraged for shy individuals. Although social self exploration, such as discussions with counsellors might be particularly anxiety-provoking for shy individuals, techniques have been developed to reduce the stress. For example, clinicians at The Shyness Clinic offer a take-home Life History Questionnaire for their clients (Henderson & Zimbardo, in press). This allows shy individuals the opportunity to record any stressful or traumatic events they did not feel comfortable discussing one-to-one with the counsellors. Such methods should be integrated into university career services.

Last, the post-hoc analysis suggested that despite believing in the importance of social self-exploration, high shy individuals might not be frequently engaging in this style of exploration. This might be true for undergraduates in general. Fouad and colleagues (2006) found that although a large number of students had career and/or psychological issues, only about half were aware of the career counselling services on campus and, of those, only a small fraction had used them. This highlights the need for students, especially those who are shy, to be exposed to these services and made aware of how they could be beneficial for their identity development.

Thus far the results show that shyness is correlated with moratorium, meaning shy individuals *are* engaged in current exploration but tend not to have yet made any career identity commitments. Despite their exploration, however, shy participants appear to be more distressed about their identity, less satisfied with the amount of exploration in which they've engaged and, in particular, believe they should be engaging in more social



self exploration than they have done in the past. These findings are consistent with a common coping method used by high shy individuals, as reported by Bradshaw (1998). Specifically, he explained that shy participants often enter social situations that are required for instrumental needs, such as a job interview, but participate minimally in interactions in these contexts. This would result from the awkwardness, inhibition, and discomfort characterized by shyness (Buss, 1985). With this subjective information as a basis, the discussion will now turn to an examination of “The Exploration Tree” to summarize results indicating whether shy individuals differ from their less shy counterparts in their methods of exploration and the moderating variables that may serve to increase their social exploration.

### *Shyness and “The Exploration Tree”*

#### *Shyness and Exploration Styles*

The findings from prior research examining the relationship between shyness and identity exploration have been mixed. Phillips and Bruch (1988), for example, reported that both shy men and women undergraduates engaged in less career information-seeking behaviours than their less shy counterparts. Hamer and Bruch (1997), however, found no relationship between shyness and self *or* environmental exploration. Consistent with the latter findings, no relationship between shyness and *total* exploration frequency was found in the present study. This nonsignificant result, however, was not unexpected. Like Hamer and Bruch (1997) explained, a distinction needs to be made between social and non-social forms of exploration. By combining the two methods, important unique variance associated with each would be lost. The second analysis for this hypothesis,





therefore, divided the total exploration variance into social exploration and non-social exploration.

The partial correlation between shyness and non-social exploration, controlling for social exploration, was not significant. Again, this was not a surprising result. The non-social exploration measure consisted of non-social self (e.g. *thought about my past*) and non-social environment (e.g. *obtained information on specific jobs or companies by searching for them on the Internet*) items. Neither of these exploration styles is thought to be anxiety-provoking for shy individuals. There is no social interaction involved and thus no opportunity for negative evaluative feedback. The negative components of shyness, such as self-deprecating thoughts and anxious behaviours, are specific to social settings (Buss, 1980); therefore there is no reason for non-social exploration to be negatively affected.

The partial correlation between shyness and frequency of social exploration, on the other hand, was negative (trend level). This correlation, therefore, was in the predicted direction; higher shy participants engaged in *less* social exploration than their less shy counterparts. It should be noted, however, that contrary to predictions, shyness was not negatively correlated with either of the two subcomponents of social exploration, self or environment. Nevertheless, the relation found between shyness and *total self-exploration* is consistent with what Hamer and Bruch (1997) hypothesized at the conclusion of their research. It is also consistent with research suggesting that shy individuals often avoid stressful, challenging social situations (Cheek & Krasnoperova, 1999). Obviously social exploration entails interacting with unfamiliar people, often in positions of authority (e.g. professor, potential employer). These situations might be





stressful and the data suggest that shy individuals are less frequently engaging in these activities. However, *does this lack of social exploration affect the development of a healthy identity?* Or, referring back to a question posed in the introduction: *does effective exploration necessarily involve social interaction?*

In considering the answer to this question, I decided to examine whether each method of exploration predicted identity achievement. The good news, for shy individuals, is that both social *and* non-social methods of exploration positively predict achievement. Furthermore, when examining the results from partial correlations, controlling for the other method of exploration, only non-social exploration remained significantly correlated to achievement. From these results, therefore, it appears that non-social exploration *can* be an effective form of career exploration. It remains unclear, however, whether it can *replace* social exploration. For example, when the partial correlations predicting achievement are more closely examined, it is social environment and non-social self-exploration that appear to be effective. If individuals are *only* partaking in non-social exploration, then, they might be missing out on beneficial *environmental* exploration.

It appears from these analyses, therefore, that exploration processes are complex. Furthermore, I only examined the processes with respect to career identity development; completely different results may be found if one is looking at the relations between shyness and exploration in the other ideological (e.g. religion, politics) or the interpersonal domains (e.g. friendship, dating). Perhaps the best advice and conclusions are those suggested by Coatsworth et al (2005); it is the fit between the person and the context that is important. More specifically, perhaps social exploration is most effective



for some individuals in particular situations, whereas for other individuals, non-social methods of exploration are most beneficial. With all that said, however, the findings and recommendations pertaining to this analysis should be interpreted with caution given that the relation between social exploration and shyness was only at a trend level of significance.

### *Breadth and Depth*

Marcia's exploration dimension refers to the exploration of one's self or environment in order to make a decision about an important life choice (Grotevant, 1987). Thus it reflects the exploration in *breadth* of alternatives *prior* to commitments. Luyckx and colleagues (2006a), however, argue that exploration is not one-dimensional. They have suggested a second type of exploration, termed *depth*, which reflects exploration of current commitments. Their ideas prompted us to consider that when exploring careers, some people might focus on a number of alternatives simultaneously (breadth), while others explore one option in detail until a decision is made about its fittingness with one's developing identity (depth). Past research has suggested that preference for breadth and depth might be related to personality. For example, one study found that extraversion was negatively related to breadth but positively related to depth (Luyckx et al., 2006b). Given that extraversion is negatively related to shyness (Pilkonis, 1977), I was interested in seeing whether breadth or depth was also related to shyness.

My results suggest that shyness is not related to the tendency to explore in breadth or depth. However, the correlations may have been attenuated as a result of limited variability. Most participants reported high breadth and depth scores; thus, there were few scores on the lower end of each distribution.



### *Social Support*

I had hypothesized that social exploration would be predicted by an interaction between shyness and level of social support. Specifically, I had predicted that high social support would buffer the negative correlation between shyness and social exploration. This hypothesis was supported. The meaning and implications of this finding are summarized below.

As defined by Bradshaw (1998), the “social surrogate hypothesis” is that high shy individuals will actively recruit and utilize social support from their networks in anxiety-provoking social situations. Consequently, their anxiety will be reduced and performance in these situations increased. Our scale specifically examined career exploration activities that require social interaction in unfamiliar settings. Therefore, unlike previous research, our finding that utilizing social support during these situations was associated with the frequency of overall social exploration for participants reporting high shyness scores supports the social surrogate hypothesis. Furthermore, the results were consistent with those reported by Bradshaw (1998).

It is interesting to note, however, that when social exploration was separated into its subcomponents (self and environment); the moderating effect of social support only remained significant for social environmental exploration. Although this latter style of exploration was predicted as being more anxiety provoking than social self-exploration, I nevertheless expected a similar relationship between shyness and social self-exploration. In support of this prediction, shyness has been negatively correlated with self-disclosure (Pilkonis, 1977) and positively correlated with fear of negative evaluation (Hopko, Stowell, Jones, & Armento, 2005). Furthermore, shy individuals report less interest in





interpersonally-oriented career fields, presumably as a result of their fear of negative social feedback (Phillips & Bruch, 1988). It would be expected that the items measuring social self-exploration in the present research would tap into such fears and, subsequently decrease the frequency of participation. Engaging in such exploration with a trusted friend, however, might ease the anxiety. As mentioned, this hypothesis was not supported.

One possible explanation for this nonsignificant result is that the items assessing social self-exploration were very limited in that they focused on discussions with career and guidance counselors. Such activities were emphasized in my research as I regarded them as being the most popular forms of social exploration. However, these activities typically occur in one-to-one interactions. Therefore, despite being potentially anxiety provoking, it would be less likely that shy individuals would report recruiting a friend to accompany them to these situations than for activities that involved interacting with a larger number of strangers. As such, future studies should include a larger array of activities in their social self measures to gain a better understanding of the relationship between shyness and social self-exploration.

A second explanation might be that the social self-exploration items I included did not represent anxiety-provoking situations and therefore high shy individuals did not feel the need to engage in them with a friend any more than low shy individuals. As mentioned, most items focused on discussion with a career or guidance counselor. More than half the participants in the present sample were first-year students. Consequently, when responding to these questions they may have been visualizing such discussions with



their high-school counselor, someone with whom they had been familiar for several years.

In future research it would be interesting to uncover specifically *what purpose* the social support (or “surrogate”) serves during career exploration. Although the findings suggest that shy individuals might recruit a friend with whom to explore, it is unclear whether their companionship is sufficient to reduce anxiety or whether the shy individual is actually asking their friend to engage in specific behaviours for them. For example, if attending a career fair do the shy individuals ask their friend to interact with employers of interest or are they able to do so themselves? This might have implications for how successful the shy individuals would be if they did obtain a career interacting with others.

Furthermore, the issue of *conditional entry* should also be examined more closely. In the present research, participants were asked how likely they would be to engage in each social activity *alone* and with friends. It might be possible to determine whether there are specific activities that shy individuals will engage in only *if* they have social support. The next step, after identifying specific activities, would be to discover *why* this social support is needed and how these situations could be made less anxiety provoking for such individuals. These analyses and questions, however, were outside the scope and focus of this thesis.

Despite this apparent importance of social support for shy individuals, a worrisome finding is that shyness is negatively correlated with such things as friendship networks, density of social networks, and the proportion of significant others one is satisfied with, can confide in, and can turn to for help (Jones & Carpenter, 1986). Given that Bradshaw (1998) reported *conditional entry* in social activities for shy individuals,



we should be concerned about the proportion of shy individuals possibly missing important identity developmental opportunities because they do not feel as though they have the needed social support. This is an area that perhaps should be a focus for career counselors at universities and other settings. Encouraging shy individuals to explore with a friend or family member with whom they feel comfortable with might go a long way in helping them achieve satisfying careers.

### *Shyness and Sociability*

The hypothesized interaction between sociability and shyness in predicting frequency of social exploration was not significant. That is, sociability did not buffer the negative correlation between shyness and social exploration. This hypothesis was made following Duggan and Brennan's (1994) suggestion that high shy/high sociable individuals might be drawn to people for the rewards they offer. In the context of this research, therefore, the rewards would be social contacts, experience, and information about one's career of interest.

One possible reason for the nonsignificant finding is that there was limited variability on the sociability measure. Despite having acceptable skewness and kurtosis values, there was a limited number of scores at the lower end of the distribution. For example, less than 20% of participants reported an average sociability score of less than two on a 4-point scale. As a result, there may have been too few low sociability scores for a powerful analysis. Similarly, the relatively "low sociability" (1 SD below the mean) used in the interaction would not have represented the absolute level of low sociability I had intended for this analysis. The high mean for sociability in the present study, however, is





consistent with those reported in other research (e.g. Mounts, Valentiner, Anderson, & Boswell, 2006).

A second explanation for the nonsignificant interaction might be because sociability is positively correlated with frequency of social exploration, regardless of one's level of shyness. That is, high sociability is likely to increase exploration for low shy individuals as much as it is for high shy individuals; thus sociability acts as a main effect. This is a likely possibility given that, by definition, sociability is a preference for being around others rather than being alone (Cheek & Buss, 1981).

Despite the nonsignificant findings in the present research, sociability should still be included in future research linking shyness with identity exploration. The interaction was examined with respect to just one criterion (social exploration), but sociability might buffer the negative relationship between shyness and other exploration-related variables.

For example, the activities listed on the social exploration measure may have been too anxiety provoking for high shy individuals to engage in, regardless of their level of sociability. Indeed, the finding that shyness was correlated with perceptions of exploration as too anxiety-provoking and stressful supports this idea. However, high sociability might serve as a buffer for *non-social* exploration. For example, despite not being social during the phase of exploration, searching for jobs online and/or reading books presumably could lead to social interactions. Likewise, contacting potential employers by email bridges the gap between social and non-social exploration. Email is a form of communication in which the interaction component is reduced. Being high on sociability might provide the necessary drive to take part in these activities, in addition to being successful at them. Although not specific to career exploration, Sheeks &





Birchmeier (2007) did report evidence that suggests that high shy/high sociable individuals are able to express their true selves online and, in addition, develop satisfying relationships. An extension of this research to the area of career development would be interesting.

A second reason why the importance of high sociability should not be overlooked with respect to shyness and exploration is because of its correlation with social networks and social support. Sociable individuals have an advantage over their less sociable counterparts because they are more likely to form new social networks in college or university (Mounts et al., 2006). High sociability would be particularly important for high shy individuals because the latter often have difficulty initiating new relationships and any relationships they do have are often less intimate and supportive than the relationships of less shy individuals (Asendorpf, 2000). Similarly, sociable individuals generally perceive more social support from relatives and colleagues than less sociable individuals (Dzwonkowska, 2004). As previously discussed, I found that high shy participants who reported exploration with a friend also reported higher levels of social exploration than high shy participants with low social support. Therefore, if high sociability is correlated with social support, it is likely a variable of interest in research examining the relationship between shyness and career exploration.

### Methodological Considerations

#### *Self-Selected Sample and Homogenous Sample*

Participants who took part in the present study were volunteers. This raises the question of how well the participants represent university students in general. Although it is likely that most university students are interested in their career exploration, those who



were particularly interested in this component of their identity development may have been more likely to participate in this study than those students who were less interested. This might bias the results. For example, such participants might be more involved in their career exploration, thus report higher frequency of engagement scores (and therefore skew the distribution of this variable) than participants less involved.

Next, because this research included a sample consisting entirely of undergraduate university students, it is difficult to be confident that the sample is representative of all emerging adults (Tavris & Wade, 1997). For example, it is not surprising that the university students reported high interest in establishing a career of interest at this point in their lives (mean 3.45 on 4-point scale). Although this might be representative of university students in general, future research should broaden the sample to see if the results are generalizable to other populations such as college students and emerging adults already in the workforce.

For example, approximately one-quarter of Canadian high school students do not attend post-secondary education while another 12% drop out before completing their program (Statistics Canada, 2006). Most of these individuals will be employed in the workforce. It would be interesting to see whether they utilized similar exploration methods en route to their career, and whether they are satisfied with their choices. Similarly, what about the *shy* individuals not enrolled in university? They are likely to be different from those who took part in this research. These differences might be related to degree or type of shyness or perhaps their long-term goals and identity. This might be particularly true for women. Caspi et al. (1988) reported that shy women were more likely than their non-shy counterparts to have never worked outside the home or to have



ceased their employment once they had children. Extending the research questions examined in this study, therefore, to non-university students might have led to very different conclusions.

### *Direction of Causality*

The present study research was correlational and cross-sectional, making it impossible to determine the direction of causality among variables. However, given that our main predictor of interest, shyness, often has strong genetic predispositions and is a stable trait for 75% of children (Henderson & Zimbardo, in press), reversing the direction of the correlations between shyness and identity development related variables does not make intuitive sense. For example, it was found that shyness was related to identity distress. It seems unlikely that career identity distress leads to shyness. However, given that experiential factors might play a role in shyness, perhaps a more likely relationship between the variables in the present study is a bidirectional one. For example, shyness might lead to identity distress but the accompanying stress and worry might affect one's self-esteem and social relationships which, consequently, might augment one's feelings of shyness. Longitudinal studies are needed to help clarify the direction of the relationships in the present study.

### *Questionnaire and Measures*

Several strengths are apparent in the current study's questionnaire. First, the research was designed with our focus of recruiting shy participants taken into consideration. As opposed to the traditional paper/pencil survey format, the web-based survey significantly reduced the social aspect of participating in research. A fairly good





range of scores was reported on the shyness measure, suggesting that this design was indeed successful in recruiting individuals on either end of the shyness continuum.

Second, exploration scales were adapted and modified (e.g. CES; Stumpf et al., 1993) to assess better the mechanisms of exploration and how each might be related to shyness. For example, previous studies have used scales that are not sensitive to the distinction between social and non-social exploration (e.g. Hamer & Bruch, 1997). By devising items that clearly make this distinction, I was able to extend the literature linking shyness to identity exploration.

Moreover, each of the exploration types was controlled for when examining the other, because, as expected, each was significantly and positively interrelated. This allowed us to examine the unique variance accounted for by each factor when assessing how they were related to shyness.

Several limitations of the measures are also apparent. First, although the skewness and kurtosis values were good for the exploration in *breadth* and *depth* dimensions, there were still limited lower-end values. As a result, the correlations between these measures and shyness may have been attenuated.

Second, in keeping with the focus on *career* identity, only the item assessing the career domain was used as a measure of identity distress. This does not allow us to check the reliability of the measure. It would be helpful, in future, to include additional items measuring this construct. For the present study, therefore, it is necessary to be cautious when interpreting the findings involving career distress.

Third, despite careful attempts to modify existing exploration scales, a few of the internal reliability scores were only adequate. This was particularly the case for the social



exploration subscales, for both behaviours and beliefs. Future research should improve these measures through pilot studies and, in addition, check other psychometric properties such as validity and test-retest reliability.

Next, shyness was correlated with some of the measures of exploration only at trend level of significance ( $p < .10$ ), and, in addition, only a small percentage of variance was explained in the analyses that were significant. It is important, therefore, that the reader interprets these findings and considers the recommendations with caution. Future research, with refined measures, is needed to strengthen our knowledge of the career identity exploration processes so that beneficial programs and services may be developed and offered to shy individuals experiencing difficulties.

Fifth, the entire study relied on self-report data. The accuracy of participants' responses should be interpreted with caution. It is possible that participants overrated their frequency of exploration, either consciously or unconsciously. They may have wanted to appear actively engaged in career exploration, believing that this was expected of them as university students. Overestimating the frequency of exploration might result in limited variability in these measures (e.g. breadth and depth), which would then lead to an attenuated correlation between exploration and other variables of interest. However, because a social desirability measure was not included in the current study, there is no way to know whether participants were influenced by the prospect of having the researcher "judge" them. Future research should include a measure of social desirability. Furthermore, it would be helpful to extend this research by including other types of methodology, such as parent- and peer-report and/or information collected from campus



career services and career counsellors. In this way, the ecological validity of the measures could be assessed.

Last, although gender differences have been reported in the identity development (e.g. Cramer, 2000; Goossens, 2001), identity exploration (Nurmi, Poole, & Kalakoski, 1996), and shyness (Henderson & Zimbardo, in press) literatures, such differences were not examined in the present research. Furthermore, given the large percentage of females in my study (88.7%), it is difficult to generalize my findings to *all* individuals. More specifically, the findings most likely describe the career identity exploration processes of shy *females*. It is likely, however, that the relationship between shyness and identity exploration might be moderated by gender. For example, men have been reported to value separateness and autonomy in their identities, whereas women are more likely to report the importance of connectedness (Cramer, 2000). This might have implications for which style(s) of exploration in which shy men and women choose to engage, with whom they do their exploration, and, at the end, how satisfied and/or distressed they are with the results. Given that shyness is less accepted in men (Mills & Rubin, 1993) and, in addition they are known to value independence, it might be hard for men to recruit social support for exploration, even if it is needed. Although this problem might be less likely for women, their emphasis on connectedness might interfere with other areas of career development such as initiative and assertiveness needed in interviews. This finding has indeed been reported for shy females, as well as males (Phillips & Bruch, 1988). The decision not to include gender as a variable of interest was due to the small proportion of male participants in addition the large number of analyses already being examined in my





thesis. Gender, therefore, should be included as a variable of interest in future research examining the relationships between shyness and identity development.

### Additional Suggestions for Future Research

#### *Cultural and Ethnic Differences*

Erikson's model of identity development is rooted in the Western culture emphasis on the independent self (Lewis, 2003). This process of individuation, or differentiation, is also key to Adams and Marshall's (1996) social development theory of identity. These authors do, however, argue for the importance of integration, which refers to the processes of becoming part of a group, connected to others, and fitting in with one's sociocultural context. Nevertheless, becoming "achieved" through active self-construction is considered to be the most healthy or optimal identity outcome in Western cultures (Serafini & Adams, 2001). What is being ignored by Erikson's, Marcia's, and Adams and Marshall's ethnocentric theories of identity, however, is that in some cultures foreclosure might be considered a healthy endpoint to development (Lewis, 2003).

Foreclosure is often considered to be a less complex and more passive identity than achievement (Adams & Marshall, 1996). However, as Markus & Kitayama (1991) argued, cultures or ethnic groups that encourage a more interdependent sense of self, or identity based on family connectedness and group harmony, might actually encourage such a "passive" identity formation process. If so, adolescents and emerging adults in cultures such as Asia, Africa, and southern Europe (Markus & Kitayama, 1991), or non-Caucasian groups such as Latin-Americans, might be more often classified as the "less mature" identity foreclosure status than their Western counterparts. Indeed, a number of studies have found such results (e.g. Abraham, 1986; Markstrom-Adams & Adams, 1995; Streitmatter, 1988).





To my knowledge, little research exists examining cultural and ethnic differences with respect to identity *exploration*. Furthermore, of the research that does exist, the results are complicated. For example, Lewis (2003) found that Asian-American university students scored significantly higher on identity foreclosure than their Caucasian, African American, and Hispanic counterparts. However, Asian-American students also scored significantly *higher* on Moratorium, suggesting that they are indeed currently exploring their identity alternatives. It is unclear, however, whether this exploration is a necessary prerequisite to their optimal identity, whether it be achievement *or* foreclosure. Future research is needed, therefore, to uncover the complex relationship between exploration and optimal identity development for emerging adults from all ethnic and cultural groups.

### *Types of Shyness*

In the present study, shyness was treated as a unidimensional construct, consistent with much of the shyness literature. However, researchers have argued that a number of different subtypes of shyness may exist (e.g. Pilkonis, 1977). Perhaps the most commonly discussed is the distinction between fearful and self-conscious shyness (Buss, 1985). These subtypes have distinguishing characteristics such as age of onset and eliciting stimuli (Bruch, Giordano, & Pearl, 1986). Fearful shyness, for example, emerges prior to a child developing a self-concept, may be genetically based, and is elicited through encounters with novel situations. Self-conscious shyness, on the other hand, emerges after the development of self-concept, and is described as inhibition due to excessive worry over how others will evaluate the public self. Although each subtype have been



related to behavioral inhibition and cognitive concerns, important differences *do* exist, at least one of which relates to the present research.

Bruch and colleagues (1986) found that compared to non-shy participants, fearful shy subjects, but not self-conscious shy subjects, reported less frequent attempts at career exploration. This fits with the idea that novel situations may have a debilitating effect for fearful shy individuals. It would be interesting, however, to examine the relationship between the two shyness subtypes and each of the exploration styles discussed in the present research. For example, if self-conscious shy individuals are pre-occupied with how others will evaluate the public self, perhaps they would find social self-exploration more difficult than the other styles, and/or more difficult to participate in than fearful shy individuals. Social environmental exploration and exploration in breadth, on the other hand, represent extreme novel situations. Therefore, fearful shy individuals might find these exploration styles particularly difficult. These research questions merit careful examination in future research.

### *Additional Moderating Variables*

#### *Openness to Experience.*

Grotevant (1987) believed that openness to experience, defined as “the extent to which people are original, imaginative, questioning, artistic, and capable of divergent (creative) thinking” (Tavris & Wade, 1997, p.117), is a personality dimension related to the orientation to explore. As Reed, Bruch, and Haase (2004) demonstrated, however, the relationship between openness and exploration of the career domain might be complex, depending on the *focus* of exploration; whether it is career information seeking (environmental exploration) or self-exploration.



This complex relationship could extend to the methods of exploration (social and non-social) discussed in this study. This possibility should be examined in future research. In addition, if high openness encourages questioning and exploration of alternatives, it might act as a moderating variable in the relationship between shyness and exploration. More specifically shy individuals who are high on openness might engage in more social exploration than their shy counterparts who are lower on openness. This interesting hypothesis should be examined in future research.

#### *Attachment.*

The role of secure attachment in the exploratory behaviours of infants is widely documented (Aspelmeier & Kerns, 2003). However, as Blustein, Prezioso & Schultheiss (1995) argued, exploration does not cease in infancy or childhood; therefore, neither do the effects of attachment. They hypothesized that attachment security influences the exploratory behaviour of adolescents and emerging adults. This hypothesis was supported in a study conducted by Aspelmeier and Kerns (2003) who found that college students who reported fearful attachment had a negative approach toward novel situations and exploring campus.

The theory that attachment security promotes exploration has received much support in both the career development and identity literatures (e.g. Adams & Montemayor, 1983; Grotevant & Cooper, 1985). Future studies examining the exploration processes, therefore, should include attachment as a variable of interest. For example, individuals classified as having a “secure” attachment have been found to be significantly lower on shyness than individuals classified as being “fearful avoidant” (Brennan & Duggan, 1994). However, if a secure attachment does indeed support identity





exploration, it might act as a moderating variable in the relationship between shyness and social exploration. Shy individuals who do report a secure attachment, whether it be to a caregiver, friend, or romantic partner, might be more likely to engage in social exploration than shy individuals who lack such attachment figures. This possibility should be examined in future studies.

### *Integrative and Qualitative Data*

Although the addition of more predictors and moderating variables in future models might add to our knowledge of how shyness relates to career identity exploration, a large portion of variance will likely go unexplained. Bartley and Robitschek (2000), for example, combined a large number of predictors into a multivariate analysis; taken together, they accounted for less than one-third of the variance in career exploration. As a result, it might be beneficial to extend findings gained from the current study and in the career development field in general with some qualitative research. For example, conducting interviews with shy emerging adults might uncover complex reasons for engaging (or not) in exploration that were challenging to identify using survey methodology.

There is a large literature on career exploration in the career development field. Included in this literature is research pertaining to the effectiveness of qualitative research tools in career counselling (e.g. Brott, 2001; McMahon & Patton, 2002). However, despite this research, a stable bridge linking these findings to the identity literature has not yet been formed. It is important that this type of integration takes place so we can effectively aid those individuals needing guidance. Based on their reports of



dissatisfaction and distress found in the present research, shy undergraduates might benefit from such help.

The present study, however, uncovered little about the specific needs of shy participants. Despite not being satisfied with their exploration, they did not report less frequency of total exploration or many of its components. They also did not differ from their less shy counterparts with respect to breadth or depth of exploration. It might be necessary, therefore, to recruit shy participants to take part in interviews, in an effort to uncover exactly which methods of exploration they are finding difficult. Hearing their stories and listening to their thoughts and concerns might tell us much about the processes of career exploration.

### Summary of Findings

The first goal of this study was to develop a model to help organize the multiple components of exploration discussed by previous researchers (e.g. Hamer & Bruch, 1997). These components were presented as branches on “The Exploration Tree”. Branches included approaches to exploration (breadth, depth), styles of exploration (non-social self/environment, social self/environment), and the observation that exploration can take place with or without social support.

Upon closer examination of the branches, I concluded that “The Exploration Tree” served its purpose of presenting various methods of career identity exploration. More specifically, although the branches were correlated with one another, the shared variance among them was low to moderate, suggesting that the branches represented different processes. Examining such unique variance is essential to learn more about the exploration process.



The second goal of this study was to examine how shyness relates to career identity exploration. More specifically, I was interested in learning whether shy individuals differ from their less shy counterparts with respect to frequency of specific exploration methods, as outlined in “The Exploration Tree”. Furthermore, I was interested in some of their subjective feelings associated with the exploration process, such as satisfaction and distress.

Shyness was correlated positively with moratorium scores, suggesting that shy undergraduates are, indeed, currently exploring their career alternatives. Nevertheless, they did not differ from their less-shy counterparts on a number of exploration variables, such as total frequency of exploration, frequency of non-social exploration, or tendency to explore in breadth or depth. There was a trend, however, for shy participants to report less social exploration than their less shy counterparts. But this negative correlation was buffered by the presence of social support. That is, high shy individuals who recruited a friend(s) to accompany them in exploration tasks were more likely to engage in social exploration than high shy individuals not recruiting friends. This finding might suggest the possible role of attachment in predicting social exploration of shy individuals, a possibility that merits further examination in future research. Finally, the hypothesis that high sociability might also buffer the correlation between shyness and frequency of social exploration was not supported.

At a slightly more subjective level, shy participants seemed dissatisfied with their developing career identity. First, shy individuals were more likely to report feeling upset, distressed, or worried about their career than their less shy peers. Second, high shy/high diffused participants were more distressed than less shy/high diffused participants. This





might have resulted from shy diffuse individuals experiencing an “*I can’t*” feeling towards exploration, as opposed to less shy diffuse individuals having feelings such as “*I don’t care*” or “*I’m not interested*”. Third, at the level of exploration, shyness was significantly and negatively correlated with satisfaction with amount of exploration. This dissatisfaction, therefore, might account for their career distress. Fourth, when questioned about *why* they hadn’t engaged in as much exploration as they would have liked, shy participants were more likely to report that the exploration process was *too anxiety provoking* and *too stressful* than their less shy counterparts.

Finally, there was little support suggesting that shyness was correlated with perceived effectiveness of any style of exploration. There was a trend, however, suggesting that shy individuals believed in the helpfulness of social self-exploration which included talking about their thoughts, feelings, and past with friends, family or a guidance counsellor. Furthermore, despite their belief in its effectiveness, there was an apparent discrepancy between the perceived effectiveness of exploration styles and how frequently participants reported engaging in these activities.

### General Conclusions

Exploration of alternatives is considered to be a prerequisite for the development of a healthy or optimal identity (Grotevant, 1987; Marcia, 1980). This is believed to be true for everybody, in Western cultures, regardless of temperament. The results of the current study suggest that, contrary to what might be expected, shy university students *are* exploring their career options. In addition, their frequency of engagement in *non-social* methods of exploration is comparable to the frequency reported by their less shy counterparts. That is the “good” news; the “bad” news is that shy students are engaging in





less social exploration, are less satisfied with their current amount of exploration, and are more distressed with their career identity than their less shy counterparts. Furthermore, they report engaging in less exploration than they would like because it is too anxiety provoking and stressful. Thus, to help shy students become successful in their career exploration, it is important for counsellors, family members, and peers to be aware of the feelings the students are experiencing and help them reduce the anxiety and stress associated with the exploration process. One promising method, supported by the results in this study, is by encouraging shy individuals to explore with social support. Having a friend by their side might be the reassurance they need to overcome their anxieties and focus on their healthy development.



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## Appendix A

## Brock University Ethics Clearance

DATE: September 19, 2006

FROM: Julie Stevens, Vice-Chair  
Research Ethics Board (REB)

TO: Linda Rose-Krasnor, Psychology  
Kelly Costain

FILE: 06-036 COSTAIN

TITLE: Exploring Exploration: Career Identity Development and Temperament

The Brock University Research Ethics Board has reviewed the above research proposal.

DECISION: Accepted as is.

This project has received ethics clearance for the period of September 19, 2006 to February 28, 2007 subject to full REB ratification at the Research Ethics Board's next scheduled meeting. The clearance period may be extended upon request. The study may now proceed.

Please note that the Research Ethics Board (REB) requires that you adhere to the protocol as last reviewed and cleared by the REB. During the course of research no deviations from, or changes to, the protocol, recruitment, or consent form may be initiated without prior written clearance from the REB. The Board must provide clearance for any modifications before they can be implemented. If you wish to modify your research project, please refer to <http://www.brocku.ca/researchservices/forms> to complete the appropriate form Revision or Modification to an Ongoing Application.

Adverse or unexpected events must be reported to the REB as soon as possible with an indication of how these events affect, in the view of the Principal Investigator, the safety of the participants and the continuation of the protocol.

If research participants are in the care of a health facility, at a school, or other institution or community organization, it is the responsibility of the Principal Investigator to ensure that the ethical guidelines and clearance of those facilities or institutions are obtained and filed with the REB prior to the initiation of any research protocols. The Tri-Council Policy Statement requires that ongoing research be monitored. A Final Report is required for all projects upon completion of the project. Researchers with projects lasting more than one year are required to submit a Continuing Review Report annually. The Office of Research Services will contact you when this form Continuing Review/Final Report is required.



Please quote your REB file number on all future correspondence.

Brenda Brewster, Research Ethics Assistant  
Office of Research Ethics, MC D250A  
Brock University  
Office of Research Services  
500 Glenridge Avenue  
St. Catharines, Ontario, Canada L2S 3A1  
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email: reb@brocku.ca  
<http://www.brocku.ca/researchservices/ethics/humanethics/>



## Appendix B

### Instructions to Participants (at beginning of survey)

# 5555

This is your unique ID code. Please write it down now.

**If you decide, at some point during the completion of this questionnaire, that you do not want to complete the entire questionnaire at the current time, please take the following steps:**

1. Make sure you have written down your unique code somewhere so that you will be able to find it later. This code will also appear at the top of each page of this questionnaire. Also, you should write down this website link:

**<http://www.brocku.ca/explorationstudy>**

2. If you are close to the end of the page you are working on and decide that you want to quit, it is recommended that you complete the page you are working on, and click 'save and continue'. Each time you click 'next page', your data is saved and associated with your unique ID code. If you do NOT click 'save and continue' your progress will be lost when you close your browser.
3. Close your browser.
4. When you want to 'sign in' and complete the questionnaire, come back to our website (the link mentioned above) and enter your unique ID code on the first page that appears (the 'consent form' page).
5. Hit 'continue', and you will be taken to the page that follows the one you last completed. You can continue completing the questionnaire at this point.

While you are able to sign in and leave this questionnaire, it is recommended that you complete it all at once. **Please note that you have up to ONE WEEK to finish completing this questionnaire once you have begun filling it out. Once this time expires your unique ID code will no longer be valid.**

Please remember you must use the same unique ID code when you re-enter the website.

Begin Questionnaire!





## Instructions to Participants (upon completion of survey)

### Thank you for completing the survey.

As previously described, the objective of this research is to examine the career identity exploration processes of young adults. The following is a brief explanation of how the current study fits into, and addresses gaps in the identity and temperament literatures.

*Exploration and commitment* have been described as two processes central to the development of a healthy identity (Marcia, 1966). Although research has demonstrated the importance of identity exploration and has documented the relationship between personality dimensions such as self-esteem and self-monitoring to one's orientation to explore (Grotevant, 1987), many questions have been left unaddressed in the exploration research. For example, must exploration consist of social interaction, or, can exploration consist of solitary activities? Is going out and engaging with others the best/most healthy way to explore, or, does this depend on one's temperament? Should individuals spend their time exploring alternatives in detail (depth) or should they spread their time exploring many alternatives simultaneously (breadth)? These questions are a few of which will be examined in the present research.

In addition to exploring the above research questions, this study also aims to add to the limited literature linking shyness with identity. For example, research has demonstrated that shy individuals may experience difficulties during transitional phases of their life, such as from late adolescents to early adulthood (Casper, Bem, & Elder, 1988). Similarly, Hamer & Bruch (1994) found that shy individuals are more likely to be identity diffused ("less healthy") and less likely to be identity achieved ("healthy"). It remains unclear, however, whether these findings are indicative of shy individuals engaging in less exploration than their non-shy counterparts. Furthermore, answers to other questions remain unclear such as whether shy individual are *less satisfied* with their career exploration, whether they engage in more *self-exploration* than *environmental exploration*, and whether they make use of *social support* when exploring.

These questions, in addition to others, will be included in the present study. Results may increase our understanding of how temperament is related to career identity exploration activities. This new knowledge may be beneficial to individuals who are currently exploring their alternatives and, in addition, to career counsellors who are lending advice and support to young adults.

If you have questions please contact Kelly Costain  
kc05ae@brocku.ca  
MC B305

Reminder: To receive research participation marks for this study you must come by the researcher's office during the times listed below to receive a signed consent form (and drop off your completed survey). If you cannot come during these times please email the researcher to arrange another time.

#### Office hours:

Mon – 11am-12pm  
Wed – 3:30-4:30pm  
Thursday – 4-6pm

Results from this study will be sent to participants who indicated they were interested by including their email address on the consent form.





## Appendix C

## Brock University Ethics Modification Approval

FROM: Julie Stevens, Vice Chair  
Research Ethics Board (REB)

TO: Linda Rose-Krasnor, Psychology  
Kelly Costain

FILE: 06-036 - COSTAIN

DATE: January 30, 2007

END DATE: February 28, 2007

The Brock University Research Ethics Board has reviewed the research proposal:

Exploring Exploration: Career Identity Development and Temperament

The Research Ethics Board finds that your modification request to an ongoing project involving human participants conforms to the Brock University guidelines set out for ethical research.

Brenda Brewster, Research Ethics Assistant  
Office of Research Ethics, MC D250A  
Brock University  
Office of Research Services  
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<http://www.brocku.ca/researchservices/ethics/humanethics/>



Appendix D  
Career Identity Development Questionnaire Measures  
Demographics

**The following questions relate to general information that describes you and your family. These questions will help us understand if people from different kinds of backgrounds might have different opinions and experiences. Remember that all responses are kept confidential.**

*How old are you?(b/w 17-25)* \_\_\_\_\_

*What is your gender?*      ☐ MALE      ☐ FEMALE      ☐ TRANSGENDER

*What year of university are you in?* \_\_\_\_\_

*Which of the following ethnic groups does your family most identify with? (please circle)*

North American	Aboriginal	British Isles	French	European
Arab	West Asian	South Asian	East and Southeast Asian	African
Pacific Islands	Latin, Central, and South American		Caribbean	Other

<i>What is the highest grade your mother (or female guardian) completed?</i>	Not applicable	Did not finish high school	Finished high school	Some college or university	Finished college or university	Finished graduate degree
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### General Career Exploration Questions

The following are a few general questions that relate to your past career-related activities and current career attitudes.

In high school, did you take a career studies course? ☐ YES ☐ NO

If yes, how many years ago was this?

Have you received any form of career counselling?  
(e.g. career services at University) ☐ YES ☐ NO

If yes, please indicate where you received this counselling.

---

“What would you like to be when you grow up?”  
(i.e. career aspirations)

---

How long have you felt this way about “what” you would like to be?

How confident are you that this is  
the career you would like to pursue?

Not Confident	Somewhat Confident	Very Confident
------------------	-----------------------	-------------------

How important is it for you, at this point in your life, to make a career choice?

Not at all important	Somewhat important	Moderately important	Very important
-------------------------	-----------------------	-------------------------	-------------------

Exploring and deciding on an occupation or career may be considered part of identity development. How interested, in general, are you about developing the career domain of your identity?

Not at all Interested	Somewhat interested	Moderately interested	Very interested
--------------------------	------------------------	--------------------------	--------------------





### Shyness and Sociability Scale

**Please read each item carefully and decide to what extent it is characteristic of your feelings and behaviour. If it is very uncharacteristic of your feelings and behaviour, answer with a 0; if it is very characteristic of your feelings and behaviour, answer with a 4. If you feel neutral or undecided the midpoint is 2.**

	Very uncharacteristic	uncharacteristic	Neutral	characteristic	Very characteristic
	0	1	2	3	4
1. I feel tense when I'm with people I don't know well.	0	1	2	3	4
2. I am socially somewhat awkward.	0	1	2	3	4
3. I do not find it difficult to ask other people for information.	0	1	2	3	4
4. I like to be with people.	0	1	2	3	4
5. I am often uncomfortable at parties and other social functions.	0	1	2	3	4
6. When in a group of people, I have trouble thinking of the right things to talk about.	0	1	2	3	4
7. It does not take me long to overcome my shyness in new situations	0	1	2	3	4
8. I welcome the opportunity to mix socially with people.	0	1	2	3	4
9. It is hard for me to act natural when I am meeting new people.	0	1	2	3	4
10. I feel nervous when speaking to someone in authority.	0	1	2	3	4
11. I prefer working with others than alone.	0	1	2	3	4



	Very uncharacteristic	uncharacteristic	Neutral	characteristic	Very characteristic
	0	1	2	3	4
12. I have no doubts about my social competence.	0	1	2	3	4
13. I have trouble looking someone right in the eye.	0	1	2	3	4
14. I find people more stimulating than anything else.	0	1	2	3	4
15. I feel inhibited in social situations.	0	1	2	3	4
16. I do not find it hard to talk to strangers.	0	1	2	3	4
17. I am more shy with members of the opposite sex.	0	1	2	3	4
18. I'd be unhappy if I were prevented from making many social contacts.	0	1	2	3	4

### Occupational Identity Scale

**Below is a set of statements about your occupational plans. Please evaluate them as you disagree or agree with the statements, from 1 (strongly disagree) to 5 (strongly agree).**

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
	1	2	3	4	5
1. At the present moment, I don't know exactly what I want as a career, but I am examining several occupational perspectives.	1	2	3	4	5
2. I am being bombarded with many suggestions about what I should choose as an occupation, and I am trying to decide which one is best for me.	1	2	3	4	5



	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
	1	2	3	4	5
3. After many doubts and considerations, I have it clearly in my mind what my occupation will be.	1	2	3	4	5
4. The occupation I have chosen is a tradition in my family and I feel I would like to follow the family tradition.	1	2	3	4	5
5. After analyzing many possible occupational options, I believe I have decided on a specific career.	1	2	3	4	5
6. The fact of not being certain about my occupational future bothers me.	1	2	3	4	5
7. At this point, I am not worried about what type of job I will do most successfully; I'll think about it in the future.	1	2	3	4	5
8. When I was a child I decided on my career and I have never seriously considered other alternatives.	1	2	3	4	5
9. I am struggling with several ideas in mind for my future occupation and I feel I have to choose something specific very soon.	1	2	3	4	5
10. Although I am in a certain line of studies, I am still actively looking into other things for my studies and future work.	1	2	3	4	5
11. It is too early for me to be concerned about my professional future.	1	2	3	4	5
12. I am presently trying to decide about my future occupation. But nothing is resolved yet.	1	2	3	4	5
13. My parents' recommendations for my future occupation have helped me in deciding what my profession will be.	1	2	3	4	5
14. If there are no clear openings in my field of studies, I'll change my career without much concern.	1	2	3	4	5
15. I haven't had any problem in choosing my future occupation, since my parents gave to me a good orientation long ago.	1	2	3	4	5
16. I don't have it clear in my mind what my professional place in society is, but I am not concerned about it.	1	2	3	4	5





	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
	1	2	3	4	5
17. I wish I could soon decide on my ultimate career goal out of the options I am considering, so that I could choose the more appropriate program of study.	1	2	3	4	5
18. My folks' suggestions have helped me avoid a lot of problems in picking out a career.	1	2	3	4	5
19. Nowadays the occupational world is so complex that I cannot commit myself to any type of occupation. I'll see what happens in the future.	1	2	3	4	5
20. After asking a lot of people and finding information, I am sure of what I want and I will not be comfortable until I reach that occupation.	1	2	3	4	5
21. I am thinking seriously about my professional future, since I have many doubts about it.	1	2	3	4	5
22. I am committed to my vocation and I wouldn't easily change it, since it took me so much effort to make up my mind.	1	2	3	4	5
23. It was hard for me to decide on a career, but now, when I look at myself I think that I will fit the profession I've chosen.	1	2	3	4	5
24. In choosing a career, I didn't go through a struggle because my folks have the right direction for me.	1	2	3	4	5
25. Some time ago I went through a crisis of decision, but now I can say that I have a clear goal regarding my future occupation.	1	2	3	4	5
26. My father/mother seems to enjoy so much their occupation that I am going into his/her type of job.	1	2	3	4	5
27. I have gone through a lot of struggle to decide what my career will be, but that is not a problem anymore.	1	2	3	4	5
28. Although I don't have a clear idea of what my occupation will be, I don't care at this point.	1	2	3	4	5





## Exploration in Breadth

The following questions pertain to your frequency of considering, examining, and/or exploring across a ***broad range of careers of interest***. Please read each question carefully and rate how true it is of your exploratory behaviour. Answer 1 if it is completely UNTRUE of your behaviour; answer 5 if it is completely TRUE.

	Completely untrue	Untrue	Sometimes true/sometimes no	True	Completely true
	1	2	3	4	5
1. I have considered pursuing different kinds of careers.	1	2	3	4	5
2. I have tried to learn about different careers to find the best one for me.	1	2	3	4	5
3. I have discussed career opportunities with a number of people who believe differently than I do.	1	2	3	4	5
4. I have never questioned my career aspirations	1	2	3	4	5

When attempting to determine which career would suit me best, I tend to investigate various career possibilities, examining ***numerous alternatives simultaneously***.

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

completely untrue

sometimes true/  
sometimes not

completely true



## Exploration in Depth

The following questions pertain to the thoroughness/detail with which you explore a (one) particular career of interest. Please read each question carefully and rate how true it is of your exploratory behaviour. Answer 1 if it is completely UNTRUE of your behaviour; answer 5 if it is completely TRUE.

	Completely untrue	Untrue	Sometimes true/sometimes no	True	Completely true
	1	2	3	4	5
1. I try to find out a lot about my career of interest	1	2	3	4	5
2. I often reflect on my career of interest.	1	2	3	4	5
3. I make a lot of effort to keep finding out new things about my career of interest.	1	2	3	4	5
4. I often try to find out what other people think about my career of interest.	1	2	3	4	5
5. I often talk with other people about my career of interest.	1	2	3	4	5

Please answer the following:

When attempting to determine which career would suit me best, I tend to focus on discovering as much as there is to know about *one specific career of interest*. I make a decision about its suitability with my goals and values, and only explore other alternatives if this one doesn't seem suitable for me.

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

completely untrue

sometimes true/  
sometimes not

completely true



### Exploration Styles – Engagement

The following questions are designed to measure career exploration behaviours you have engaged in.

Some items describe behaviours that you may have engaged in with the intent of uncovering/discovering *your personal attributes* (such as your goals, beliefs, values and aspirations) in relation to career interests. Other items are designed to measure behaviours you have engaged in with intent to search and gather *information about careers of interest*

Please read each item *carefully* and rate the extent to which you have engaged in the following behaviours *over the past year*. Answer 1 if you have engaged in the activities very little; answer 5 if you have engaged in the activities a great deal.

	Little	Somewhat	Moderate amount	Substantial amount	Great Deal
	1	2	3	4	5
1. Thought about how my past experiences are connected with my future career.	1	2	3	4	5
2. Talked about my past experiences with a career or guidance counsellor	1	2	3	4	5
3. Discussed career possibilities with knowledgeable individuals such as career advisors.	1	2	3	4	5
4. Focused my thoughts on me as a person	1	2	3	4	5
5. Surfed the web as a means to investigate various career possibilities.	1	2	3	4	5
6. Went to various career orientation programs.	1	2	3	4	5
7. Remembered personal experiences when thinking about my career of interest.	1	2	3	4	5
8. Watched television programs relevant to career interests.	1	2	3	4	5
9. Through conversation with a career guidance counsellor became aware of my values and how they relate to my future career.	1	2	3	4	5





	Little	Somewhat	Moderate amount	Substantial amount	Great Deal
	1	2	3	4	5
10. Called or dropped by job establishments or job banks to obtain <b>information</b> about a specific <b>job</b> or company.	1	2	3	4	5
11. Initiated conversations with knowledgeable individuals in my <b>career area of interest</b> .	1	2	3	4	5
12. Engaged in conversations about <b>me as a person</b> with a career or guidance counsellor.	1	2	3	4	5
13. Read books by experts in my <b>career area of interest</b> .	1	2	3	4	5
14. Understood the importance of <b>past behaviours</b> for my future career.	1	2	3	4	5
15. Discussed with a career or guidance counsellor how <b>my past</b> connects with my future career.	1	2	3	4	5
16. Obtained information on <b>specific jobs or companies</b> by searching for them on the Internet.	1	2	3	4	5
17. Talked about <b>my beliefs</b> in relation to my career during conversations with a career or guidance counsellor	1	2	3	4	5
18. Thought about <b>my past</b> .	1	2	3	4	5



## Social Styles - Helpfulness

The previous questions asked you to report which exploratory behaviours you have *actually* engaged in. The next set of questions are similar, however, they ask you to think about the probability that engaging in each activity will result in obtaining your career goals. That is, how helpful do you believe each activity to be when exploring your career interests?

If you believe the activity is very *unhelpful* (low probability of helping you achieve your career goals) then answer *1*. If you believe the activity is very helpful (high probability of helping you achieve your career goals then answer 5).

	Very low probability	Low probability	Moderate Probability	High probability	Very high probability
	1	2	3	4	5
1. Assessing myself for the purpose of finding a job that meets my needs	1	2	3	4	5
2. Searching the web to learn about <b>different careers</b> .	1	2	3	4	5
3. <b>Discussing my past</b> with others which subsequently leads to an understanding of how particular behaviours are significant for my future career.	1	2	3	4	5
4. Learning more <b>about myself through conversations</b> with others	1	2	3	4	5
5. Initiating conversations with friends and relatives <b>about careers</b>	1	2	3	4	5
6. Focusing <b>my thoughts</b> on me as person.	1	2	3	4	5
7. Obtaining information on general <b>job opportunities</b> in my career area by visiting job banks and/or organizations of interest.	1	2	3	4	5



	Very low probability	Low probability	Moderate Probability	High probability	Very high probability
	1	2	3	4	5
8. <b>Assessing myself through feedback</b> from others for the purpose of finding a job that meets my needs.	1	2	3	4	5
9. Reading books that focus on <b>career interview</b> processes.	1	2	3	4	5
10. Understanding a new relevance of <b>past behaviour</b> for my future career	1	2	3	4	5
11. Learning more about myself by means of <b>self-reflection</b>	1	2	3	4	5
12. Searching the web to obtain information on general <b>job opportunities</b> in my career area.	1	2	3	4	5
13. <b>Talking with others</b> about the <b>type of person I am</b>	1	2	3	4	5
14. Initiating <b>conversations</b> with several other students about their <b>career interviews</b> .	1	2	3	4	5



The following is a list of four different exploration methods. Please read through each one carefully before responding. After you have read through each one, rank these exploration methods from 1 (most likely) to 4 (least likely) according to the probability that they will result in you obtaining your future career goals.

Please use each number, 1 through 4, only once!

<b><u>Social Environmental Exploration</u></b> – acquiring information about <b>jobs</b> through activities that involve <b>interacting</b> with other people. For example, career workshops and volunteer work.	
<b><u>Non-Social Environmental Exploration</u></b> – acquiring information about <b>jobs</b> through activities that can be <b>alone</b> . For example, searching the Internet and reading books.	
<b><u>Social Self-exploration</u></b> – acquiring information about <b>oneself (such as values and goals)</b> through activities that involve <b>interacting</b> with other people. For example, discussions with career/guidance counsellors.	
<b><u>Non-Social Self-exploration</u></b> – acquiring information about <b>oneself (such as values and goals)</b> through activities that can be done <b>alone</b> . For example, through self-reflection.	





## Social Support

The following questions continue to inquire about your preferences for career exploration. However, we are now interested in to what extent you predict that you will engage in the following activities within the next year (a) by yourself, and (b) with one or more friends?

Please note that there should be TWO responses per item.

## Response Options:

- 1 = Little  
 2 = Somewhat  
 3 = Moderate Amount  
 4 = Substantial Amount  
 5 = Great Deal

	Alone	With friend(s)
1. Experiment with different <i>career activities</i> through volunteer work/job shadowing.		
2. Seek opportunities to <i>demonstrate skills</i> to individuals already employed in your career area of interest.		
3. Visit with a career/guidance counsellor to discuss how your <i>personal values and goals</i> fit with possible careers.		
4. Try specific <i>work roles</i> just to see if you like them.		
5. Visit career services to take part in a <i>self-assessment</i> interactive workshop (that helps clarify career-related interests).		
6. Discuss with a career-guidance counsellor about how <i>your past</i> fits in with your career aspirations.		



### Exploration Satisfaction and Reasons

The following question relates to your satisfaction with the amount of career exploration you have engaged in to-date. Rate to what degree you agree with the following statement:

*“I am satisfied with the amount of career exploration I have engaged in”*  
(please circle)

strongly disagree	disagree	slightly disagree	slightly agree	agree	strongly agree
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If you have done less career exploration than you would have liked, please indicate why (*check as many that apply*):

- ☐ Not interested
- ☐ Not enough time
- ☐ No social support
- ☐ Too anxiety provoking
- ☐ Too stressful
- ☐ Too difficult
- ☐ Have decided on career (without exploration)
- ☐ Other (please explain) \_\_\_\_\_
- ☐ Not applicable



### Identity Distress

Many people, in particular adolescents and young adults, report difficulties establishing some, or all, parts of their identity. Please rate to what degree you have recently been upset, distressed, or worried over the following identity-related issues in your life. Answer 1 if you have not experienced any distress or worry; answer 5 if you have been very severely upset over the issue.

	No distress or worry	Mild distress or worry	Moderate distress or worry	Severe distress or worry	Very severe distress or worry
	1	2	3	4	5
1. Long-term goals (e.g. finding a good job, being in a romantic relationship, etc)	1	2	3	4	5
2. Career choice (e.g. deciding on a trade or profession, etc)	1	2	3	4	5
3. Friendships (e.g. experiencing a loss of friends, change in friends, etc)	1	2	3	4	5
4. Sexual orientation and behaviour? (e.g. feeling confused about sexual preferences, intensity of sexual needs, etc)	1	2	3	4	5
5. Religion (e.g. stopped believing, changed your belief in God/religion, etc)	1	2	3	4	5
6. Values or beliefs (e.g. feeling confused about what is right or wrong, etc)	1	2	3	4	5
7. Group loyalties (e.g. belonging to a club, school group, gang, etc)	1	2	3	4	5





	Not at all	Mildly	Moderately	Severely	Very severely
	1	2	3	4	5
8. Now please rate your overall level of <u>discomfort</u> (how bad they made you feel) about all of the above issues that might have upset or distressed you <u>as a whole</u> .	1	2	3	4	5
9. Please rate how much uncertainty over these issues <u>as a whole</u> has interfered with you life (for example, stopped you from doing things you wanted to, or being happy)	1	2	3	4	5
10. How long (if at all) have you felt upset, distressed, or worried over these issues <u>as a whole</u> ? (please circle)					
Never or less than a month	1 to 3 months	3 to 6 months	6 to 12 months	More than 12 months	



Appendix E

Zero-Order Correlations Between Engaged In and Belief in Helpfulness  
of Exploration Styles

	1	2	3	4	5	6	7	8
Engaged								
Social Self	--							
Social Environ.	.662**	--						
Non-Social Self	.274**	.207*	--					
Non-Social Environ.	.144*	.334**	.191*	--				
Helpful								
Social Self	.301**	.215*	.413**	.147*	--			
Social Environ.	.094	.158*	.137*	.326**	.429**	--		
Non-Social Self	.266**	.210*	.542**	.259**	.608**	.233**	--	
Non-Social Environ.	-.107†	.028	.010	.575**	.138*	.511**	.192*	--

† $p < .10$ ; \* $p < .05$ ; \*\* $p < .001$











