

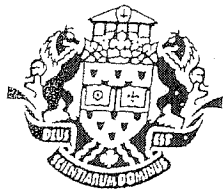
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FACULTY OF GRADUATE AND
POSTDOCTORAL STUDIES

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Catherine E. Amiot

School of Psychology

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Cette thèse est dédiée à mon conjoint Martin Boucher, de même qu'à
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Abstract

On the basis of theoretical work on the self, coping, and self-determination, the goal of this thesis was to understand the role of both structural and more flexible self-related variables in the process of adapting to change as well as the consequences of this adaptation process. It was hypothesized that, in a changing situation, a structural aspect of the self, namely, the sense of self, would predict more positive appraisals and less negative appraisals toward this change. Appraisals and coping, in turn, were hypothesized to represent adaptation processes mediating the associations between sense of self and various consequences. The consequences investigated included psychological well-being, as well as changes in some more flexible aspects of the self, such as in the importance attributed to a new self-component and in self-determined motivation. Three studies were conducted to test these hypotheses. Study 1 ($N = 35$) was a preliminary laboratory experiment designed to induce change (experimental condition) vs. no change (control condition). The impact of the change manipulation on the associations between sense of self and appraisals was first tested using hierarchical moderated regression analyses. While a stronger negative association was found between sense of self and negative appraisals in the experimental (i.e., change) than in the control condition, sense of self did not predict positive appraisals, both in the experimental and in the control conditions. Through mediational analyses, negative appraisals were found to significantly mediate the sense of self – well-being association. Study 2 ($N = 80$) aimed at further testing these hypotheses by including another mediator in the sense of self – well-being association, namely, coping strategies. Again, a stronger association was observed between sense of self and negative appraisals in the experimental than in the control condition. Furthermore, mediational analyses confirmed the mediating role of: (1) negative appraisals in the sense of self – disengagement-oriented coping association, (2) task-oriented coping in the positive appraisals – well-being relationship, and (3) disengagement-oriented coping in the negative appraisals – well-being association. Using a three-wave longitudinal design, Study 3 ($N = 311$) aimed at testing the entire hypothesized model among university students as they were experiencing the transition to university. Using structural equation modeling involving true intraindividual change analyses, sense of self was found to predict both positive and negative appraisals toward the transition to university. While positive appraisals positively predicted task-oriented coping strategies used to deal with the transition and negatively predicted disengagement-oriented coping, negative appraisals positively predicted both forms of coping. Finally, task-oriented coping positively predicted psychological well-being as well as increases in both identification as a university student and in academic motivation, whereas disengagement-oriented coping predicted less well-being and a decrease in academic self-determination. Through tests of indirect effects, the mediating role of appraisals and coping was confirmed. Implications of the findings and future research avenues are further discussed.

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CHAPTER 1

Introduction

Everyday we experience situations requiring us to adjust and change our behaviors in order to cope. While some of these situations are more drastic than others, these changing circumstances compel us to find a way to fit in with our environment while at the same time staying in contact with who we really are and what we want. In this context, are there personality characteristics that predict how one will adapt to such situations? What precisely will be the mechanisms through which we adapt to these changing situations? And finally, what will be the result of these adaptation processes? The perception that we have changed a little in the process? More positive well-being, the feeling that these new behaviors are increasingly “ours”? Considering the role of the self may provide some answers to these questions.

The self has been proposed to be both a structure and a process (e.g., Greenwald & Pratkanis, 1984; James, 1890). In an analogous manner, Markus and Wurf (1987) have proposed that the self-concept comprises components that are relatively stable, and others that are more malleable (see also Banaji & Prentice, 1994; Markus & Kunda, 1986). As a structure, the self directs action and guides behaviors in the different situations encountered, and allows one to take a stand toward those situations. As a process, the self is a dynamic entity that displays some flexibility in its interplay with the environment, notably by its capacity to change and to adapt to various situations. In line with this dual view of the self, self-determination theory (SDT; Deci & Ryan, 1991, 2000, 2002) suggests that the self is not only the product of social evaluations and pressures, but instead is the very process through which a person comes into contact with the social environment and works toward integration of its various elements. “The self is thus both

the agent that integrates new elements and the structure that allows integration of these new functions, values, and propensities” (Ryan, 1993, p. 5).

Based on this conceptualization of the self, the present thesis will aim at understanding the role of self-related variables in the process of adapting to change as well as the consequences of this adaptation process. Several objectives underlie this global purpose. First, this thesis will verify if a specific structural part of the self, namely the sense of self, can predict the processes by which individuals adapt to a changing situation. Second, it will investigate the impact of these adaptation processes on psychological well-being. Finally, this thesis will examine the role of some more dynamic aspects of the self in the context of change by investigating how the importance attributed to a new self-component increases and how one’s motivation becomes more self-determined in such a circumstance.

The Self in Change

Conceptually, changes have been considered to be a specific type of stress. In fact, stress has been defined as “any event in which environmental demands, internal demands, or both, *tax* or *exceed* [emphasis in original] the adaptive resources of an individual, social system, or tissue system” (Monat & Lazarus, 1985, p. 3). Similarly, changes also place demands on the self and require the mobilization of adaptation resources to adjust to these demands. They are more specifically defined as external events that involve specific demands and expectations, and which require the development of new behavioral responses (see also Holmes & Rahe, 1967). Changes imply entering a new psychological situation in which prior beliefs do not necessarily apply and which involves a discontinuity between the self and the situation (Higgins, Loeb, & Ruble, 1995; Ruble & Seidman, 1996).

In the context of stress and, more specifically, change, it appears fruitful to consider both the structural and the malleable aspects of the self. In fact, the self-concept has been proposed to be active, forceful, and capable of adapting as it interacts with its environment (Cross & Markus, 1991). While structural parts of the self have been shown to predict how individuals appraise and adapt to stressful experiences (Lazarus & Folkman, 1984), the more specific self-variations resulting from the process of adapting to change have not been investigated as thoroughly. Recent writings have in fact proposed that social psychology has neglected the investigation of changes in the self (Bennett & Sani, 2004). However, the few studies that have investigated self-related variations in the context of changes have supported the usefulness of accounting for these more flexible aspects of the self (e.g., Cassidy & Trew, 2001; Ethier & Deaux, 1994; Jetten, O'Brien, & Trindall, 2002; Ruble et al., 1990; Showers & Ryff, 1996; Zirkel & Cantor, 1990).

To account for how the self as a structure may act as an antecedent to individuals' reactions to change, Lazarus (1991; Lazarus & Folkman, 1984)'s transactional model of stress and coping appears particularly useful. According to this model, adaptation and coping processes are a reflection of the interplay between the self and the situation. More specifically, this interactionist view proposes that individual differences influence how people react to and cope with stressful circumstances (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). Caspi and Moffit (1991) have further proposed that, in changing circumstances, individual differences accentuate how individuals react to the perceived discontinuities arising in such situations. In changing circumstances, people are forced to rely on their own internal traits to guide their behavior (Snyder & Ickes, 1985). In fact, changes are destabilizing events which require the self to evaluate the situation so as to position itself toward this situation and to develop behavioral responses to deal with it. Changing situations should thus be particularly

likely to heighten and to reflect the impact of structural components of the self on the adaptation process.

Based on the assumption that personality traits are resources that people bring with them in every stressful encounter and influence one's evaluation of the stressful situation (Ingledeu, Hardy, & Cooper, 1997; Rusidill & Edwards, 2002; Terry, 1994), various structural aspects of the self have been identified as antecedents of the adaptation process (see Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001, for a review). In the context of stressful changes, these traits include locus of control (e.g., Callan, Terry, & Schweitzer, 1994; Holahan & Moos, 1987), self-esteem (Holahan & Moos, 1987; Judge, Thoresen, Pucik, & Welbourne, 1999; Terry, 1991), Type A behavior patterns (Terry, 1991), openness to experience (Judge et al., 1999; Wanberg & Kammeyer-Mueller, 2000), extraversion (Wanberg & Kammeyer-Mueller, 2000), and optimism (Brisette, Scheier, & Carver, 2002). Recently, the sense of self has been proposed to be an important structural part of the self (Kernis, Paradise, Whitaker, Wheatman, & Goldman, 2000). In the present thesis, we will aim to test the role of the sense of self as an antecedent to the adaptation process which should have a particularly strong impact on adaptation processes elicited during change.

The Sense of Self

Recently, Kernis and his colleagues (2000) have provided support for the interrelationships among three global aspects of the self that they propose to constitute the sense of self, namely self-esteem stability, self-concept clarity, and self-determination. Stability in self-esteem involves feelings of self-worth that are stable and secure rather than fragile and vulnerable, that generally are unaffected by specific evaluative events, and that should therefore be unlikely to change drastically with changing circumstances (Kernis, Cornell, Sun, Berry, &

Harlow, 1993; Kernis et al., 2000; Kernis & Waschull, 1995). Based on the work of Campbell and her colleagues (Campbell, 1990; Campbell et al., 1996), clarity of the self-concept has been defined as the extent to which the content of an individual's self-concept (i.e., perceived personal attributes) are clearly and confidently defined, internally consistent, and temporarily stable, thus allowing for a coherent sense of direction. Finally, global self-determination refers to the reasons for which behaviors are emitted in the different domains of one's life (Deci & Ryan, 1985, 1991, 2000, 2002).

In fact, self-determination theory (SDT) proposes that self-determined behaviors are those emitted out of choice and pleasure, because they allow the individual to attain important goals, and because they are coherent with one's deepest values. Self-determined forms of motivations include the intrinsic motivation as well as the integrated and identified regulations. Behaviors that are not chosen but are rather emitted out of internal or external pressure are not self-determined. These non self-determined forms of motivation include amotivation, or the lack of motivation, as well as the extrinsic and introjected regulations (Deci & Ryan, 1985, 2000, 2002).

Overall, individuals with a strong sense of self are thought "to have a good sense of who they are, their likes and dislikes, and why they do what they do, whereas those with a low sense of self should experience self-doubt and confusion, buffered around by external pressures and evaluations" (Kernis et al., 2000, p. 1297).

With respect to the composition of the sense of self, Kernis and his colleagues (2000) propose different reasons for why self-concept stability, self-determination, and self-concept clarity should be interrelated to form a unified structural construct. First, they note that people who have unstable and fragile feelings of self-esteem are more dependent on external evaluative

events when determining their self-worth. Similarly, Deci and Ryan (1995) propose that while unstable or contingent self-esteem is anchored in external and introjected self-regulatory processes, true self-esteem emerges out of more self-determined self-regulatory styles.

Second, according to Kernis et al. (2000), self-esteem stability and clarity of the self-concept should be associated given that having an unclear and poorly defined self-concept may lead individuals to rely on and be more affected by specific evaluative information. So, the less confident and internally consistent one's self-knowledge, the less well-anchored one's feeling of self-worth is likely to be, and the more it will be susceptible to external influences.

Finally, the relationship between self-determination and self-concept clarity can be supported by the theoretical proposition that self-determination is associated with greater self-knowledge and to an enhanced access to one's genuine preferences and goals (Deci & Ryan, 1985, 2002).

While Kernis and his colleagues (2000) provided evidence supporting the interconnectedness of those three components forming the sense of self, other studies have also found moderate to strong associations between self-esteem stability and self-certainty (Baumgardner, 1990; Campbell et al., 1996; Kernis, 1993; Vallacher, Nowak, Froehlich, & Rockloff, 2002), as well as between self-determination and contingent self-esteem, which is conceptually close to self-esteem stability (Blanchard, Pritchard, Amiot, & Grouzet, 2004). Yet, the use of the aggregate construct of the sense of self has not been used frequently in past research. Different conceptual reasons support the use, in the present thesis, of an aggregate sense of self construct as a predictor of the processes by which individuals adapt to change.

In fact, the sense of self is conceptualized as a structural part of the self-construct and represents how the self is organized at a global level. Within this global sense of self construct,

each sense of self component captures distinct aspects of the self. Based on a tripartite model, the sense of self components can be considered to cover the cognitive, affective, and behavioral aspects of human functioning. More specifically, self-esteem stability represents the *evaluative* aspect of the self, as it assesses the stability of one's evaluative self-worth. By assessing the clarity of one's self-knowledge, self-concept clarity covers the *cognitive* component of the structural self. Finally, self-determination captures the *behavioral* component of the self as it represents the reasons underlying one's behaviors. By capturing fundamental aspects of the self-structure, these three components should thus complement one another in predicting how individuals adapt to change.

Adaptation and Coping Processes

The self is considered as both a structure which predicts how individuals adapt to change as well as a process capable of flexibility and integration of new components. Yet the precise mechanisms through which the self adapts to stress and change need to be specified.

Adaptation has been defined as the adjustments made to oneself to meet environmental demands, and as a process which involves dealing with, accepting, and meeting these demands (Wolman, 1988). While adaptation is a broad term that covers almost all processes involved in the individual's continuous interaction with the environment, coping refers to the reactions to a fairly drastic change or problem that defies familiar ways of behaving (White, 1974). Coping aims at dealing with external demands and requirements, at developing new responses and behaviors, and at reducing the discrepancy between the person and the environment (Costa, Somerfield, & McCrae, 1996). Coping has been specifically defined as the person's behavioral and cognitive efforts to manage the internal and external demands of a troubled person-environment transaction (Folkman, 1984; see Skinner, Edge, Altman, & Sherwood, 2003, for a

review of coping definitions). Coping, then, has been regarded as a specific category of adaptation process elicited in normal individuals by taxing circumstances, and which should optimally result in the reduction of a discrepancy between the self and its environment.

According to coping models, coping is preceded by the cognitive evaluation of the stressful situation (e.g., Lazarus & Folkman, 1984; Lazarus, 1991; Skinner et al., 2003). Two distinct yet related processes thus comprise the overall adaptation process: a first one refers to appraisals, and a second, which follows, pertains to coping. In the transactional model developed by Lazarus and Folkman (1984), cognitive appraisals represent the knowledge and the personal significance of a situation.

Two types of appraisals have been originally identified by Lazarus and Folkman (1984). Primary appraisals refer to the perceptions and emotions arising from the evaluation of the situation. They represent the evaluation of the significance of this situation (Folkman, 1984; Park & Folkman, 1997), as well as the extent to which the situation represents a threat to one's well-being (Long & Schultz, 1995). Secondary appraisals refer to one's evaluation of the resources available in the coping process, as well as the options and prospects for coping (Lazarus, 1991). When secondary appraisals are formed, coping resources, which include physical, social, psychological, and instrumental assets, are evaluated in terms of the demands of the situation.

Regardless of whether they are primary or secondary appraisals, the importance of *positive* and *negative* appraisals has recently been highlighted to better understand coping processes and their consequences. According to Skinner and her colleagues (2003), positive appraisals, such as challenge appraisals, and negative appraisals, such as threat appraisals, should lead to the use of very specific coping strategies in terms of their adaptiveness. Positive appraisals include positive emotions toward the situation, a positive evaluation of one's

resources to confront this situation, and the feeling that the situation represents a challenge to the self. These appraisals reflect one's degree of confidence that, with effort, the demands of a stressful situation can be overcome (Park & Folkman, 1997). However, negative appraisals include negative feelings toward the stressful situation, a negative evaluation of one's resources to cope with the situation, as well as the feeling of being threatened by it. Negative appraisals thus suggest potential danger to one's well-being or self-esteem and low confidence in one's ability to cope with the situation (Skinner & Brewer, 2002).

Empirical studies have shown that appraising a stressful situation as being positive leads to the use of more adaptive forms of coping when dealing with this situation, while negatively appraising a situation leads to the use of less adaptive forms of coping (e.g., Florian, Mikulincer, & Taubman, 1995; Major, Richards, Cooper, Cozzarelli, & Zubek, 1998; Marco, Neale, Schwartz, Stone, & Shiffman, 1999; Valentiner, Holahan, & Moos, 1994). These relationships have also been observed in the context of stressful transitions and changes (e.g., Heppner, Cook, Strozier, & Heppner, 1991; Levy-Shiff, Dimitrovsky, Shulman, & Har-Eve, 1998; Terry, Callan, & Sartori, 1996).

In order to determine the adaptiveness of various coping strategies, distinctions have been made between different dimensions of coping (e.g., Compas et al., 2001; Endler & Parker, 1994; Lazarus & Folkman, 1984; Rudolf, Dennig, & Weisz, 1995). Although labelled differently across conceptual models, some dimensions have been proposed more systematically in the literature (Skinner et al., 2003). The problem-focused dimension of coping, also labeled primary control coping or assimilation coping, refers to the strategies aimed at doing something concrete in altering the source of the stress, and includes the coping actions used to change or to act directly on some aspects of the stressful situation. A second coping dimension refers to the

emotion-focused dimension, which is analogous to secondary control coping or accommodation coping. This dimension includes coping strategies that aim at changing the meaning of a stressful situation as well as at regulating negative emotions arising from this situation (Brandtstadter & Renner, 1990; Lazarus & Folkman, 1984; Rudolf et al., 1995). The focus with this second coping dimension is on the internal regulation of emotions and on the modification of one's own cognitions rather than on the emission of overt actions to directly change the situation. It has recently been proposed that these two dimensions of coping can be regrouped under a higher-order adaptive coping category given that they both promote a constructive engagement with stressors or with the self's reactions to them, and that they are organized, flexible, and constructive (Skinner et al., 2003). In the present thesis, this higher-order adaptive coping category, which regroups both problem-focused and emotion-focused coping types, will be referred to as *task-oriented coping*.

Another coping category, pertaining to *disengagement-oriented coping* (Compas et al., 2001; Endler & Parker, 1994), refers to the strategies that are employed in order to disengage oneself from the task and to focus on task-irrelevant cues. Disengagement-oriented coping is represented by strategies such as mental and behavioral disengagement, denial, blaming the self or others in the stressful situation, and use of alcohol or drugs. This higher-order coping category has been conceptualized as being less adaptive given that it involves dealing harshly with the self or with the stressful situation, and that it is characterized by rigid, disorganized, or derogatory ways of coping (Skinner et al., 2003).

These two higher-order categories of coping have been proposed to be useful in accounting for how coping mediates the relationship between stress and outcomes such as well-being (Skinner et al., 2003). Generally, task-oriented coping responses have been proposed to

improve the fit between an organism and its environment as well as to alleviate the negative impact of stress, whereas disengagement-oriented coping responses exacerbate the effect of stress (Zeidner & Saklofske, 1996).

A number of studies have used the concept of coping to investigate the processes by which individuals cope with stressful changes. Those have been conducted in the context of organisational changes (Judge et al., 1999; Terry et al., 1996; Terry & Callan, 1997), life transitions such as the entrance to university (Brisette et al., 2002; Cheng, 2001, Study 1; Lopez & Gormley, 2002), the transition to parenthood (Levy-Shiff et al., 1998; Terry, 1991), career transitions (Heppner et al., 1991), the transition from school to work (Cheng, 2001, Study 2), newlyweds moving in together (Cheng, 2001, Study 3), immersion in a new culture (Cross, 1995), as well as residential relocation (e.g., Kling, Seltzer, & Ryff, 1997). These studies have generally shown that in changing circumstances, task-oriented coping strategies lead to more positive consequences, whereas disengagement forms of coping lead to more negative consequences.

Associations between Sense of Self Components and Adaptation Processes

In line with Lazarus and Folkman (1984)'s transactional model of stress and coping, the sense of self will be investigated as a structural part of the self which should predict adaptation to change processes. Although no study to date has tested the role of the sense of self, as an aggregate variable, in the adaptation process, this section presents theoretical and empirical evidence for the relationships between each of the three sense of self components as well as appraisals and coping processes.

Self-esteem stability. Following Taylor's cognitive adaptation theory (1983), self-esteem has been one of the most studied antecedents to coping, showing a positive relationship with

task-oriented coping and a negative association with disengagement-oriented coping (Judge et al., 1999). Despite the importance attributed to the self-esteem construct in the social psychological literature, the importance of self-esteem stability is receiving increasing attention (Kernis et al., 2000). In fact, research has shown that even after controlling for absolute self-esteem level, stability of self-esteem was related to a lesser focus on the self-esteem threatening aspects of interpersonal events (Waschull & Kernis, 1996), less defensive reactions in response to negative feedback (Kernis et al., 1993), lower depressive symptoms when faced with daily hassles (Kernis et al., 1998), less extreme reactions to everyday positive and negative events (Greenier et al., 1999), and lower levels of anger and hostility (Kernis, Grannemann, & Barclay, 1989).

Accounting for the importance of the vulnerability of self-esteem, White (1974) proposed that one thing that must be enhanced or at least maintained in the adaptation process is the level of self-esteem. According to him, one's maintenance of self-esteem in the adaptation process allows to keep intact a satisfactory self-picture and to preserve one's sense of competence. However, when self-esteem is fragile and subject to being destabilized by external events, questions regarding one's value can lead to appraisals of anxiety, shame, or guilt (White, 1974). Self-esteem stability thus appears particularly relevant to assess in times of change given that such changing situations involve ambiguity and instability, and can be appraised as being threatening to one's self-esteem (e.g., Greenier et al., 1999).

Self-concept clarity. Various reasons suggest that self-concept clarity, within the sense of self construct, should also contribute to the prediction of how individuals appraise and cope with change. First, a clear self-concept has been proposed to facilitate adaptive primary and secondary appraisals of stressful events (Folkman et al., 1986). It has also been proposed that a coherent,

well-integrated identity structure provides a sense of purpose and direction, and serves as the basis for effectively coping with and adapting to the demands of daily life (Berzonsky & Kuk, 2000). Moreover, self-certainty has been shown to lead to an enhanced processing of self-relevant information (Setterland & Niedenthal, 1993), which suggests that individuals with a high sense of self process self-relevant information more thoroughly when guiding their behavior. Thus, because individuals with a clear self-concept have, by definition, more precise self-knowledge, they should be able to optimally position themselves toward a changing situation, to have greater behavioral options to draw upon when confronted to such a situation, and to choose the coping strategies that suit them best, without being overly influenced by external stimuli (e.g., Campbell et al., 1996; Kernis et al., 2000). On the other hand, if the self-concept is not well-defined but is conflicted, it is unlikely to provide meaningful input into people's reactions and behaviors, therefore promoting greater responsiveness to immediately salient contextual cues (Campbell, 1990).

To our knowledge, only one study has investigated the link between self-concept clarity, appraisals of stress, and coping styles (Smith, Wethington, & Zhan, 1996). Results of this study revealed positive relationships between clarity of the self-concept and the use of task-oriented coping strategies, and negative associations between self-concept clarity and disengagement-oriented forms of coping. While self-concept clarity was also negatively associated with appraisals of stress and of anxiety, the associations between self-concept clarity and coping held over and above the associations between self-concept clarity and these negative appraisals, thus providing preliminary evidence for the impact of self-concept clarity on both appraisals and coping as adaptation mechanisms.

Self-determination. It has been proposed that one's motivational orientation shapes the experience of stress. According to Skinner and Edge (2002), self-determination acts like a source of energy and direction for cognitions, emotions, and behaviors during stressful situations. A self-determined orientation should thus lead to more adaptive forms of coping by reducing objective environmental demands, by leading people to appraise stressful interactions as challenges rather than as threats, and by triggering adaptive action tendencies. However, during stressful events, non self-determination has been proposed to undermine coping by increasing objective demands, by emphasizing the experience of threat, and by triggering maladaptive action tendencies (Skinner & Edge, 2002).

Theoretically, self-determination has been characterized by a greater awareness of one's inner needs (Deci & Ryan, 1985), as well as by an enhanced access to one's genuine preferences, desires, and goals (Ryan & Connell, 1989; Skinner & Edge, 2002). Empirically, self-determination has been associated with greater self-consistency (Koestner, Bernieri, & Zuckerman, 1992). Skinner and Edge (2002) proposed that when negotiating the environmental demands involved in stressful situations, these characteristics should enable self-determined individuals to maintain access to their goals and to display open and flexible actions allowing them to "stay in touch with" the hierarchy of their genuine priorities. These authors add that when people have access to motivational resources, the regulation of their actions should be more adaptive, that is, more organized and coherent, more flexible and open to internal and external information, and more constructive. In a similar vein, Hodgins and Knee (2002) propose that the more self-determined one's orientation, the more will new experiences be met openly and will be integrated into one's self. A non self-determined motivation, however, should be associated with difficulty accessing one's genuine goals, with a greater responsiveness to

external cues and demands, and with expectations that the social context is intentionally coercive, thus making the stressful situation appear more stressful. In line with these theoretical propositions, self-determination should thus represent another component of the sense of self predicting more adaptive reactions to change.

At a theoretical level, studying the relationships between self-determination and adaptation processes allows to bridge two theoretical frameworks that seek to explain optimal human potentials and well-being. Doing so also responds to Lazarus (1991)'s contention that motivation should be considered when investigating coping processes. However, evidence supporting the association between self-determination and coping is still scarce. In their one-semester prospective study, Knee and Zuckerman (1998) have reported significant and meaningful associations between motivation and general coping styles. Whereas self-determined motivation was negatively associated with disengagement-oriented forms of coping and positively associated with task-oriented coping strategies, non self-determined motivation was associated with a greater use of disengagement-oriented coping strategies.

More recently, Knee, Patrick, Vietor, Nanayakkara, and Neighbors (2002) have investigated the associations between self-determination and coping strategies in the context of a stressful disagreement or argument with one's romantic partner. Their results indicated that a self-determined orientation was positively associated with task-oriented coping when dealing with the stressful interpersonal disagreement, whereas a non self-determined orientation was positively associated with disengagement forms of coping. Similar results were obtained in a study conducted in the context of a stressful sport competition (Amiot, Gaudreau, & Blanchard, 2004), which revealed that self-determination toward sport predicted the use of task-oriented

coping strategies during the competition, whereas a non self-determined orientation was associated with the use of disengagement-oriented coping.

Together, these theoretical and empirical considerations lead us to expect that each structural component of the sense of self should represent an active ingredient, within the overall sense of self construct, predicting how individuals adapt to stressful and changing circumstances. Furthermore, each component of the sense of self has been linked to a variety of positive outcomes (Campbell, 1990; Campbell et al. 1996; Kernis et al., 2000; Vallerand, 1997), even in the context of stressful or changing situations (e.g. Boggiano, 1998; Kernis & Waschull, 1995; Koestner & Losier, 2002). However, the exact mediating processes through which the sense of self is associated with positive consequences in such situations remain to be identified. This thesis thus aims to explore the role of appraisals and coping as possible processes mediating the relation between the sense of self and positive consequences.

Consequences of Coping

The coping framework proposed by Skinner and her colleagues (2003) presents the advantage of specifying, in an a priori manner, which higher-order coping category will have adaptive and beneficial consequences. As mentioned previously, while the task-oriented coping category is considered more adaptive and should predict more positive consequences, the disengagement-oriented coping category is conceptualised as being less adaptive and should yield less positive consequences. In the context of the present thesis, three types of consequences will be investigated. First, psychological well-being will be investigated as a consequence of the coping process (see Ryan & Deci, 2001). The two other consequences refer to changes in motivation and in the importance attributed to a new self-component. By investigating these two consequences, which are conceptualized herein as indicators of integration, this thesis will

investigate the self as a process and will provide preliminary support for the integration mechanisms proposed by SDT in the context of a changing situation.

Well-being. Adjustment occurs when people bring a current state to a more satisfactory state and achieve mental and behavioral balance between their own needs and the demands of others (Higgins et al., 1995). Similarly, well-being reflects the result of having been able to establish a balance between personal competence and environmental demands (Freund & Baltes, 2002). Because changes involve dealing with new demands which can produce discontinuities between the self and the environment, psychological adjustment and well-being are thus particularly relevant constructs to investigate as consequences of changing circumstances.

During stress and change, the use of the more adaptive task-oriented coping strategies has been associated with enhanced psychological well-being, whereas disengagement-oriented coping negatively predicted well-being. These associations were obtained when well-being was conceptualized as a lack of perceived stress (Brisette et al., 2002; Cross, 1995; Heppner et al., 1991), depressive symptoms (Brisette et al., 2002; Heppner et al., 1991; Kling, Seltzer, & Ryff, 1997), physical, emotional, and mental exhaustion (Levy-Shiff et al., 1998), anxiety (Callan et al., 1994), as well as a more positive general health (Terry, 1991) and job satisfaction (Judge et al., 1999). Based on this empirical evidence and on propositions made by Skinner and her colleagues (2003), this thesis will aim at testing the impact of both task-oriented and disengagement-oriented coping strategies on well-being.

Integration indicators. Whereas changing events are by definition external to the individual, they also have the potential to trigger changes within the self and in one's self-definition (Cowan, 1991; Strauss & Goldberg, 1999), as well as to lead to the integration of new behaviors, roles, and identities (Ryan & Deci, 2003). In line with the conceptualization of the

self as a process, integration occurs when new elements become incorporated in the self (Baumeister, 1998). In the context of change, the integration of novel self-elements is particularly important as individuals strive both to assimilate external events so as to fit with the external demands, while at the same time preserving their personal integrity and coherence (Ryan, 1995).

According to SDT, people have a tendency to strive for coherence among aspects of their self, and also seek to uncover new aspects that can be integrated (Deci & Ryan, 1991). Based on this theoretical perspective, integration involves how various identities are organized, or reciprocally assimilated and brought into congruence with the organismic experience as a whole. Only to the extent that some new element is brought into harmony with the characteristics of one's inherent self will that element be integrated and become part of one's self (Deci & Ryan, 2000). For SDT theorists, integration thus aims at unity within the self and at bringing coherence in regulatory activity and experience (Deci & Ryan, 1991).

Other theorists have recognized the importance of the integration phenomenon. Carver and Scheier (2000) propose that integration occurs when one is able to establish links between the new element to be integrated and the elements that are already in place in the self. In the context of change, Higgins and his colleagues (1995) similarly stated that integration occurs when new information is integrated with the self's pre-entry knowledge, goals, and standards. The experience of change thus provides the opportunity to investigate how new elements become integrated in the self.

Certain aspects of the self have been observed to vary due to changes such as life transitions (Cassidy & Trew, 2001; Ethier & Deaux, 1994; Harter & Whitesell, 2004; Ruble et al., 1990; Zirkel & Cantor, 1990), organizational changes (Jetten et al., 2002), relocation

(Hormuth, 1990; Kling, Ryff, & Essex, 1997; Showers & Ryff, 1996), and cultural changes (Kessler & Mumendey, 2002). While some studies have outlined methods for assessing integration in the self (e.g., Deci, Eghrari, Patrick, & Leon, 1994; Donahue, Robins, Roberts, & John, 1993; Harter & Monsour, 1992; Koestner et al., 1992; Sheldon & Kasser, 1995), few studies have investigated, during a change, the integration of a new self-component in a longitudinal manner. In a study investigating self-change in the context of the transition to fatherhood (Strauss & Goldberg, 1999), new fathers were found to add a new self-component (i.e., being a father) to their self. When doing so, they were found to reorganize the already existing aspects of the self and to integrate the new self-component into their established repertoire of roles (Cowan, 1991). Based on these empirical advances, the present thesis will assess, in the context of a changing situation, the variation in the importance attributed to a new self-component. Doing so will allow to gather preliminary data on the integration phenomenon and to test whether the proposed adaptation processes do in fact result in greater integration in the self.

According to SDT, integration not only results in changes in the self but also yields increasing levels of self-determined motivation (Deci & Ryan, 2000; Ryan & Deci, 2003). Similarly, Tice (1992) argued that self-concept change should be accompanied by the internalization of new behaviors into the existing self-structure. In the present thesis, increases in self-determination will therefore be assessed as a second indicator of integration.

From a SDT point of view, integration takes place when individuals assimilate and reconstitute formerly external regulations so that they can take them into their self and be self-determined while enacting them. It represents the organism's acquisition of internal regulations to replace external ones. According to Deci and Ryan (1991, 2000), when the integration process

functions optimally, people will identify with the importance of new behaviors and social regulations, assimilate them into their self, and fully accept them as their own. When behaviors emerge from the self, they are considered as self-regulated or autonomous, which means that they are relatively consistent with and are enacted from the self (Ryan, 1993). Thus, the more fully a regulation becomes integrated, the more it becomes part of the self and the more it is the basis for self-determined behavior.

Few investigations have examined increases in self-determination over time. In a cross-sectional study, Chandler and Connell (1987) showed that, with increasing age, children display greater internalized reasons for performing different behaviors, thus suggesting an increase in self-determination over time. In longitudinal studies conducted among medical students throughout their training (Williams & Deci, 1996), it was found that when instructors were more supportive of their students' need for autonomy in the context of the course, students showed a greater increase in self-determined motivation for learning the course material.

In another longitudinal study, Green-Demers (1997, Study 3) investigated whether the use of interest-enhancing strategies when coping with uninteresting academic tasks could predict increases in both interest toward these tasks and in academic self-determined motivation throughout a 10-week period. Results from true change structural equation modeling procedures (Raykov, 1992) revealed that the use of interest-enhancing strategies was positively associated with students' attentional involvement with the boring academic tasks, which then predicted an increase in interest toward these tasks. This increase in interest in turn predicted an increase in self-determined academic motivation. These results reveal that when using the appropriate strategies, self-determined motivation can be increased as behaviors become more integrated into one's self. Such results are of particular importance to this thesis because they reveal that

intrapersonal processes, such as interest-enhancing strategies, can predict true increases in self-determined motivation over time (Green-Demers, 1997).

We propose that another type of intrapersonal process, namely coping strategies, should predict our two indicators of integration (i.e., increased importance attributed to a new self-component and increase in self-determination). In line with this prediction, Skinner and Edge (2002) have proposed that constructive coping is the key loci of self-development and that prolonged negotiations with environmental demands characterize the very process of integration, through which originally extrinsic goals and behaviors become integrated in the true self and hence autonomously regulated (see also Deci & Ryan, 1991; Ryan, 1993). As a final aim, this thesis will thus seek to verify if coping strategies can predict both the increased importance attributed to a new self-component and an increase in self-determination toward a new life domain. Altogether, coping strategies should not only predict psychological well-being, but they should also predict these two integration indicators.

The Present Project

Objectives

Two main objectives underlie the present thesis. First, this thesis will seek to test the role of the sense of self, as a structural part of the self, in predicting how individuals appraise a changing situation. Second, this thesis will aim at investigating the mediating role of two adaptation processes, notably, appraisals and coping, in the associations between the sense of self and three consequences, including psychological well-being, changes in the importance attributed to a new self-component, as well as changes in self-determined motivation. Three empirical studies were conducted to achieve these goals. Figure 1 presents an overview of these associations.

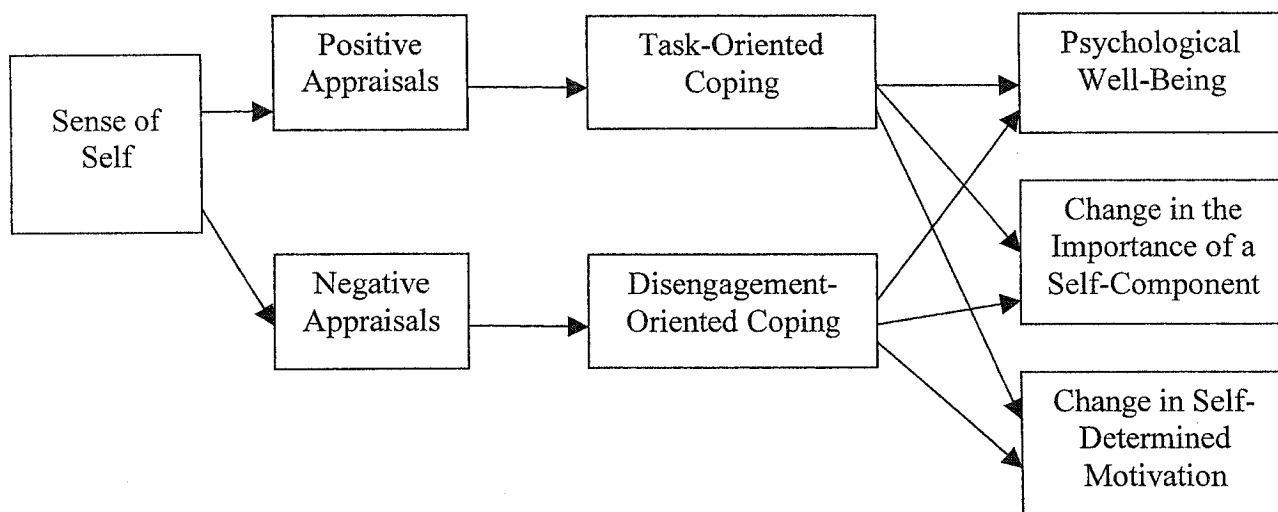


Figure 1. Overview of the model investigated.

While the first two studies will investigate only psychological well-being as a consequence of adaptation processes, Study 3 will allow to assess the entire set of consequences (i.e., well-being, change in the importance attributed to a new self-component, change in self-determination).

Overview of the Studies

The first two studies of this thesis were designed to test, during a laboratory-induced change, the impact of the sense of self on appraisals toward this change. Furthermore, these studies aimed at verifying the mediating role of adaptation processes (i.e., appraisals and coping) in the association between sense of self and psychological well-being.

In these two studies, participants were randomly assigned to either the experimental condition, in which a change was induced, or to the control condition, in which no change took place. Participants in the experimental condition experienced a change as they were asked to perform different tasks from the first to the second phase of the study. In the control condition, participants performed the same task in both phases of the study.

In Studies 1 and 2, sense of self was assessed before participants began to take part in the study. Appraisals toward the experimental task as well as well-being were assessed during the experimentation. Whereas Study 1 assessed only appraisals as an adaptation process, Study 2 included assessments of both appraisals and coping. Given the novelty of the procedures used in these experimental studies to manipulate change, Study 2 also included various methodological improvements on the basis of the results obtained in Study 1.

Study 3 was conducted in an applied setting, more specifically, among university students as they were experiencing the transition to university. This longitudinal study aimed at testing the role of the sense of self in predicting the processes by which individuals adapt to this real life change. This study also investigated the mediating role of adaptation processes in the

associations between the sense of self and the three postulated consequences, namely, psychological well-being, as well as changes in the importance attributed to a new self-component (i.e., being a university student), and changes in self-determined academic motivation. In order to statistically capture the changes occurring throughout the semester, analyses were conducted using structural equation modeling involving true intraindividual change (Raykov, 1992; Steyer, Partchev, & Shanahan, 2000).

CHAPTER 2

Study 1

Preliminary Laboratory Experiment

The aims of the present laboratory experiment were twofold. First, it investigated the impact of an experimentally-induced change on the associations between the sense of self and appraisals. Second, this study aimed at testing the mediating role of appraisals in the sense of self – well-being relationship.

In order to investigate adaptation to stress and to elicit coping responses, a variety of psychological and physical stressors have been used in laboratory settings. Such stressors include the presentation of bloody slides (e.g., Van Zuuren & Muris, 1993), informing participants that they tested positive for an enzyme deficiency that places them at risk for pancreatic disorders (Croyle & Hunt, 1991), or that they will be confronted to an electric shock (e.g., Smith, Houston, & Stucky, 1983). The cold pressor test, which involves submerging participants' arms in cold running water, has also proved to be a popular way to induce stress in the laboratory (Aldwin, 1994).

Another category of stressors used to trigger coping processes in the laboratory pertain to performance-related stressors such as tests of memory and reaction time (Cheng, 2001), oratory and speech tasks (see Baggett, Saab, & Carver, 1996), and mental arithmetic tasks (see Aldwin, 1994, for a review). In line with this last approach, the laboratory studies presented in this thesis induced a performance-related stress. In fact, participants in both the experimental and the control conditions were asked to throughoutly perform specific and stressful computer-related tasks. The protocol used in these studies also bears resemblance to some experiments conducted in the developmental literature, which have used computer tasks to investigate processes of

short-term psychological change (i.e., microdevelopmental studies; e.g., Fischer & Granott, 1995; Yan & Fischer, 2002). Yet, because the manipulation of a change situation in the laboratory was very specific to the goal of the present project, Study 1 aimed at developing a novel protocol for experimentally inducing change.

In Study 1, participants were invited to take part in a laboratory experiment designed to: (1) investigate the associations between the sense of self and appraisals in both an experimental condition (in which a change was induced), and in a control condition (in which no change occurred), as well as (2) test the mediating role of appraisals in the sense of self – well-being relationship.

Based on Lazarus and Folkman (1984)'s interactional model of stress and coping, according to which personality traits shape one's experience and perception of stress, as well as the evidence revealing that, in changing circumstances, the impact of personality traits on individuals' reactions to these changes is accentuated (e.g., Caspi & Moffit, 1991), it was first anticipated that the impact of the sense of self on appraisals would be particularly strong in the context of a change. More specifically, in the experimental (i.e., change) condition, the sense of self should lead to more positive appraisals toward the changing experimental task and to less negative appraisals. However, when no change is present, these associations between sense of self and appraisals should not be as strong.

As a second hypothesis, it was anticipated that appraisals would mediate the association between sense of self and well-being. More specifically, the sense of self was hypothesized to predict more positive appraisals and less negative appraisals. Positive appraisals, in turn, should lead to greater levels of well-being at the end of the experiment, whereas negative appraisals should lead to lower levels of well-being. These associations were expected to hold for the entire

sample of participants (participants in *both* the experimental and the control conditions) given that in both conditions, the experimental tasks were meant to be relatively stressful and involving, and that both conditions were designed to elicit adaptation processes. Thus, while the change manipulation was hypothesized to have an impact on the association between sense of self and appraisals, it was not hypothesized to moderate any of the other associations anticipated.

Method

Overview of the Design

One month after having completed the sense of self measures, participants were invited in the laboratory and were randomly assigned to the experimental (i.e., change) condition or to the control condition in which no change was induced. The experimenter was blind to participants' score on the sense of self measure. The study included two phases. For participants in the experimental condition, phase 1 involved performing a computer task using the Visio program, whereas phase 2 was different in that it involved teaching the task to an ostensibly younger student through a chatting session. For participants in the control condition, phases 1 and 2 consisted of performing the same computer task using the Visio program. As can be seen in Appendix A, psychological well-being was assessed both before the start of the experiment and at its very end. Appraisals toward the task to be performed in phase 2 were measured after the end of phase 1 (and just before the start of phase 2). Manipulation checks were assessed at the very end of the second phase.

When participants reported their appraisals toward the upcoming phase 2 task, for those in the control condition, these appraisals concerned a performance-related task that they had already experienced in phase 1, whereas for those in the experimental condition, these appraisals concerned a new, changing situation that they had never experienced.

Participants

Forty-three participants took part in the study. Recruitment took place in the context of a subject pool. When recruited, participants were informed that they would be awarded course credits for their participation in the study. Eighty-two percent of participants were women. The majority of participants were Francophones (91%) and were born in Canada (80%). Eight participants were excluded from the analyses due to their misunderstanding of the instructions provided to complete the questionnaire (i.e., five participants in the control group responded to the third questionnaire as if they had taught during phase 2), or due to their suspicions regarding the manipulation (i.e., two participants in the experimental group had explicitly guessed that they had interacted with the experimenter, and one participant in the control group did not believe that their student had called to cancel). Thus, the analyses were conducted with 35 participants. Random assignment of participants to the control and the experimental conditions was blocked by gender. None of the participants had used the Visio program before taking part in this study.

Procedure

At the beginning of the term, participants completed instruments assessing the sense of self. Approximately one month later, all participants were invited in the laboratory for an hour-long session. To minimize the manipulation of questionnaires during the experiment, participants were asked to keep all questionnaires with them for the entire duration of the study and to hand them to the experimenter at the end of the study.

The study was presented as ostensibly pertaining to undergraduate students' mentoring and teaching skills (see Appendix B for the instructional script used). Participants were told more specifically that because of the unusually large number of students arriving in September 2003 due to the double-cohort, the University of Ottawa was currently interested in designing

mentoring programs in which undergraduate students in their second year or more would assist first year students. Participants were told that the first step in building the program was to identify, during a real mentoring interaction, the teaching strategies that were the most effective.

Phase 1: Experimental and control conditions. Upon arrival in the lab, all participants were asked to complete questionnaire 1, which assessed baseline psychological well-being. Then, they were introduced to the computer task. They were asked to reproduce a figure using the Visio computer program as entirely and as precisely as possible (see Appendix C). All participants were instructed that the goal of phase 1 was to become familiar with the task, and that the purpose of phase 2 was to teach this task to a younger student through chatting interactions. The experimenter emphasized the importance of the experiment and its usefulness in the development of mentoring programs. Participants were also told that the chatting interaction procedure was used because virtual interactions allow to methodologically control for the influence of different factors known to influence social interactions (i.e., voice, physical appearance).

In order to induce further stress, participants were told that their student would be evaluating them as a mentor, and that, at the end of the chatting session, their student would have to be able to perform the task on their own. Although only participants in the experimental condition were actually asked to perform the teaching task in phase 2, both control and experimental participants received, during phase 1, the same information concerning phase 2. This was done to ensure that participants in both the control and the experimental conditions started the experiment in the same mindset, and that the experimental manipulation (i.e., creating a changing situation vs. creating a control situation involving no change) would be introduced

between phases 1 and 2. Participants were then left alone to perform the computer task. The experimenter ended this first phase after participants spent 10 minutes at the task.

During piloting work conducted prior to this preliminary study ($N = 7$), the computer task was found to be involving, interesting, challenging, and stressful for participants with no knowledge of the Visio program. The computer task was designed so that it was not possible to complete within at least 25 minutes.

Phase 2: Experimental condition. At the end of phase 1, participants in the experimental condition were told that the younger student had just arrived and that he or she would need about five minutes to fill in some paperwork in the laboratory next door before proceeding to the teaching task. In the meanwhile, participants were invited to complete questionnaire 2. This questionnaire assessed appraisals toward phase 2 task. Then, participants were given further instructions concerning their role as mentor. They were first provided with details on how the chatting interactions would take place, and were then reminded of the importance of their role during phase 2. Participants were informed that their student was 18 years of age (i.e., the age at which students from high schools would enter university in the context of the double-cohort). Participants' and their students' gender was also matched. Participants were told that their student was bilingual, and that the study could thus be conducted in the participant's preferred language. All interactions took place in French.

The chatting interactions lasted 10 minutes, after which the experimenter ended the session. Participants were then invited to complete questionnaire 3, which assessed well-being and included manipulation checks. Participants were also asked to report what they thought the study was about and their comments about the experiment. None of the participants correctly

identified the goals of the study. A collective debriefing session took place two weeks after all participants had taken part in the study.

The chatting interaction procedure was chosen given that this method allowed to standardize the characteristics of the student as well as the nature and the stressfulness of the interaction per se. During the chatting interactions, the experimenter ensured as much neutrality as possible and responded in a similar manner to all participants.

Phase 2: Control condition. At the end of phase 1, participants in the control condition were told that their student had left a message on the answering machine informing the researcher that he or she was not able to make it for today's session. Control group participants were then invited to continue performing the same computer task, just as they had been doing during phase 1. Before proceeding with this task, they completed questionnaire 2. After 10 minutes spent on the task in this second phase, participants were invited to stop and to complete questionnaire 3. Questionnaires completed by participants in the control condition were identical to the ones completed by participants in the experimental condition.

Measures

Three instruments were used to assess the sense of self, notably the Self-Esteem Stability Scale, the Self-Concept Clarity Scale, as well as the Global Motivation Scale.

Self-esteem stability. Rosenberg's Self-Esteem Stability Scale (1965) is a 5-item scale designed to assess self-esteem stability (e.g., "Do you find that at on one day you have one opinion of yourself and on another day you have a different opinion?"). Kernis and colleagues have mostly used the *statistical* instability of self-esteem, which involves measuring self-esteem during four consecutive days, twice a day, for a total of 8 to 10 times, and using the standard deviation of these scores as a measure of stability. However, a one-time *barometric* measure of

self-esteem stability was adopted here given that the design of this study was already quite demanding for our participants and that this barometric measure has been found to be reliable and valid (see Vallacher et al., 2002, for the validity of this barometric measure). Responses on this scale were made on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). In this preliminary study, the reliability for the self-esteem stability scale was acceptable (Cronbach alpha = .82).

Self-concept clarity. The Self-Concept Clarity Scale (Campbell et al., 1996) is composed of 12 items (e.g., “My beliefs about myself often conflict with one another”; “In general, I have a clear sense of who I am and what I am”). When completing this instrument, responses were made on 5-point Likert scales (1 = strongly disagree, 5 = strongly agree). Concurrent and predictive reliability of this scale has been demonstrated previously (Campbell et al., 1996; Kernis et al., 2000; Vallacher et al., 2002). In the present study, this scale presented adequate reliability (Cronbach alpha = .88).

Global self-determination. (Pelletier, Blanchard, Dion, Sharp, Otis, & Amiot, 2004). The 18-item Global Motivation Scale (GMS) assesses one’s global or dispositional motivational level. When completing this scale, participants are asked to indicate, on a 7-point Likert-type scale ranging from 1 (“not agree at all”) to 7 (“very strongly agree”), the extent to which each of the items corresponds to the reasons why they do things in general. The 6 subscales composing the GMS represent the motivation constructs identified by Deci and Ryan (1985, 1991). These constructs are, from the highest to the lowest level of self-determination: intrinsic motivation (e.g., “because I like making interesting discoveries”), extrinsic motivation by integrated motivation (e.g., “because by doing them I am living in line with my deepest principles”), by identified regulation (e.g., “because I chose them as means to attain my

objectives’), by introjected motivation (e.g., ‘because I would beat myself up for not doing them’), and by external regulation (e.g., ‘because I want to be viewed more positively by certain people’). Finally, a last subscale measures amotivation, or the absence of motivation (e.g., ‘even though I do not have a good reason for doing them’). The GMS possesses acceptable levels of reliability, validity, and internal consistency (Pelletier et al., 2004). In the current investigation, alphas obtained for the different subscales of the GMS ranged from .61 to .86.

As in previous studies (see Vallerand, 1997), a self-determined motivation index was derived from these six different subscales. The motivation index consists of a summation of specifically weighted scores and is used to integrate the information from the different motivational subscales under one score. In line with previous studies using the index, weights were assigned to the subscales according to their respective placement on the self-determined continuum (e.g., Ryan & Connell, 1989). Because they are considered self-determined forms of motivation, intrinsic motivation, as well as integrated and identified regulations subscales were assigned the weights of +3, +2 and +1, respectively. On the other hand, because they are conceptualized as less self-determined forms of motivation, amotivation, external and introjected regulations subscales were assigned the respective weights of -3, -2, and -1, respectively. The following formula was used to compute the self-determination index: $[(3 \times \text{intrinsic motivation} + 2 \times \text{integrated regulation} + \text{identified regulation}) - (\text{introjected regulation} + 2 \times \text{external regulation} + 3 \times \text{amotivation})]$. Thus, the higher the score on the index, the more individuals perform behaviors in their lives out of pleasure, choice, and meaning, and the less they perform these behaviors out of external regulation, introjection, and amotivation (possible range = -42 to +42).

Because 5-point or 7-point Likert scales were used to assess the three components of the sense of self, values on these three measures were first standardized and then computed in order to create a mean global sense of self score. Table 2 presents the reliabilities obtained for this overall sense of self compute. In this first study, the correlation between global self-determination and self-concept clarity was .50 ($p < .01$), the correlation between self-determination and self-esteem stability was .50 ($p < .01$), and the correlation between self-concept clarity and self-esteem stability was .78 ($p < .001$). These strong correlations thus replicate results obtained in past studies (Baumgardner, 1990; Campbell et al., 1996; Kernis, 1993; Kernis et al., 2000; Vallacher et al., 2002) and confirm the legitimacy of regrouping these components within the same sense of self variable.

Cognitive appraisals. In line with the work of Lazarus and Folkman (1984), cognitive appraisals were included to assess participants' perceptions and feelings toward the task of phase 2. Items from different appraisals measures (i.e., Campbell, Chew, & Scratchley, 1991; Cheng, 2001; Folkman & Lazarus, 1985; Long & Schultz, 1995; Ptacek, Smith, Espe, & Raffety, 1994) were combined to measure positive and negative appraisals. When completing the appraisals measures, responses were made on 5-point Likert scales (1 = strongly disagree, 5 = strongly agree). A compute was created for the positive appraisals and included the following 5 variables: a compute of 17 positive emotions felt toward the task ($\alpha = .96$), an item measuring the perceived desirability of the task, an item assessing the importance of the task, an item assessing the perceived positivity of the task, and an item measuring the perception that the task is a challenge. A compute was also created for the negative appraisals and included the following 4 variables: a compute of 13 negative emotions toward the task ($\alpha = .93$), an item assessing the perception that the task is threatening, an item assessing the perception that the task is stressful,

as well as an item measuring how the task is perceived to have an impact on one's mood (see Table 2 for the alphas obtained regarding the appraisals variables used in the analyses).

Two instruments were used to assess psychological well-being, namely, the Vitality Scale, as well as the Positive and Negative Affect Schedule (PANAS).

Vitality. The 7-item Vitality Scale was designed to assess the energization aspect of well-being (Ryan & Frederick, 1997). When completing this scale, participants were asked to indicate their level of endorsement for each of the items using a Likert-type scale ranging from 1 ("not agree at all") to 7 ("very strongly agree"). An example of an item is as follows: "I feel alive and vital". Research with college students and adults has supported this measure's reliability and its relationship to both subjective well-being and behavioral outcomes (Ryan & Frederick, 1997; see also Ryan & Deci, 2001). This scale demonstrated adequate reliability both at the beginning ($\alpha = .86$) and at the end of the study ($\alpha = .93$).

Positive and negative affects. The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) consists of 20 adjectives, 10 of which represent positive affects, and 10 representing negative affects. Participants reported their responses on this scale using a 5-point Likert-type scale ranging from 1 ("very slightly or not at all") to 5 ("extremely"). In the present investigation, positive and negative affect subscales demonstrated adequate reliability both at the beginning (α s = .91 and .88, for positive and negative affect subscales, respectively), and at the end of the study (α s = .96 and .91, respectively).

A global well-being score was computed based on the scores on the Vitality Scale and on the PANAS by first reversing the scores on the negative affect subscale of the PANAS, standardizing all scores, and computing an average of these measures. Table 2 presents the reliabilities obtained for these overall computes of psychological well-being.

Manipulation checks. Three items assessed the extent to which participants perceived a change between phases 1 and 2 of the study: “To what extent did you feel that the task in phase 2 was different from the task in phase 1”, “To what extent did you feel a change between phase 1 and phase 2”, and “To what extent did you feel you had to change and adapt your behaviors from phase 1 to phase 2” (Cronbach alpha = .88). A 7-point scale was used, which ranged from 1 (“no change at all”) to 7 (“extreme change”).

Control variables. For participants assigned to the experimental condition, questionnaire 3 also assessed participants’ relationship with their student (i.e., productive, harmonious) using a 7-point Likert scale ranging from 1 (“not at all”) to 7 (“extremely”).

Results

Data Cleaning and Preparation

Prior to conducting the main analyses, variables were scrutinized for accuracy of data entry, missing values, and fit between their distributions and the underlying assumptions of the analyses to be conducted (Tabachnick & Fidell, 2001). When the majority of the items of a scale had been completed by a participant, the missing score was replaced by that participant’s own mean on the variable. While no variable presented a particularly high number of missing data (i.e., not more than two missing data points), the remaining missing data (i.e., 2% of the dataset) were replaced using the regression imputation procedure. No univariate outliers were found as indicated by z-scores higher than $|3.29|$, and no participants were identified through Mahalanobis distance as multivariate outliers ($\chi^2(5) = 16.75, p < .001$). Our thirty-five participants were thus retained for the analyses. Correlations between the variables revealed that multicollinearity was not a problem in this study as there were no correlations higher than .80. Participants assigned to the experimental (i.e., change) condition reported that their relationship

with their student was quite harmonious ($M = 5.40$, $SD = 0.99$) and productive ($M = 5.13$, $SD = 1.41$).

Preliminary Analyses

Manipulation checks and descriptive statistics. The effect of the change manipulation on perceptions of change between phase 1 and phase 2 was tested using a one-way ANOVA. Analyses yielded a strong effect for the change manipulation ($F(1, 33) = 33.74$, $p < .001$, $\eta^2 = .51$), revealing that participants in the experimental condition perceived greater change between the two phases of the study ($M = 5.16$) in comparison to participants in the control condition ($M = 2.97$).

Table 1 presents the descriptive statistics for the variables used in the study and Table 2 presents the correlations between the variables used in the main analyses. As can be seen in Table 1, the overall context of the study elicited, among participants in both the experimental and in the control conditions, moderate positive and negative appraisals toward phase 2 task. Participants also reported moderate to high scores on each component of the sense of self as well as on the well-being variables. T-tests conducted to test the impact of the change manipulation on the main variables revealed a significant effect of change on positive appraisals, showing that stronger positive appraisals were elicited in the experimental condition ($M = 3.81$) than in the control condition ($M = 3.14$, $t(1, 33) = -2.83$, $p < .01$). The change manipulation also had a marginally significant effect on negative appraisals, revealing that participants in the experimental condition reported slightly stronger negative appraisals ($M = 2.44$) in comparison to participants in the control condition ($M = 1.86$, $t(1, 33) = -2.02$, $p < .06$). These results will be discussed further in the discussion section. Table 2 provides an overview of the relationships between the main variables.

Table 1.

Descriptive Statistics for the Main Variables (Study 1).

	<i>M</i>	<i>SD</i>	<i>SK</i>	<i>KU</i>
<i>Sense of self</i>				
Self-determination	10.59	7.95	0.27	0.33
Self-concept clarity	3.35	0.75	-0.40	-0.81
Self-esteem stability	3.32	0.87	-0.12	-1.22
<i>Baseline well-being</i>				
Vitality	4.80	1.00	0.27	-0.11
Positive affect	3.27	0.74	0.05	-0.52
Negative affect	1.54	0.60	1.84	3.28
<i>Final well-being</i>				
Vitality	4.36	1.48	-0.13	-0.93
Positive affect	3.23	0.99	-0.16	-0.72
Negative affect	1.46	0.66	1.82	2.99
<i>Positive appraisals</i>	3.43	0.76	0.06	-0.73
<i>Negative appraisals</i>	2.11	0.88	0.98	0.67

Notes. *M* = Mean; *SD* = Standard deviation; *SK* = Skewness; *KU* = Kurtosis.

Table 2.

Correlations between the Main Variables (Study 1).

	1.	2.	3.	4.	5.
1. Sense of self	.82				
2. Baseline well-being	.52**	.74			
3. Final well-being	.60***	.74***	.76		
4. Positive appraisals	.18	.23	.41*	.82	
5. Negative appraisals	-.56**	-.39*	-.51*	.27	.80

Notes. * = $p < .05$, ** = $p < .01$, *** = $p < .001$. The reliability coefficient of each computed variable is indicated on the diagonal.

Main Analyses

Testing the impact of change on the associations between sense of self and appraisals.

Tables 3 and 4 present the results of hierarchical moderated multiple regressions analyses (Aiken & West, 1991) conducted to test the impact of the change manipulation on the associations between sense of self and appraisals. Separate analyses were performed for each dependent variable (i.e., positive and negative appraisals). In the first step of these analyses, the main effects for the change manipulation (-1 for the control condition, +1 for the experimental condition) and sense of self were entered. To test for the proposed interactions, multiplicative terms between change and sense of self were entered in the second step of the analyses. Given that the sense of self variable had already been standardized, the interactive term was computed by a direct multiplication of the sense of self variable and the change variable, thus ensuring that multicollinearity between the predictors and the interaction term did not distort the results of the analyses (Aiken & West, 1991).

Table 3 presents the results of the hierarchical moderated regression analysis predicting positive appraisals toward phase 2 task. As shown in this Table, only Step 1 of the analysis accounted for a significant increment of variance in positive appraisals toward the task. While sense of self marginally predicted more positive appraisals, the change manipulation positively predicted these positive appraisals, thus replicating the results obtained through t-tests and revealing that positive appraisals were greater in the experimental than in the control condition.

Table 4 presents the results of the hierarchical moderated regression analysis predicting negative appraisals toward phase 2 task. Both steps of the analysis accounted, at least marginally, for a significant increment of variance in negative appraisals. More specifically, sense of self

Table 3.

Hierarchical Regression Predicting Positive Appraisals Toward the Task from Change and Sense of Self (Study 1).

Step	Variable	R ²	R ² Δ	F	F Δ	β
1	Change	.28**	.28**	6.25**	6.25**	.51**
	Sense of self					.30♦
2	Change x Sense of self	.28*	.00	4.03*	0.00	-.01

Notes. ♦ = $p < .10$, * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

Table 4.

Hierarchical Regression Predicting Negative Appraisals Toward the Task from Change and Sense of Self (Study 1).

Step	Variable	R ²	R ² Δ	F	F Δ	β
1	Change	.35**	.35**	8.61**	8.61**	.21
	Sense of self					-.48**
2	Change x Sense of self	.42*	.07♦	7.45**	3.69♦	-.27♦

Notes. ♦ = $p < .10$, * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

predicted less negative appraisals toward the task. The sense of self by change interaction was marginally significant. Given the preliminary nature of this study, this marginal interaction was still interpreted by decomposing at the two levels of the change variable. Further multiple regressions revealed that the negative relationship between sense of self and negative appraisals was not significant in the control condition ($\beta = -.22, t = -0.97, p = .34$), but was highly significant in the experimental condition ($\beta = -.74, t = -3.93, p < .005$).

Testing for mediation. Figure 2 presents the results of the path analyses conducted to investigate the mediating role of appraisals in the sense of self – well-being relationships. These path analyses were conducted on the entire sample, regardless of whether participants had been assigned to the experimental or to the control condition. Doing so appeared justified given that both the experimental and the control conditions were designed to induced stress and triggered moderately strong appraisals. Furthermore, additional hierarchical moderated multiple regression analyses revealed that the change manipulation did not interact with any of the associations presented in this path model (except for the hypothesized sense of self by change interaction obtained on negative appraisals presented above).

The data trimming procedure proposed by Pedhazur (1982) was used to conduct the regression analyses. For each multiple regression, all antecedent variables were first included as predictors. Non-significant predictors were then excluded in a subsequent regression (see Pedhazur, 1982). Figure 2 presents the results of these final regressions. Baseline well-being (i.e., measured before the start of the experiment) was included as a covariate only when predicting final well-being (i.e., assessed at the end of the study).

As can be seen in Figure 2, sense of self significantly and negatively predicted negative appraisals. However, the sense of self did not significantly predict positive appraisals.

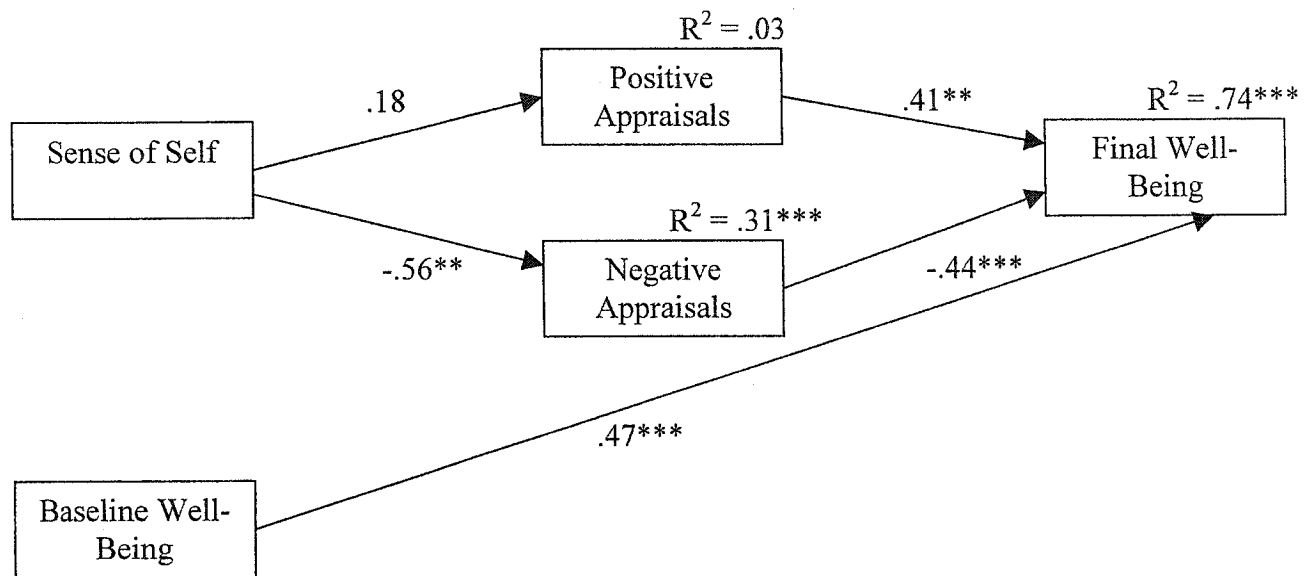


Figure 2.

Results of the Path Analyses (Study 1).

Notes. $*$ = $p < .05$, $**$ = $p < .01$, $***$ = $p < .001$.

Controlling for baseline well-being, positive appraisals positively predicted final well-being at the end of the experiment, whereas negative appraisals negatively predicted final well-being.

To further investigate the mediating role of negative appraisals in the sense of self – well-being relation, the procedure proposed by Baron and Kenny (1986) was used. According to these authors, several conditions must be respected to support a mediational model. First, it is necessary to find evidence of a relationship between the predictor (i.e., sense of self) and the dependent variable (i.e., final well-being). Second, it is necessary to find a significant relationship between the predictor and the mediator (i.e., negative appraisals). Third, the relationship between the predictor and the dependent variable should decrease or become non-significant after the mediator is entered into the regression equation.

To test for the mediating role of negative appraisals in the sense of self – well-being association, three regressions were conducted. The first regression, investigating the link between sense of self and negative appraisals, is presented in the path analysis (Figure 2) and revealed a negative relation between these variables ($\beta = -.56, p < .001$). The second regression involves regressing final well-being measured at the end of the experiment on sense of self. Controlling for baseline well-being, sense of self positively predicted final well-being ($\beta = .29, p < .05$). Finally, in a third regression, final well-being was regressed on sense of self, negative appraisals, and baseline well-being. This third regression revealed a non-significant beta of .21 ($p = .16$) between sense of self and well-being. The extent to which the association between sense of self and well-being decreases and becomes non-significant from the second to the third regression represents the strength of negative appraisals as a mediator of the sense of self – well-being relationship. In this case, the beta dropped from .29 to .21, thus providing preliminary support for the role of negative appraisals in the sense of self – well-being relationship.¹

Chapter Summary and Discussion

Using novel methodological procedures, the objectives of Study 1 consisted in investigating the impact of a change manipulation on the associations between sense of self and appraisals, as well as testing the mediating role of appraisals in the association between sense of self and well-being. Participants were randomly assigned to either the experimental condition or the control condition. In the experimental condition, change was induced by asking participants to perform different tasks in phase 1 and phase 2. In the control condition, no change occurred as participants in this condition performed the same computer task in both phases 1 and 2. The sense of self was measured one month before participants were invited in the laboratory, and appraisals toward phase 2 task were assessed just before participants were asked to perform this second task. A baseline measure of well-being was taken just before the experiment began, and a final measure of well-being was taken at the end of the experiment.

First, it was expected that the sense of self would predict more positive appraisals toward phase 2 task and would predict less negative appraisals. Based on Lazarus and Folkman's interactional model of stress and coping (1984), these associations were hypothesized to be stronger in the experimental (i.e., change) than in the control condition. In line with the mediation hypothesis, appraisals toward phase 2 task were hypothesized to mediate the sense of self – well-being relationship. These associations were expected to hold among the entire sample.

The results of the manipulation checks supported the validity of the experimental manipulation as participants in the experimental condition perceived a greater change between phase 1 and phase 2 in comparison to participants in the control condition.

The impact of the change manipulation on the associations between sense of self and appraisals was tested using hierarchical moderated multiple regressions (Aiken & West, 1991). As expected, the negative association between sense of self and negative appraisals was stronger in the experimental than in the control condition. Contrary to expectations, the association between sense of self and positive appraisals was not significant, and this, in both the experimental and the control conditions. These results and their implications will be discussed in more details in the Study 2 Discussion section.

The mediation hypothesis was tested using path analyses as well as tests of mediation. Results from the path analyses supported the mediating role of negative appraisals in the sense of self – well-being relationship. However, due to a lack of association between sense of self and positive appraisals, these positive appraisals could not mediate the association between sense of self and well-being. Finally, the mediation test devised by Baron and Kenny (1986) provided preliminary support for the mediating role of negative appraisals in the sense of self – final well-being association.

Overall, the sense of self predicted lower negative appraisals among participants in the experimental condition but not among those in the control condition. As well, negative appraisals mediated the association between sense of self and well-being assessed at the end of the experiment. However, the association between sense of self and positive appraisals was not significant in both the control and the experimental condition. Because sense of self did not significantly predict positive appraisals, this type of appraisals could not mediate the association between sense of self and final well-being.

Despite the fact that the design of the present study allowed to experimentally manipulate change through an innovative procedure as well as to induce causality in the findings, there are several limitations with this study in its actual form.

First, although the experimenter was blind to the participants' levels of sense of self and to their responses throughout the study, reliance on only one experimenter to conduct the study may have introduced some indiscernable experimenter biases.

As a second limitation, the procedures used in this study appear to have triggered certain unmet expectations among participants in the control group (i.e., regarding the teaching task in phase 2). Recall that at the beginning of the study, participants in both the experimental and the control conditions were told that, in phase 2, they would be interacting with another student in order to teach them how to perform the computer task. However, after phase 1, control participants were further told that the phase 2 teaching task would not take place given that their student had called to cancel their appointment at the laboratory and that, for this reason, their task in phase 2 was to continue performing the same computer task.

Two findings suggest that control participants were disappointed by being instructed that phase 2 task would involve the continuation of the same computer task rather than the teaching task. First, a change main effect was observed on positive appraisals, revealing that participants in the control condition reported *lower* positive appraisals toward phase 2 task in comparison to participants in the experimental condition. Second, although change was not related to overall well-being at the end of the experiment, additional analyses revealed a significant partial correlation between the change manipulation and the positive affect subscale of the PANAS completed at the end of the experiment (controlling for baseline positive affect). This partial

correlation revealed that participants in the control condition reported lower positive affect at the end of the experiment in comparison to participants in the experimental condition.

Altogether, these findings suggest that the lower levels of positive appraisals and positive affect reported by participants in the control condition may be due to these participants' disappointment of not having taught during phase 2. Furthermore, misleading control participants into believing that they would perform the teaching task may have been confusing for them, as revealed by some participants' responses in the third questionnaire.

Despite these limitations, the results of this first study are enlightening and represent a first step in the understanding of the role played by the sense of self and appraisals when adapting to a stressful and changing situation.

CHAPTER 3

Study 2

Laboratory Experiment

A primary purpose of this second laboratory study was to incorporate another mediating variable to the experimental design, notably, coping strategies. A second goal of Study 2 was to refine the methodological procedures developed in Study 1 and to replicate its results among a larger sample.

As in Study 1, the impact of the change manipulation on the relationships between sense of self and appraisals was tested. It was anticipated that the positive association between sense of self and positive appraisals would be stronger in the experimental (i.e., change) condition than in the control condition, whereas the negative association between sense of self and negative appraisals would be stronger in the experimental than in the control condition.

As coping was added as another mediator of the sense of self – well-being associations, it was also anticipated that, while appraisals should mediate the associations between the sense of self and coping, coping should mediate the associations between appraisals and well-being. More specifically, it was hypothesized that the sense of self should lead to greater positive appraisals toward phase 2 task but to less negative appraisals toward this same task. Positive appraisals, in turn, should lead to a greater use of task-oriented coping strategies but to a lesser use of disengagement-oriented coping. Conversely, negative appraisals should positively predict the use of disengagement-oriented coping strategies but negatively predict task-oriented coping strategies. Finally, while task-oriented coping should lead to more positive well-being, disengagement-oriented coping should lead to lower levels of well-being. Given the stressful

nature of both the experimental and the control conditions, these associations were again hypothesized to hold among the entire sample.

Method

Design and Procedure

The design and procedure were similar to those of Study 1. Based on the results obtained regarding the manipulation checks, Study 2 involved the use of the same tasks to manipulate change as those used in Study 1. This second study was different on the following aspects.

First, in order not to introduce any false expectations among participants in the control condition, and to ensure that both experimental and control group participants' experiences' were equivalent in phase 1, participants in the control condition were not made aware of the existence of a potential teaching task. Furthermore, participants in the experimental condition were told about the teaching task only between phases 1 and 2 rather than at the beginning of the study (see Appendix E for the instructional script used in Study 2).

Second, a latin-square design was used, which required the involvement of four experimenters. Doing so also allowed to systematically test for the presence of experimenter effects. An interaction script was also created based on the patterns of chatting interactions that took place during Study 1 (see Appendix F). This interaction script was used by all experimenters in Study 2 in order to standardize their interactions with participants. Each experimenter was thus trained to rely on the instructional and interaction scripts and to be as neutral as possible during the chatting interactions.

Third, in order to rapidly initiate the teaching process and to encourage participants to more fully embrace their role as teachers, participants in the experimental condition were provided with a sheet of paper presenting tips on how they should initiate the chatting interaction

(see Appendix G). The sentences presented on this sheet were based on the interventions made in Study 1 by participants who were found to be particularly effective teachers.

Fourth, Study 2 was entirely conducted in French so as to homogenize the language used throughout the study. To do so, all instruments used in Study 2 had been previously translated using a back-translation procedure (Vallerand, 1989).

Finally, this second study was concluded by a short one-on-one verbal interview which assessed the credibility of the cover stories as well as participants' possible suspicions regarding the experimental procedures. At the end of these interviews, participants were debriefed, paid, and thanked.

Most of the measures used in this second study were identical to the ones used in Study 1 (see Appendix A). A coping instrument was included in the present study, as well as a supplementary measure of positive appraisals. Details pertaining to these measures are presented in the Measures section. As can be seen in Appendix A, in this study, the sense of self was measured in the first questionnaire completed in the laboratory just before the start of the experiment.

Participants

The sample comprised 80 French-speaking university students recruited in a variety of undergraduate courses offered at the University of Ottawa. When recruited, participants were informed that they would receive CAN\$10 for their participation in the study. The majority were women ($N = 65$). Participants' age ranged from 17 to 46 ($M = 20.11$, $SD = 4.25$). The wide majority of participants indicated French (90%) or English (7.5%) as their mother tongue and 94% were born in Canada. Most participants studied full-time (95%) and a minority studied on a part-time basis (5%). Participants' average grade in university ranged from 52% to 99% ($M =$

77.06, $SD = 9.19$). Academic success varied widely and self-reported grades formed an approximately normal distribution (skewness = $-.02$; kurtosis = $.31$). Random assignment of participants to the control and the experimental conditions was blocked by gender, year at university, and experimenter.

None of the participants had used the Visio program before taking part in this study. Also, none of the participants correctly identified the goals of the study. Upon debriefing, eight participants revealed they had suspected having interacted with the experimenter. However, when further questioned, participants revealed that this suspicion did not impact on their motivation to perform the task and did not change the strategies used to perform this task. These suspicious participants were compared to the rest of the sample. T-tests revealed no significant differences between these participants and the non-suspicious participants on all of the main variables of the study. Moreover, analyses were conducted without these suspicious participants and the same pattern of results was obtained. These participants were thus included in the analyses.

Measures

Appendix A provides an overview of the composition of each of the three questionnaires used in this study. The measures used in this study share a lot of similarities with those used in Study 1. In fact, as in Study 1, the sense of self was assessed using the Self-Concept Clarity Scale (Campbell et al., 1996), the Self-Esteem Stability Scale (Rosenberg, 1965), and the Global Motivation Scale (Pelletier et al., 2004). A self-determination index was also generated (see Study 1 for details). In this study, the correlation between global self-determination and self-concept clarity was $.42$ ($p < .001$), the correlation between self-determination and self-esteem

stability was .30 ($p < .001$), and the correlation between self-concept clarity and self-esteem stability was .76 ($p < .001$).

As in Study 1, a global well-being score was computed using scores on the Vitality Scale (Ryan & Frederick, 1997) and the PANAS (Watson et al., 1988). Furthermore, the same three items were also used to assess manipulation checks.

In the present study, instruments assessing the coping strategies used to deal with phase 2 task as well as another type of positive appraisals (i.e., personal resources) were added. Supplementary control variables were also included.

Appraisals. Contrary to Study 1, the positive appraisals compute in this study included a measure of participants' personal resources to deal with the task (adapted from Major et al., 1998). When completing this 4-item Personal Resource Scale, participants were asked to indicate the extent to which each item represented how they were perceiving themselves in the context of phase 2 task (e.g., "I personally have what it takes to deal with the task"). In this measure as well as on all other appraisals measures, responses were made on a 1 ("not at all") to 7 ("extremely") Likert scale. The reliability for this Personal Resource Scale was acceptable (Cronbach alpha = .90).

The rest of the appraisals measures used in this study were very similar to the ones used in Study 1 and were adapted from different appraisals instruments (i.e., Campbell et al., 1991; Cheng, 2001; Folkman & Lazarus, 1985; Long & Schultz, 1995; Ptacek et al., 1994). In the current study, the positive appraisals compute was composed of the following 6 variables: the compute derived from the Personal Resource Scale, a compute of 12 positive emotions felt toward the task, an item measuring the perceived desirability of the task, an item assessing the importance of the task, an item assessing the perceived positivity of the task, and an item

measuring the perception that the task is a challenge. The compute created for the negative appraisals included the following 5 variables: a compute of 12 negative emotions toward the task, an item assessing the perception that the task is threatening, an item assessing the perception that the task is stressful, an item measuring how the task is perceived to have an important impact, as well as an item measuring how the task is perceived to affect one's mood.

Coping strategies. An existing measure of coping, namely, the COPE inventory (Carver, Scheier, & Weintraub, 1989), was adapted for the specific experimental task performed in this study (for similar adaptations of the COPE in laboratory experiments, see Amirkhan & Greaves, 2003; Baggett et al., 1996; Larkin, Semenchuk, Frazer, Suchday, & Taylor, 1998). The COPE was originally designed to assess the different ways in which people respond to stress. This coping instrument is composed of ten subscales which measure conceptually distinct task-oriented coping strategies, including problem-focused coping (i.e., active coping, planning, suppression of competing activities, restraint coping, seeking of instrumental support) and emotion-focused coping (i.e., seeking of emotional social support, positive reinterpretation, acceptance, turning to religion). Four subscales measure disengagement-oriented coping strategies (i.e., focus on and venting of emotions, behavioral disengagement, mental disengagement, denial).

In the present study, the task-oriented strategies of active coping, planning, positive reinterpretation, and acceptance, as well as the disengagement-oriented strategies of behavioral and mental disengagement were used given their relevance in the context of the experimental tasks performed by both control and experimental participants. Other items were also added on the basis of the coping categories proposed by Skinner and her colleagues (2003). These items assessed the task-oriented strategies of self-soothing (i.e., relaxation), acceptance of

responsibility, and goal setting, as well as the disengagement-oriented strategies of other- and self-blame. Finally, items from the interest-enhancing scale developed by Green-Demers (1997) were also included when computing the task-oriented coping variable. For sake of parsimony, each coping strategy was assessed with two items. When completing the coping scale, participants were asked to indicate the extent to which each item corresponded to what they had thought about or what they had done to deal with the task of phase 2. A 7-point Likert scale ranging from 1 (“not at all”) to 7 (“very strongly”) was used.

Control variables. In this study, questionnaire 1 also included measures assessing participants’ level of familiarity with various computer programs (including Visio), their frequency of use of email, chat, and internet programs, their past experience in various jobs (including teaching jobs), and the extent to which they valued various jobs (including teaching jobs). Questionnaire 3 contained measures assessing participants’ feeling of competence with the experimental task, their feeling of comfort toward the experimenter, as well as their relationship with their student (i.e., productive, harmonious). All of these measures involved the use of 7-point Likert scales.

Results

Data Cleaning and Preparation

Prior to conducting the main analyses, variables were scrutinized for accuracy of data entry, missing values, and fit between their distributions and the underlying assumptions of the analyses to be conducted (Tabachnick & Fidell, 2001). With respect to missing data, all participants had less than 10% of data missing and no variable presented more than 3 missing data points. When data from a scale was missing, it was replaced by the participant’s own mean on this scale. Overall, 0.61% of the data was missing and was replaced using the regression

imputation procedure. For each variable, within-cells standardized distributions were inspected and Mahalanobis distances were computed. No univariate or multivariate ($\chi^2(7) = 20.28, p < .001$) outliers were found. The univariate within-cell distributions of the variables were also approximately normal. A random selection of bivariate scatter-plots were examined to identify potential departures from linearity and revealed fairly linear patterns. Bivariate correlations among continuous variables were also examined to identify problems with multicollinearity and singularity. None of the correlations observed between the main variables were higher than .80.

Preliminary Analyses

Manipulation checks and descriptive statistics. The effect of the change manipulation on perceptions of change between phase 1 and phase 2 was tested using a one-way ANOVA. Results revealed a strong effect for the change manipulation ($F(1, 78) = 38.85, p < .001, \eta^2 = .33$), confirming that participants in the experimental (i.e., change) condition perceived greater change between the two phases of the study ($M = 5.05$) in comparison to participants in the control condition ($M = 3.76$).

Table 5 presents the descriptive statistics for the variables used in the study and Table 6 presents the correlations observed between the main variables of the study. As can be seen in Table 5, the context of the study elicited, among all participants, moderate positive and negative appraisals, a quite strong use of task-oriented coping strategies, and a lesser use of disengagement-oriented coping. Participants also reported moderate to high means on each component of the sense of self as well as on the well-being variables.

Table 5.

Descriptive Statistics for the Main Variables (Study 2).

	<i>M</i>	<i>SD</i>	<i>SK</i>	<i>KU</i>
<i>Sense of self</i>				
Self-determination	14.51	6.83	0.16	0.20
Self-concept clarity	3.25	0.79	-0.47	-0.30
Self-esteem stability	3.08	0.85	0.06	-0.45
<i>Baseline well-being</i>				
Vitality	4.32	0.99	-0.08	-0.39
Positive affect	3.29	0.63	0.12	0.55
Negative affect	1.50	0.46	1.21	1.39
<i>Final well-being</i>				
Vitality	4.34	1.12	0.10	-0.63
Positive Affect	3.16	0.85	-0.16	-0.31
Negative Affect	1.46	0.50	1.75	3.96
<i>Positive appraisals</i>	4.50	0.84	0.12	-0.19
<i>Negative appraisals</i>	2.95	1.16	0.80	0.88
<i>Task-oriented coping</i>	4.84	0.87	-0.10	0.55
<i>Disengagement-oriented coping</i>	1.82	0.66	1.13	1.98

Notes. *M* = Mean, *SD* = Standard deviation, *SK* = Skewness, *KU* = Kurtosis.

Table 6.

Correlations between the Main Variables (Study 2).

	1.	2.	3.	4.	5.	6.	7.
1. Sense of self	.75						
2. Baseline well-being	.43***	.49					
3. Final well-being	.37***	.60***	.69				
4. Positive appraisals	.12	.58***	.58***	.80			
5. Negative appraisals	-.43***	-.36**	-.49***	-.20	.77		
6. Task-oriented coping	.13	.55***	.67***	.53***	-.16	.88	
7. Disengagement-oriented coping	-.41***	-.30**	-.48***	-.13	.46***	-.26*	.70

Notes. * = $p < .05$, ** = $p < .01$, *** = $p < .001$. *M* = The reliability coefficient of each variable is indicated on the diagonal.

T-tests conducted on appraisals, coping, and well-being variables revealed a marginally significant effect of the change manipulation on positive appraisals, showing that participants in the control condition reported stronger positive appraisals ($M = 4.68$) than participants in the experimental condition ($M = 4.33$, $t(1, 78) = 1.88$, $p < .07$). Change also had a significant effect on the use of disengagement-oriented coping, revealing a greater use of this strategy in the control ($M = 2.01$) than in the experimental condition ($M = 1.64$, $t(1, 78) = 2.54$, $p < .05$).

Experimenter effects. To ascertain that participants' feeling of comfort with the experimenter did not vary across the four experimenters, a one-way ANOVA was tested on participants' feeling of comfort toward their respective experimenter. The experimenter effect was not significant at all ($F(1, 76) = 0.09$, $\eta^2 = .004$) and participants felt quite comfortable with their experimenter (M s ranged from 5.52 to 5.69).²

Among participants in the experimental condition, the effect of the experimenter was also tested on participants' perceptions toward their relation with the student they chatted with. The MANOVA conducted on participants' perceptions that their relation with their student was productive and harmonious revealed no significant multivariate effect of the experimenter ($F(2, 77) = 0.45$, $\eta^2 = .04$). No univariate effects were found on both the feeling that the relation was harmonious ($F(1, 38) = 0.51$) and on the feeling that the relation was productive ($F(1, 38) = 0.38$). Inspection of the means revealed that participants felt that their relation with their student was quite harmonious (M s ranged from 4.50 to 5.43) and productive (M s ranged from 4.44 to 5.00).

Control variables. Three of the control variables (i.e., comfort with the experimenter, perceived value of the teaching role, competence at the task) were found to be significantly correlated with several main variables. These control variables were thus included in the main

analyses as covariates. After controlling for their effect, the same pattern of results was obtained in these analyses.

Main Analyses

Testing the impact of change on the associations between sense of self and appraisals.

Hierarchical moderated multiple regressions analyses were used to test the impact of the change manipulation on the relationships between sense of self and appraisals (see Tables 7 and 8). As in Study 1, the first step of these analyses included the main effects for the change manipulation and for sense of self. To test for the proposed interactions, multiplicative terms between change and sense of self were entered in the second step of the analyses.

Table 7 presents the results of the analysis predicting positive appraisals toward phase 2 task. As shown in this table, only Step 1 of the analysis accounted for a significant increment of variance in positive appraisals toward the task. Change was found to be the only significant predictor of positive appraisals, thus reproducing the results obtained through t-tests and revealing that positive appraisals were greater in the control than in the experimental condition.

Table 8 presents the results of the analysis predicting negative appraisals toward phase 2 task. Both steps of the analysis accounted for a significant increment of variance in negative appraisals. More specifically, sense of self predicted less negative appraisals toward the task. The sense of self by change interaction was also significant. This interaction was interpreted by decomposing at the two levels of the change variable. Multiple regressions revealed that the negative relationship between sense of self and negative appraisals was not significant in the control condition ($\beta = -.18, t = -1.14, p = .26$), but was highly significant in the experimental condition ($\beta = -.66, t = -5.46, p < .001$).

Table 7.

Hierarchical Regression Predicting Positive Appraisals Toward the Task from Change and Sense of Self (Study 2).

Step	Variable	R^2	$R^2 \Delta$	F	F Δ	β
1	Change	.07 ♦	.07 ♦	2.98 ♦	2.98 ♦	-.24*
	Sense of self					.15
2	Change x Sense of self	.09 ♦	.02	2.44 ♦	1.31	.13

Notes. ♦ = $p < .10$, * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

Table 8.

Hierarchical Regression Predicting Negative Appraisals Toward the Task from Change and Sense of Self (Study 2).

Step	Variable	R ²	R ² Δ	F	F Δ	β
1	Change	.20***	.20***	9.67***	9.67***	.11
	Sense of self					-.42***
2	Change x Sense of self	.25***	.04*	8.35***	4.77*	-.22*

Notes. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

Testing for mediation. Figure 3 presents the results of the path analyses conducted to investigate the mediating role of appraisals and coping in the sense of self – well-being relationships. As in Study 1, path analyses were conducted on the entire sample for both conceptual and statistical reasons. Doing so appeared justified given that all participants, irrespective of the condition they were assigned to, experienced a stress and reported moderately strong appraisals and coping processes. As in Study 1, additional hierarchical moderated multiple regressions were conducted to test if the change manipulation interacted with the associations presented in this model. With the exception of the anticipated interaction between sense of self and change presented above, the change manipulation did not interact with any other associations presented in the path model.

In each multiple regression, all antecedent variables were included as predictors. In line with the data trimming procedure (Pedhazur, 1982), non-significant predictors were excluded and analyses were re-run without those non-significant predictors. Figure 3 presents the results obtained in these final regressions. Baseline well-being was included as a covariate only when predicting final well-being.

As can be seen in Figure 3, sense of self significantly predicted less negative appraisals but did not significantly predict more positive appraisals. Whereas positive appraisals positively predicted task-oriented coping, negative appraisals positively predicted disengagement-oriented coping. Sense of self also directly predicted less disengagement-oriented coping. Controlling for baseline well-being, task-oriented coping positively predicted final well-being at the end of the experiment, whereas disengagement-oriented coping negatively predicted final well-being. Appraisals also directly predicted final well-being, such that positive appraisals positively predicted final well-being and negative appraisals negatively predicted final well-being.

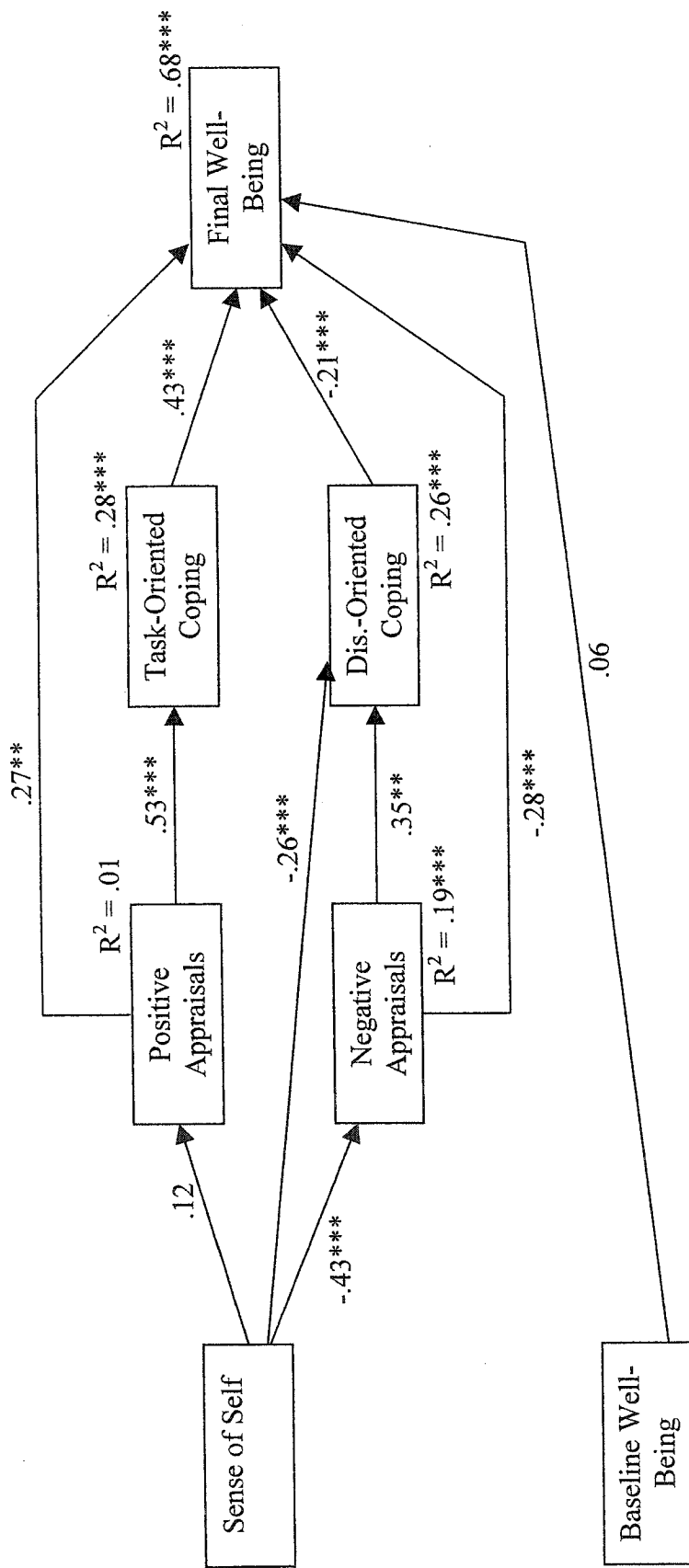


Figure 3.

Results of the Path Analyses (Study 2).

Notes. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

To more formally test for the mediating role of negative appraisals and the two coping types, the Sobel (1982) test was used. Doing so appeared particularly appropriate given that, in the path analyses, sense of self directly predicted disengagement-oriented coping, and that each appraisals type directly predicted final well-being. In that context, the Sobel test could unveil the significance of each mediator over and above these significant direct effects.

Based on the pattern of results obtained in the path analyses, three tests were conducted to test for mediation. These tests revealed that: (1) the mediating role of negative appraisals in the sense of self – disengagement-oriented coping was significant ($z = -3.01, p < .01$), (2) the mediating role of task-oriented coping in the positive appraisals – final well-being relationship was also significant ($z = 2.74, p < .01$), and (3) the mediating role of disengagement-oriented coping in the negative appraisals – final well-being relationship was marginally significant ($z = 1.68, p < .10$). Again, in these two last tests, baseline well-being was controlled for when predicting final well-being.

Chapter Summary and Discussion

The goal of Study 2 was to further investigate the impact of an experimentally-induced change on the associations between sense of self and appraisals as well as to test the mediating role of both appraisals and coping on the associations between sense of self and well-being. Using improved methodological procedures, this second study also aimed at replicating the results obtained in this first study among a larger sample.

It was anticipated that the positive impact of the sense of self on positive appraisals would be stronger in the experimental (i.e., change) condition than in the control condition, and that the negative association between sense of self and negative appraisals would be stronger in the experimental than in the control condition. As coping was added as another mediator of the

Altogether, most of our hypotheses were confirmed. However, a pattern of consistent but unanticipated findings was obtained in both Studies 1 and 2. In fact, although the sense of self significantly predicted less negative appraisals, and that this association was stronger in the experimental than in the control condition, the association between sense of self and positive appraisals was not significant. This lack of significant association was observable in both the control and in the experimental conditions. One possible explanation for this pattern of findings may reside in the nature of positive and negative appraisals as well as to how these two types of appraisals may be differently influenced by the sense of self.

Appraisals have been argued to be very analogous to emotions, in that they capture what a particular situation represents for the individual (Lazarus & Folkman, 1984). Typically, emotions are triggered by the individual's assessment, or appraisal, of the personal meaning of a situation (Lazarus, 1991). Negative emotions reflect danger and threat. Because they point to and are more diagnostic of potential or existing problems, negative emotions elicit more attentional and motivational resources, and are more differentiated and circumscribed (see Fredrickson & Branigan, 2001, for a review; Taylor, 1991). Positive emotions, in contrast to negative emotions, represent more of a neutral, baseline state, and suggest that everything is in order. These positive appraisals thus elicit less strong and less specific reactions and courses of action. For instance, positive emotions have been found to be more interrelated and do not yield distinguishable autonomic responses (Ellsworth & Smith, 1988). In the present laboratory studies, the strong (negative) associations between sense of self and negative appraisals may be due to the fact that such negative and mobilizing appraisals may have been particularly susceptible to the impact of one's self-structure in comparison to positive appraisals.

In fact, negative emotions have been proposed to be particularly likely to be triggered by specific personality characteristics (e.g., Wells & Matthews, 1994). In the context of our experimental condition, negative appraisals, in comparison to positive appraisals, may have been particularly diagnostic of one's sense of self, especially in times of change. This could explain why a strong negative association was observed between the sense of self and negative appraisals, especially among participants experiencing a change, while no association was found between sense of self and positive appraisals. Because the sense of self includes cognitive, affective, and motivational information about the self, this structural part of the self appears to have played a key role in guiding and attenuating participants' negative appraisals toward the change, thus permitting them to perceive the changing situation as being less threatening and less self-relevant.

Along similar lines, Greenier and his colleagues (1999) have proposed specific evaluative processes to explain why a stable self-esteem leads to less negative appraisals toward potentially self-relevant events. Although proposed to apply to self-esteem stability, these processes could apply to the sense of self *as a whole* to explain why, in the context of change, a higher sense of self leads to lower levels of negative appraisals. In line with Greenier et al. (1999)'s propositions, it could be that the higher one's sense of self, the less the experimentally-induced change was appraised as being directly self-relevant. A high sense of self could have led participants not to put their self on the line in this changing situation, and may have prevented them from becoming immersed in their negative emotions toward the changing situation. It should be noted that, in comparison to the control condition, the experimental condition was predominantly characterised by being changing rather than by being specifically threatening (i.e., in Study 1, negative appraisals differed marginally across the two conditions, whereas in Study 2, negative appraisals

did not differ at all across these conditions). However, the lower their sense of self, the more participants appraised the experimentally-induced change as being negative and threatening.

In an analogous manner, the self-schema literature proposes different processes through which negative self-views lead to negative appraisals (Beck, Rush, Shaw, & Emery, 1979). Some of these processes appear relevant to explain why our participants' negative appraisals toward the experimentally-induced change varied with their level of sense of self. For instance, through the process of *selective abstraction*, a low sense of self may have lead one to focus only on a specific aspect of the changing situation (i.e., the negative and threatening nature of the task), while ignoring other features (i.e., the task was also meant to be challenging). Similarly, through the process of *magnification and minimisation*, low sense of self individuals confronted to the change may have minimised the positive aspects of this situation and magnified its threatening aspects. Finally, through the process of *personalisation*, low sense of self participants may have associated the external requirements of the changing experimental condition directly to their self, and may have placed their self-worth on the line when asked to perform the new task, even if there was no objective basis to do so. Future research will need to be conducted to further test the effect of these processes in accounting for why a high sense of self predicts less negative appraisals, particularly in times of change, whereas it does not predict more positive appraisals.

At a methodological level, the modifications brought to the present study on the basis of Study 1 are considered to have substantially improved the experimental protocol used in the study. The larger sample size used in Study 2 allowed to replicate and to add power to the effects obtained in Study 1. Following modifications made to the experimental procedure, the change manipulation now had a negative impact on positive appraisals, revealing that participants in the control group reported greater positive appraisals toward phase 2 task in comparison to

participants in the experimental condition. Moreover, the change manipulation was not associated with final well-being nor with any specific component of the well-being score. Furthermore, the use of multiple experimenters, who each followed standardized instructional and chatting interaction scripts, also allowed to confirm the absence of experimenter effects.

Although the modifications made on the basis of Study 1 allowed to deal with and minimise several biases identified in Study 1, a main limitation of this second study pertains to its ecological and external validity. Given that the use of experiments depends on what is practically and ethically possible to examine participants' reactions when experiencing change, the external validity of this study remains to be established. In fact, changing situations that involve the modification of personal behaviors on a recurring basis (i.e., adapting to the transition to university, changing one's lifestyle in the context of the transition to parenthood, adapting to a new culture) cannot be "sampled" in the laboratory (Cheng, 2001). It thus remains to be determined whether the processes operating in the present laboratory studies can be replicated in the context of an important real life change.

CHAPTER 4

Study 3

The Transition to University

Studies 1 and 2 have supported the significant role of the sense of self in predicting less negative appraisals toward a changing experimental task. These two studies also provided support for the role of appraisals and coping as mediators of the sense of self – well-being relationship. In order to complement these laboratory studies and to verify the external validity of the findings obtained in these studies, the goal of this third study was to test, using a longitudinal design, the hypothesized associations between sense of self, adaptation processes, and well-being in the context of an important real life change. This third study also allowed to investigate further consequences of the adaptation process, namely, changes in the importance attributed to a new self-component and in self-determination, which were conceptualized as two indicators of the level of integration in the self.

The transition to university represents an important life transition as it involves substantial modifications in one's daily routine, the reconstruction of a social network, the development of new strategies to succeed in a more demanding context, as well as the consolidation of one's sense of direction and guidance in preparation for the job market or for graduate studies (see Ruble & Seidman, 1996). In this context, appraisal and coping processes are particularly important as they allow entering students to develop a plan of action for navigating through this transition and to integrate the changes brought about by this life stage (Brisette et al., 2002). Furthermore, given that integration was conceptualized as involving an increased identification with new behaviors and regulations and the incorporation of a new self-component, it appeared particularly relevant, during this life transition, to investigate how

students' motivation toward this newly integrated life context becomes increasingly self-determined as well as how they come to identify themselves as university students.

The purpose of this study was to test the role of the sense of self in predicting positive and negative appraisals toward the transition to university, as well as to investigate the mediating role of appraisals and coping in the associations between sense of self and various consequences. The consequences investigated in this study included psychological well-being, as well as changes in the importance attributed to a new self-component, namely, being a university student, and changes in a specific contextual motivation, more precisely, academic self-determination. Figure 1 presents an overview of these associations.

It was more specifically hypothesized that, in this new and changing experience, the sense of self, assessed at the beginning of the term, would be associated with more positive and with less negative appraisals toward the transition to university at mid-term. Second, positive appraisals would lead to a greater use of task-oriented coping strategies (i.e., assessed at mid-term) when dealing with the transition, and to a lesser use of disengagement-oriented forms of coping. Negative appraisals, however, were expected to negatively predict the use of task-oriented coping and to positively predict disengagement-oriented coping. Third, controlling for baseline well-being, task-oriented coping would then positively predict well-being assessed at the end of the term, while disengagement-oriented coping should negatively predict well-being. It was also anticipated that the use of task-oriented coping should lead to an increase in identification as a university student from the beginning to the end of the term, as well as to an increase in self-determined academic motivation within this same time frame. Inversely, the use of disengagement-oriented coping was expected to predict a decrease in identification as a

university student throughout the term as well as a decrease in self-determined academic motivation.⁵

True change analyses were used to investigate changes in identification as a university student and in academic motivation from the beginning to the end of the term. Using residual scores, well-being assessed at the beginning of the term was also statistically controlled for when predicting well-being at the end of the term.

Method

Participants

Participants in this study were recruited in introductory biology classes offered by the Faculty of Sciences of the University of Ottawa. A total of 804 students were surveyed at Time 1. At Time 2, 523 participants completed the questionnaire, and 565 participants completed the Time 3 questionnaire. A total of 354 participants completed all three questionnaires. Among these participants, the wide majority ($N = 347$) were first year students. Eighteen of these 347 participants presented series of adjacent missing values and had more than 10% of their data missing, and were thus excluded from the sample. The remaining 329 cases presented very few randomly missing data points. The distribution of missing values within these cases, and between the variables, did not present any specific pattern. Each variable presented less than 4% of its data missing. The remaining missing data, representing less than 0.53% of the dataset, was replaced using the regression imputation procedure.

Participants who had completed the three questionnaires comprising the study ($N = 329$) were compared to: (1) those who had completed only the first questionnaire of the study ($N = 248$), (2) those who had completed only the second questionnaire ($N = 55$), and (3) those who had completed only the third questionnaire ($N = 94$). Bonferroni t-tests, which adjusted for the

number of comparisons performed at the three time points, revealed one significant difference between participants who completed only questionnaire 1 in comparison to participants who completed all three questionnaires on the Time 1 academic motivation index. More specifically, participants who completed all three questionnaires of the study reported higher academic self-determination at Time 1 ($M = 12.21$) in comparison to participants who completed only questionnaire 1 ($M = 10.22$; $t(575) = -3.17, p < .005$). Given that no other difference was found on any other variable, that Time 1 academic motivation would in fact be used to construct the latent variable representing change in academic motivation through the true intrapersonal change procedures, and that all possible care had been taken to minimize drop-out (while also respecting ethical standards as well as participants' rights as human subjects), this result will not be further discussed.

The sample ($N = 329$) included 230 women and 99 men. Participants' ages ranged from 16 to 22 years old ($M = 18.2, SD = 0.79$). The majority of the sample had English (56.5%) or French (27.1%) as their mother tongue and 2.1% reported having both. While 229 participants completed the English version of the questionnaires, 100 completed the French version. At the time of the study, the wide majority of participants were full time students (99%) and a minority was enrolled in 3 courses (1%). The mean grade (in percentage) reported by participants in Time 3 questionnaire ranged from 50 to 97 ($M = 77.87, SD = 9.38$) and its distribution was normal (kurtosis = $-.44$; skewness = $-.08$).

The wide majority of participants ($N = 320$) were experiencing the transition to university from high school, while four were in CÉGEP during the year prior to entering university and one participant had been working full-time. Four participants were in university the year prior to the conduct of the study but in a different program ($N = 3$) or institution ($N = 1$). These four students

were compared to students who were either in high school or CÉGEP or working full time. A comparison of the means as evaluated by Bonferonni t-tests revealed no significant differences between those two groups of students. The SEM analyses were also conducted without these four participants and yielded the same results. These four students were thus retained for the analyses.

Among the students transitioning from high school, 178 did not do a 13th grade while being in high school, whereas 142 students did do grade 13th in high school. A total of 135 students also moved before the beginning of the academic year. Among those who moved, 123 changed city. Bonferonni t-tests were also used to compare men ($N = 95$) and women participants ($N = 212$) comprising our sample. No differences were found between these two groups.

Procedure

Participants were recruited in university classrooms, at the very beginning of their first term, as this semester is typically stressful for students entering university (e.g., Feldman & Newcomb, 1994), and provided that the peak transition period occurs during this first semester (Amiot & Blanchard, 2003). Before distributing the first questionnaire, a trained researcher presented information about the study and was available to answer questions. More specifically, the goal of the study was presented, as well as the frequency and the duration of each questionnaire. The researcher informed participants that participation was optional and entirely voluntary, and also explained which precautions would be taken to ensure participants' anonymity and confidentiality. Participants were informed that they could withdraw anonymously from the study at any time. The second questionnaire was completed one month and a half after the first (i.e., slightly after mid-term), while the third questionnaire was completed three months after the first one (i.e., during the last class of the semester).

Measures

In terms of composition, questionnaire 1 included demographic questions, sense of self measures, the Academic Motivation Scale, measures pertaining to one's identification as a university student, and baseline psychological well-being. Questionnaire 2 measured appraisals toward the transition and the coping strategies used to deal with the transition. Finally, the third questionnaire assessed academic motivation, degree of identification as a university student, and psychological well-being. See Appendix I for an overview of the measures used in this study. All instruments used in this study had been previously translated using a back-translation procedure (Vallerand, 1989).

Sense of self measures. The instruments used to measure the sense of self were identical to those used in Studies 1 and 2. For the purpose of the structural equations analyses used in this study, three global self-determination indices were computed from the GMS, instead of just one. More specifically, the equation: $[(3 \times \text{intrinsic motivation} + 2 \times \text{integrated regulation} + \text{identified regulation}) - (\text{introjected regulation} + 2 \times \text{external regulation} + 3 \times \text{amotivation})]$ was used on the items of the GMS rather than on its subscales in order to create three self-determination indices. In this specific dataset, the correlation between global self-determination and self-concept clarity was .32 ($p < .001$), the correlation between self-determination and self-esteem stability was .28 ($p < .001$), and the correlation between self-concept clarity and self-esteem stability was .73 ($p < .001$). As in Studies 1 and 2, values on the three sense of self measures were first standardized and then computed together.

Cognitive appraisals. As in Studies 1 and 2, measures of positive and negative appraisals were based on several instruments (e.g., Folkman & Lazarus, 1985; Long & Schultz, 1995) and were adapted in this study to assess participants' perceptions and feelings toward the transition to

university. The 16 items assessing positive emotions towards the university transition were computed together, while the 18 items assessing negative emotions towards the university transition formed another compute. The other positive appraisals items included the perception that the transition was desirable and that it was positive. The negative appraisals items included the perception that the transition was stressful and that it was threatening.

Coping. The COPE inventory (Carver et al., 1989) was used in this study to assess the coping strategies employed by participants to deal with the transition to university. The COPE has recently been successfully used to assess coping strategies used by students experiencing the transition to university (Amiot, Blanchard, & Dupont, 2003; Brisette et al., 2002). The COPE subscales pertaining to active coping, planning, seeking of social support for instrumental reasons, and acceptance were used to assess task-oriented coping. Goal setting, a task-oriented coping strategy proposed by Skinner et al. (2003), was also assessed given its conceptual and empirical relevance in this study. The COPE subscales measuring behavioral and mental disengagement, as well as denial, were used to assess disengagement-oriented coping. The disengagement-oriented coping strategy of other-blame (i.e., blaming the university), which was derived from Skinner et al. (2003)'s coping taxonomy, was also included given the relevance of this strategy in the context of the study (i.e., during the semester when the study was conducted, the University's logistic resources were put to the test as 50% more university students than usual were being welcomed due to the double-cohort). Alphas for these subscales ranged from .52 to .91.

Identification as a university student. Two instruments were used to assess the degree to which participants identified as university students. The first instrument was adapted from the "Inclusion of the Other in the Self" Scale (Aron, Aron, & Smollan, 1992; Aron, Aron, Tudor, &

Nelson, 1991), which was originally designed to assess the degree of closeness experienced with significant others. This measure has also been shown to be valid when measuring one's closeness to and integration of various self-components, such as group memberships (see Aron & McLaughlin-Volpe, 2001) and important life activities (Blanchard, Perreault, & Vallerand, 1998). When completing this measure, participants were asked to select, among seven pictures representing circles overlapping to differing degrees, the one that best illustrated the relationship between themselves and the role of university student.

A second instrument, originally designed to measure degree of social identity (Jackson, 2002), was adapted to measure three aspects of participants' degree of identification as a university student. First, the cognitive dimension of identity was assessed by asking participants how strongly they identified as a university student (e.g., "I identify myself as a university student"). This subscale showed adequate reliability at both Time 1 and Time 3 (.82 and .88, respectively). Second, the affective component of identity was measured by asking participants how positive they felt as a university student (e.g., "I am glad to be a university student"). The reliability for this scale was adequate at both Time 1 and Time 3 (.77 and .84, respectively). Finally, the meaningfulness of this identity to one's overall life was assessed through questions pertaining to how being a university student provides a sense of purpose and direction (e.g., "Being a university student provides me with clear goals in life"). This subscale showed adequate reliability at both Time 1 and Time 3 (.68 and .76, respectively).

Academic motivation. The Academic Motivation Scale (AMS) measures the types of motivations that represent the reasons for which students go to university (Vallerand et al., 1992, 1993). When completing this scale, participants were presented with a list of items illustrating possible responses to the stem question: "Why do you go to university?" Eighteen of the scale's

32 items were used in the present study, forming six subscales corresponding to the motivational constructs proposed by Deci and Ryan (1985, 2000, 2002). One subscale measures intrinsic motivation (e.g., ‘For the pleasure I experience when I discover new things never seen before’). Four other subscales measure extrinsic motivation: integrated regulation (e.g., ‘Because university experience is very meaningful to me’), identified regulation (e.g., ‘Because eventually it will allow me to enter the job market in a field that I like’), introjected regulation (e.g., ‘To show myself that I am an intelligent person’), and external regulation (e.g., ‘Because with only a high school degree I would not find a job that pays enough’). The last subscale measures amotivation (e.g., ‘I once had good reasons for going to university; however, now I wonder whether I should continue’). When completing this scale, participants were asked to indicate their level of agreement with the reasons as to why they go to university on a 7-point Likert scale ranging from “does not correspond at all” (1) to “corresponds exactly” (7). The AMS has been shown to possess acceptable levels of reliability, validity, and internal consistency (Vallerand et al., 1992, 1993). Results from exploratory and confirmatory factor analyses support the factorial structure of this scale (Vallerand et al., 1992). The equation: $[(3 \times \text{intrinsic motivation} + 2 \times \text{integrated regulation} + \text{identified regulation}) - (\text{introjected regulation} + 2 \times \text{external regulation} + 3 \times \text{amotivation})]$ was used on the items of the AMS to create three academic self-determination indices. In the present study, the AMS presented adequate reliability (alphas ranged from .64 to .80 at Time 1 and from .72 to .89 at Time 3).

Psychological well-being. Ryff’s (1989) measure of psychological well-being assesses six dimensions of well-being – autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. These six subscales were derived from the literature on life-span development, mental health, and personal growth (Ryff, 1989). Given

their conceptual relevance, the first four of these subscales were used in the present study. A version of the scale including 3 items per dimension was used (Ryff & Keyes, 1995). High scorers on purpose in life have a general sense of directedness (e.g., “Some people wander aimlessly through life, but I am not one of them”). A high scorer on personal growth has a feeling of continued development (e.g., “For me, life has been a continuous process of learning, changing, and growth”). Those who are high on autonomy are self-determined and independent (e.g., “I’m not afraid to voice my opinions, even when they are in opposition to the opinions of most people”). Someone high on environmental mastery has a sense of competence in managing the environment (e.g., “In general, I feel I am in charge of the situation in which I live”). Each dimension was assessed using a 6-point scale, which asked participants to rate their level of agreement with each statement (1 = *strongly disagree*, 6 = *strongly agree*). The 12 items of this scale presented adequate reliability at both Time 1 (Cronbach alpha = .66) and Time 3 (Cronbach alpha = .71).

Validity of the transition situation. In all three questionnaires, two questions were included to assess: (1) the extent to which participants experienced change in their life as a result of the transition to university, as well as (2) the extent to which they were currently experiencing the transition. Five-point Likert scales were used for each item and ranged from 1 (no change/the transition process was completed) to 5 (greatest change/being totally in the transition).

In questionnaire 2, a list of new behaviors was presented and participants rated the extent to which each behavior was now adopted as a result of the transition to university using a 7-point scale ranging from 1 (“not at all”) to 7 (“extremely”). This list included the following behaviors: organizing one’s time, planning some time for studying, developing a new social network, thinking about one’s career, contacting profs and TAs, going to the library.

Analyses

The data analyses in Study 3 were accomplished in three steps: (1) preliminary analyses, (2) descriptive analyses, and (3) structural equation modeling procedures. The latter step was itself comprised of two stages: Testing the measurement model and testing the hypothesized model. Structural equation modeling procedures were performed using the EQS program version 6.1. The covariance matrix was analyzed in the present study. Before presenting the results, information regarding how items were combined into observed variables will be presented. Choices made with respect to the estimation method, the type of matrix submitted for analysis, as well as the indicators of model fit that will be reported in the SEM analyses will then follow.

Parcelling of the items. Based on the recommendations of Little, Cunningham, Shahar, and Widaman (2002), parcels of items were formed on the measures of the sense of self, coping, identification as a university student, well-being, and academic motivation. Although parceling is a debated procedure (Little et al., 2002), several reasons underlie the use of parcels for these instruments. First, in comparison to individual items, parcels present advantageous psychometric properties (e.g., greater normality; Bandalos, 2002). Second, models based on parceled data are more parsimonious, have fewer chances for residuals to be correlated, and lead to reductions in various sources of sampling error (Little et al., 2002). Third, parcels can be recommended when the number of items included in a full model is high, which complexifies the model and burdens the computations of model fit indices. This was the case in the present study as 172 individual items were used to assess the constructs of interest. By reducing the number of observed variables included in the model, parceling thus results in a more optimal variable to sample size ratio and more stable parameter estimates (Bagozzi & Heatherton, 1994). Finally, because the present study focused primarily on the relations among the latent variables rather than on the

understanding of the exact relations among the individual items (Little et al., 2002), parceling was considered appropriate.

With respect to the sense of self and well-being measures, the procedure taken to regroup items into parcels involved including, within the *same* parcel, items originating from *different* scales or subscales. More specifically, the three parcels computed for the three sense of self measures involved regrouping, within each parcel, an equal number of items originating from each of the three scales. Thus, each sense of self parcel was composed of: one global motivation index, a compute composed of four items from the Self-Concept Clarity Scale, and a compute composed of two items from the Self-Esteem Stability Scale (because the Self-Esteem Stability Scale contained five items, one of the three parcels included only one item from this scale). In the case of the three psychological well-being parcels, each of those parcels included one item from each of the four subscales of the well-being scale.

Parcels created for the sense of self and well-being measures represent aggregates which mix the items from different scales or subscales and allow to confound the error that is specific to these sources, thus reducing the systematic error originating from each scale or subscale. Doing so appeared particularly appropriate given the psychometric properties of the well-being scale as well as the sense of self constructs. In fact, when taken as a whole, the 12 items of the psychological well-being scale presented adequate reliability, but when individually assessing the reliability of each subscale of the well-being scale, alphas were not as satisfactory. Thus, by mixing the items from different subscales, the measurement error associated with each psychological well-being subscale could be confounded.

As per the sense of self parcels, it should be noted that if these parcels were created by regrouping items from each measure within the same parcel (i.e., one parcel for global

motivation, one for self-concept clarity, one for self-esteem stability), the modification indices of the SEM analysis strongly proposed the addition of a theoretically unconceivable cross-loading between the parcel of global self-determination (i.e., an observed variable) and academic self-determination at Time 1 (i.e., a latent variable). Thus, by mixing the items of the three sense of self components into different parcels, the unique variance attributed to each specific sense of self component could be evenly distributed and no cross-loading needed to be added between the latent factor of academic self-determination at Time 1 and the observed variable of global self-determination.

In contrast to the procedure used when creating the well-being and sense of self parcels, the approach used to create parcels for the measures of coping and identification as a university student is called the internal-consistency approach (Kishton & Widaman, 1994). Such a procedure keeps the original multidimensional nature of the construct explicit given that items measuring the *same* dimension are combined within a *same* parcel. When applying this approach to the instruments assessing identification as a university student and coping, items originating from a same subscale were regrouped within the same parcel.

Finally, with respect to the Academic Motivation Scale, the formula presented in the Methods section was used to weigh items within each parcel. This allowed each academic parcel to contain one item from each motivation subscale and thus to represent academic self-determination.

Assessment of model fit. The maximum likelihood (ML) estimation procedure was used to estimate model fit. Although this estimation method assumes the normality of the data, it is still the most recommended estimation method to deal with non-normality given that the robustness of ML is fairly good even when data is non-normal. While the univariate normality

indices for the observed variables to be used in the hypothesized model were satisfactory (see Table 9), the normalized estimates of multivariate kurtosis yielded by the SEM analysis was 24.69. Given this level of multivariate non-normality, and because non-normal multivariate kurtosis has a particularly damaging impact on the estimates obtained in the context of SEM, fit indices that adjust for non-normality are also reported.

Given the diversity of the fit indices available, and in view of the controversies concerning measures of overall fit (Byrne, 1994), several fit indices will be reported, namely, the chi-square, the CFI, as well as the RMSEA and its associated confidence interval. As for the chi-square ratio, it is desirable to obtain a chi-square that is not significant. But when sample size is large, the chi-square can be significant even when the difference between the hypothesized and observed covariance matrices is minimal. While it is generally not valid to use the chi-square ratio to test the null hypothesis of the overall fit (e.g., MacCallum, Browne, & Sugawara, 1996), it will be reported here for sake of convention as well as to allow the comparison of different nested models (Hoyle & Panter, 1995). The Satorra-Bentler (S-B) chi-square (Satorra & Bentler, 1988), which corrects for non-normality, will also be presented. This index adjusts for the value of the standard chi-square downward by a constant that reflects the degree of observed kurtosis (Kline, 1998).

The CFI compares the chi-square of the estimated model with the chi-square of a null model. The values of the CFI range from zero to one, with a CFI value greater than .90 serving as the conventional lower cut-off of acceptable fit of the model to the data. The value of the CFI is calculated using the chi-square. So, when requesting robust statistics, the CFI is computed using the S-B chi-square, yielding a CFI corrected for non-normality (i.e., *CFI).

The RMSEA assesses the estimated discrepancy, per degree of freedom, between the population covariance matrix and the model. Whereas the RMSEA value would be 0 if the fit of the model was perfect, values smaller than .05 indicate a good fit, and values smaller than .08 represent a reasonable fit. Version 6.1 of the EQS program now includes RMSEA values that adjust for non-normality (i.e., *RMSEA). The confidence interval for each adjusted RMSEA value will also be reported. Such a confidence interval allows to capture the degree of precision of the RMSEA value. The smaller the RMSEA's confidence interval, the more the RMSEA value is a precise indicator of the fit in the population (MacCallum et al., 1996). It should be noted that the significance of the models to be tested will be based on the results obtained for these two last fit indices (i.e., CFI and RMSEA) rather than those obtained for the chi-square ratio.

The Lagrange Multiplier Test (LM-Test) was used as a guide in identifying parameters initially constrained to zero that could contribute most to a significantly better fitting model if freely estimated. Post-hoc model fitting was considered appropriate only when there was sound statistical, theoretical, and empirical justification to do so (Byrne, 1994). To assess the extent to which a respecified model represents an improvement in fit, the differences in χ^2 can be used to compare models. This variation is χ^2 -distributed, with degrees of freedom equal to the difference in degrees of freedom of the two models. A significant difference in χ^2 indicates a substantial improvement in model fit. Finally, the Wald Test was used to identify non-significant parameters.

The statistical analysis of change. Choosing which statistical procedure to use in order to analyze change can be challenging given the variety of techniques currently available. While more classic methods include direct computation of difference scores and the use of the

residualized change scores, these methods have generally been criticized for their unreliability and the fact that their measurement error is confounded with the true observed difference scores (e.g., Burr & Nesselroade, 1990). To counter these biases and problems, novel techniques have been devised to separate the measurement error from the true change, or intraindividual change, components. Because structural equation modeling (SEM) analyses allow the partitioning of true components from measurement error components (Jöreskog, 1993), it has recently been considered a method of choice to analyze change (e.g., Meredith & Tisak, 1990; Raykov, 1992; Willet & Sayer, 1994). Within the framework of SEM, change analyses now include latent growth curve, true individual change, and even multi-level analyses. The method chosen in the context of the present study pertains to the assessment of true intraindividual change, or TIC (Raykov, 1992; Steyer, Eid, & Schwenkmezger, 1997; Steyer et al., 2000).

Various reasons underlie the use of TIC to assess change in the present study. First, in TIC, the true intraindividual change scores (i.e., the difference between two true score variables) between two occasions of measurement are the values of the latent variables. TIC allows to assess whether true intraindividual change itself may be correlated with, or explained by other variables. This is in contrast to latent growth curve modeling (LGC), a popular method to assess change within SEMs (Byrne & Crombie, 2004), which assesses particular components of change (i.e., linear and non-linear patterns of change across three or more occasions – also called growth trajectories), and allows to trace a specific pattern of change. TIC was considered more appropriate in the context of the present study given that the focus was in predicting true intraindividual change from one point in time to the other rather than in investigating the specific pattern of change per se. Referring back to the hypotheses of the study, interest was in predicting how the importance attributed to a new self-component (i.e., identification as a university

student) and academic self-determination change from the beginning to the end of the term. Measuring such changes in identification and in motivation does not involve specifying the exact shape in the variation of these variables but rather concerns the prediction of the true change (i.e., increase vs. decrease) from these two measurement occasions.

It should be noted that, as LCG, TIC allows to model both true individual differences (i.e., intraindividual change: how did each participant change across time) from the group-specific linear trend of true change (interindividual change: how did the entire sample change across time) (Steyer et al., 1997, 2000). However, given that the interest in this study was on predicting intraindividual change rather than interindividual change in the identification as a university student and the academic motivation variables, the interindividual pattern of change in these variables will not be considered in the SEM analyses. However, the Descriptive Statistics section presents more details on the patterns of interindividual change observed on the identification and academic motivation variables among the present sample. While Raykov (1992)'s work pioneered the analyses of TIC, Steyer and his colleagues (1997, 2000) further refined the procedures to assess true intraindividual change within the context of SEMs. In line with Steyer's procedures (Steyer et al., 1997, 2000), the Confirmatory factor analyses section provides more details on how true change variables were assessed and constructed in this study.

In contrast to true change scores, residualized true scores represent latent variables from which the influence of a baseline measure has been partialled out. What remains in these latent variables is residual variance that has been skimmed from measurement error and Time 1 responses (Green-Demers, personal communication, May 2004). In the present study, baseline well-being measured at the beginning of the term (Time 1) was controlled for when predicting end of term psychological well-being (assessed at Time 3). Such a residualized score at Time 3

thus represents Time 3 well-being from which baseline well-being has been statistically extracted and removed. In contrast, changes in identification and in academic motivation variables represent true change variables – i.e., intrapersonal change manifested from Time 1 to Time 3.

Results

Preliminary Analyses and Test of Statistical Postulates

Following the procedures outlined in Tabachnick and Fidell (2001), the standardized scores for the variables included in the model were first examined to identify univariate outliers. Twenty-one univariate outlying scores (i.e., z-scores greater than $|3.29|$) were identified among 14 participants. Given this number of univariate outliers, decisions as to their exclusion were taken in light of patterns in multivariate outlying scores described below. Using mahalanobis distances, 16 participants were identified as multivariate outliers and were excluded from the sample ($\chi^2(28) = 56.89, p < .001$). Given that 7 of these participants also presented univariate outlying scores, removal of the multivariate outliers allowed to decrease the number of univariate outlying scores from 21 to 13. When inspecting the remaining univariately outlying cases, it was decided to remove those ($N = 2$) presenting four outlying scores. The remaining 5 participants presented only one univariate outlier and were retained in the sample given that their outlying score was not implausible and that they could thus be considered part of the population from which we intended to sample. Thus, a total of 311 participants comprised the final sample. This sample size is largely superior to the minimum of 200 participants required for structural equation modeling (Ullman, 2001).

With respect to normality, the summary statistics for the variables of the model were scanned. Table 9 presents the means, standard deviations, kurtosis, and skewness values for these variables.

Table 9.

Descriptive Statistics for the Observed Variables Included in the SEM Model (Study 3).

<i>Variables</i>	<i>M</i>	<i>SD</i>	<i>SK</i>	<i>KU</i>
<i>Sense of Self</i>				
SSPARC1	0.02	0.79	-0.05	-0.02
SSPARC2	0.02	0.76	0.04	-0.18
SSPARC3	0.02	0.70	0.16	0.18
<i>Positive Appraisals</i>				
XAPAX	4.40	0.94	-0.48	0.63
XAPOS_	5.18	1.18	-0.36	-0.22
XADESI_	5.00	1.36	-0.52	-0.06
<i>Negative Appraisals</i>				
XANAX	2.98	1.16	0.62	-0.12
XASTRE_	4.88	1.43	-0.33	-0.48
XATHRE_	2.95	1.37	0.62	-0.05
<i>Task-Oriented Coping</i>				
XACT	4.51	0.94	-0.34	0.14
XPLAN	4.74	1.08	-0.26	-0.33
XSSI	3.86	1.43	-0.05	-0.66
XGOAL	4.92	1.09	-0.59	0.30
XACC	4.96	1.01	-0.27	0.11

<i>Variables</i>	<i>M</i>	<i>SD</i>	<i>SK</i>	<i>KU</i>
<i>Disengagement-Oriented Coping</i>				
XDENI	1.68	1.00	2.10	4.92
XBHV	1.70	0.86	1.57	2.28
XMEN	3.71	1.18	0.24	-0.28
XOB	2.25	1.22	1.17	1.14
<i>Time 1 Identification as a University Student</i>				
IDROLE_	4.67	1.28	-0.37	-0.13
DID	4.86	1.24	-0.51	-0.25
CID	5.17	1.07	-0.64	0.19
QID	5.50	1.01	-0.93	1.24
<i>Time 1 Academic Motivation</i>				
AINDEX1	11.14	8.28	-0.46	0.38
AINDEX2	11.72	7.28	-0.31	0.33
AINDEX3	15.29	7.91	-0.23	0.02
<i>Time 3 Identification as a University Student</i>				
ZIDROL_	4.78	1.29	-0.56	0.05
ZDID	4.74	1.35	-0.52	-0.19
ZCID	5.09	1.13	-0.62	0.04
ZQID	5.24	1.12	-0.67	0.25

<i>Variables</i>	<i>M</i>	<i>SD</i>	<i>SK</i>	<i>KU</i>
<i>Time 3 Academic Motivation</i>				
ZAINDEX1	9.11	9.11	-0.58	0.90
ZAINDEX2	8.67	7.82	-0.72	1.36
ZAINDEX3	11.94	8.33	-0.83	2.36
<i>T1 Well-Being</i>				
PARWB21	4.49	0.68	-0.28	-0.02
PARWB22	4.76	0.75	-0.50	0.07
PARWB23	4.76	0.60	-0.46	0.49
<i>T3 Well-Being</i>				
ZPARWB21	4.34	0.67	0.04	-0.53
ZPARWB22	4.67	0.77	-0.51	-0.07
ZPARWB23	4.64	0.61	-0.06	-0.18

Notes. *M* = Mean, *SD* = Standard deviation, *SK* = Skewness, *KU* = Kurtosis.

Skewness ranged from -0.93 to 2.10, and kurtosis ranged from -0.66 to 4.92. Despite a few high values, univariate values of skewness and kurtosis were generally considered adequate given that mean skewness ($M = 0.52$) and mean kurtosis ($M = 0.60$) were below 1.00. Departures from normality were evaluated by examining a random selection of bivariate scatterplots, which revealed that the normality assumption was respected. Finally, multicollinearity was not a problem in this study as no correlation higher than .80 was found.

Descriptive Statistics

Change in identification as a university student and in academic motivation. In the context of true change analyses, patterns of interindividual changes in the variables pertaining to identification as a university student and academic motivation were inspected. This was a necessary step allowing to adequately interpret the pattern of changes to be obtained in the TIC analyses (i.e., Steyer et al., 2000). Means from Time 1 to Time 3 appeared fairly stable across time (5.05 to 4.96 for the identification variable and 12.71 to 9.94 for the academic motivation variable). However, when creating difference scores between Time 1 and Time 3, several observations can be made which suggest that while the absolute interindividual means for these two variables were quite stable, there was considerable intraindividual variation in these scores.

For instance, the mode for the distribution of the difference score of the identification variable was -0.25, and -3.00 for the difference score of academic motivation, and the skewness and kurtosis values for these difference scores were -0.27 and 1.39, respectively, for the identification variable, as well as -0.37 and 1.00, respectively, for the academic motivation variable. These distributional properties suggest that the distributions of the difference scores are fairly normal, thus implying that the wide majority of participants did change to some degree from Time 1 to Time 3.

In fact, when further looking at the distribution of change scores for these two variables, we can see that, in the case of academic motivation, 66% of participants showed a decrease in academic motivation from Time 1 to Time 3 (this decrease ranged from -1 to -27), while 27% reported an increase in academic motivation (this increase ranged from +1 to +16). Only 7% of participants did not present any changes in their academic motivation scores. For identification as a university student, results revealed that 53% of participants reported a decrease in identification from Time 1 to Time 3 (this decrease ranged from -0.06 to -3.38), 44% showed an increase (ranging from +0.06 to +2.38), whereas only 3% did not change at all. Finally, the correlations observed between Time 1 and Time 3 for the variables of academic motivation and identification as a university student (i.e., $r_s = .71$ for both variables) also suggest that there was not a one-on-one correspondence between participants' responses at Time 1 and at Time 3.

Altogether, these results suggest that, despite the fact that the variables pertaining to identification as university student and to academic motivation presented relatively stable means over time (i.e., interindividual change), the wide majority of participants displayed some degree of intraindividual change in these variables. Furthermore, the pattern of change for each of these two variables followed a quite normal distribution, suggesting that some individuals changed more than others and that the direction of this change also varied between individuals. Based on these patterns of change, we can infer that if *positive associations* are observed in the SEM analyses when predicting changes in identification and in academic motivation, these associations can truly be interpreted as representing the prediction of an *increase* in those variables over time. Conversely, *negative associations* will represent the prediction of a *decrease* in those variables over time (i.e., Steyer et al., 2000).

Validity of the transition situation. To ensure that the transition to university triggered the expected perceptions among students throughout the study, a repeated-measures MANOVA was conducted on participants' perception that they were experiencing change in their life as a result of the transition to university, and on the perception that they were currently experiencing the transition. Time was the independent variable and Helmert planned contrasts were conducted to test for differences between the three specific time points (i.e., beginning of term vs. mid-term; mid-term vs. end of term). Time had a significant multivariate effect on these perceptions ($F(2, 309) = 68.22, p < .001, \eta^2 = .47$). Univariately, Time had a significant effect on the perception of experiencing change in life as a result of the transition ($F(1, 310) = 117.59, p < .001$), revealing that students experienced a lot of change at the beginning of the term ($M = 3.61$), moderate change at mid-term ($M = 3.28$; a significant drop from Time 1: $F(1, 310) = 144.80, p < .001$), and moderate yet lesser change at the end of the semester ($M = 2.71$; a significant drop from Time 2: $F(1, 310) = 90.71, p < .001$). Time also had a significant effect on students' perception that they were currently experiencing the transition to university ($F(1, 310) = 110.78, p < .001$), revealing that students perceived being a lot in the transition at the beginning of the term ($M = 3.48$), as being moderately in the transition at mid-term ($M = 2.82$; a significant drop from Time 1: $F(1, 310) = 168.62, p < .001$), and as being near the completion of the transition process at the end of the term ($M = 2.40$; a significant drop from Time 2: $F(1, 310) = 36.19, p < .001$).

Participants also reported quite high means on the items measuring the extent to which being in the transition to university required them to perform different new behaviors ($M = 4.58$; the means for the different items ranged from 3.34 to 5.70). The two items pertaining to time management received the highest ratings ($M = 5.70$ and 5.60), while the library item was slightly endorsed ($M = 3.34$ – this may be due to the fact that participants were biology students and they

may not have needed to use the library quite a lot). Overall, these results suggest that participants in our sample were in fact experiencing the transition to university during the conduct of the study, and that this transition was perceived as involving considerable change in their lives and as requiring the adoption of new behaviors.

Structural Equation Modeling

Confirmatory factor analyses. Prior to conducting the main analyses, confirmatory factor analyses (CFAs) were conducted to test for the validity of the measurement model.³ A first CFA was performed on the observed variables measuring appraisals toward the university transition at Time 2. First, it was hypothesized that these observed variables were explained by two latent factors, corresponding to positive and to negative appraisals. The observed variables were hypothesized to display significant loadings on their respective latent factor, and zero loadings on the other latent factor. Second, the two latent factors were hypothesized to be correlated. Third, the error variance associated with each observed variable was hypothesized to be significant and not to be correlated with the error variance of any other observed variable. Finally, for identification purposes, the loadings between the first observed variable and its respective latent factor were fixed to 1. The results supported these hypotheses. The model displayed an acceptable fit ($\chi^2(8) = 22.547$, Satorra-Bentler $\chi^2 = 18.218$, CFI = .979, *CFI = .982, RMSEA = .077, *RMSEA = .064 (confidence interval = .024 - .104). All estimated parameters were significant, as confirmed by the Wald test. The LM test revealed that no parameter could be added to improve the model.

A second CFA was performed on the COPE scale used at Time 2. The subscales comprising the COPE served as the observed variables of the underlying latent factors. It was first hypothesized that the responses on the COPE would be explained by two latent factors,

corresponding to task-oriented coping and disengagement-oriented coping. Thus, the observed variables were hypothesized to display significant loadings on their respective latent factor, and zero loadings with the other factor. Second, both latent factors were hypothesized to be correlated. Third, the error variance associated with each observed variable was hypothesized to be significant and not to be correlated with the error variance of any other observed variable. Finally, the loadings between the first observed variable of each latent factor and its respective latent factor was fixed to 1. The results supported these hypotheses and the model presented an adequate fit to the data ($\chi^2(26) = 60.827$, Satorra-Bentler $\chi^2 = 53.058$, CFI = .966, *CFI = .966, RMSEA = .066, *RMSEA = .058 (confidence interval = .035 - .080). All estimated parameters were significant, as confirmed by the Wald test. The LM test revealed that no parameter could be added to improve the model.

A third CFA was conducted on the observed variables designed to assess psychological well-being measured at Time 1 and Time 3. Given that, in the full model, Time 1 psychological well-being was controlled for when predicting Time 3 well-being, and to capture the correlations between the error uniqueness values of the observed variables at Time 1 and Time 3, the three observed variables measuring psychological well-being at Time 1 and the three observed variables measuring psychological well-being at Time 3 were included within the same model. First, it was hypothesized that the responses on the observed variables can be explained by two latent factors: Psychological well-being at Time 1 and psychological well-being at Time 3. Thus, the observed variables were hypothesized to display significant loadings on their target latent factor and zero loadings on the other factor. Second, both latent factors were hypothesized to be correlated. Third, the error variance associated with each observed variable was hypothesized to be significant. The error variance for each observed variable at Time 1 was also hypothesized to

be correlated with the error variance of its corresponding observed variable at Time 3 (see Marsh, Byrne, & Craven, 1992; Steyer et al., 1997). Finally, the loadings between the first observed variable of each latent variable and its target factor were fixed to 1. The model presented a satisfactory fit ($\chi^2(5) = 3.261$, Satorra-Bentler $\chi^2 = 2.794$, CFI = 1.00, *CFI = 1.00, RMSEA = .000, *RMSEA = .000 (confidence interval = .000 - .057)). All estimated parameters were significant, as confirmed by the Wald test. The LM test revealed that no parameter could be added to improve the model.

Specific CFAs were conducted on the variables pertaining to identification as a university student and academic motivation. These CFAs were based on several assumptions put forth by Steyer and his colleagues (2000). Steyer et al. (2000) assume that in the change model tested: (1) there are at least two observed variables measuring the same latent variable for each occasion of measurement (i.e., for each time point), and (2) the measurement model (i.e., the coefficients of the regressions of the observed values on the latent variables) is invariant across occasions. The change model tested is called multistate model (for multiple occasions of measurement) with invariant parameters (MSIP).

The first step in testing the MSIP requires to test for the *invariance* of the measurement model across the different measurement occasions. Figure 4 presents the invariance model tested. When testing this invariance model, it was first hypothesized that the responses on the identification measures and the Academic Motivation Scale assessed at Time 1 and Time 3 were explained by four latent factors: Identification at Time 1, academic motivation at Time 1, identification at Time 3, and academic motivation at Time 3. The observed variables were hypothesized to display significant loadings on their target factor and zero loadings on the other factors. Second, all four latent factors were hypothesized to be correlated.

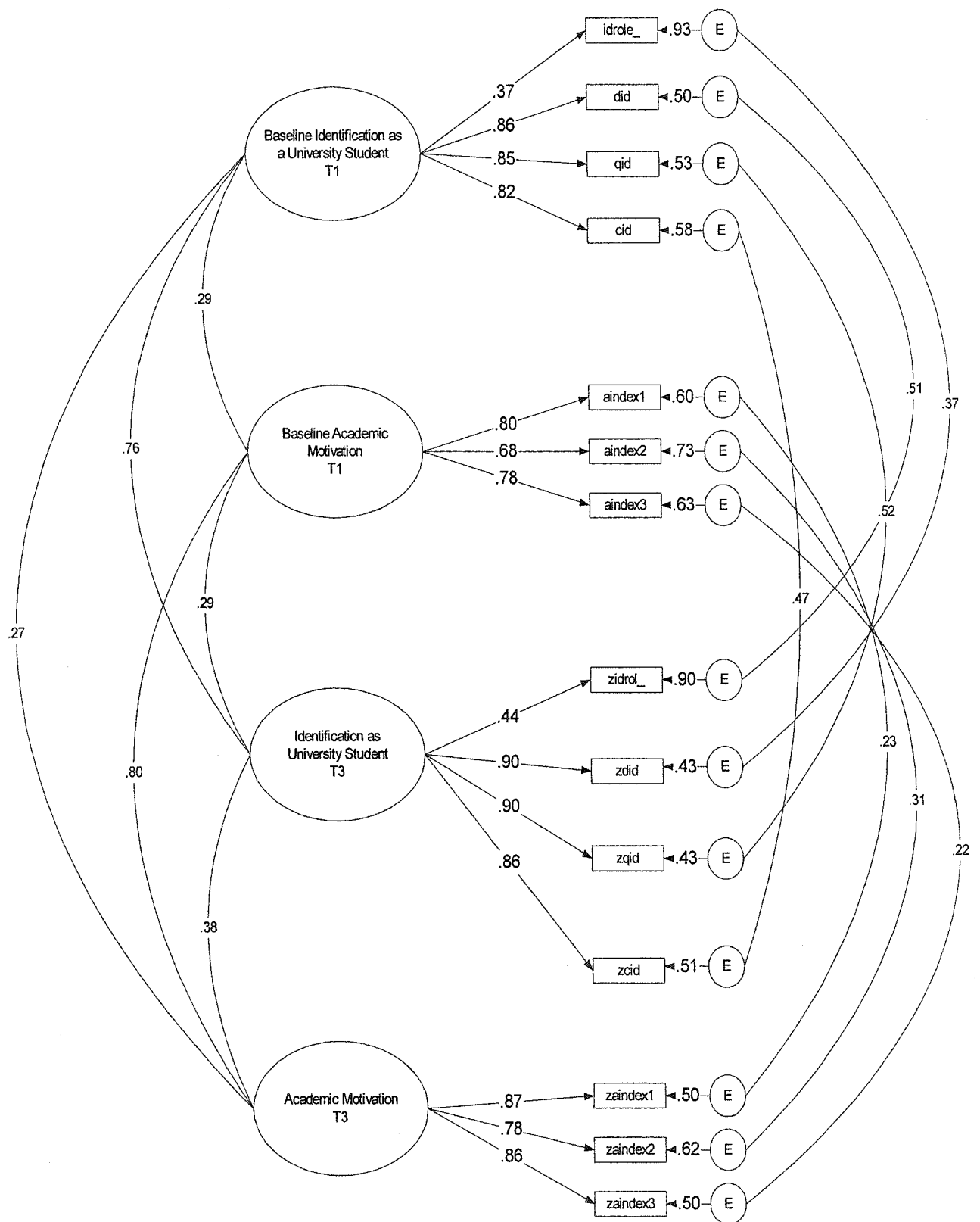


Figure 4. Invariance Model

Third, the error variance associated with each observed variable was hypothesized to be significant. The error variance for each observed variable at Time 1 was also hypothesized to be correlated with the error variance of its corresponding observed variable at Time 3 (Marsh et al., 1992; Steyer et al., 1997). Fourth, the loadings between the first observed variable of each latent factor and its respective latent factor was fixed to 1. Finally, the coefficients of corresponding observed variables on their latent factors should be invariant across Time 1 and Time 3 (e.g., the link between *aindex1* and the academic motivation latent factor at Time 1 should be equivalent to the link between *zaindex1* and the academic motivation latent factor at Time 3).

In the present study, complete invariance was obtained, that is, the coefficients of corresponding observed variables on their latent factors were invariant from Time 1 to Time 3. The fit of the model was acceptable ($\chi^2(69) = 203.923$, Satorra-Bentler $\chi^2 = 169.763$, CFI = .954, *CFI = .951, RMSEA = .079, *RMSEA = .069 (confidence interval = .056 - .082). All estimated parameters were significant, as confirmed by the Wald test. The LM test revealed that model fit could be significantly improved by adding cross-loadings. Because such cross-loadings were not hypothesized, and given the already acceptable fit of the model, no modifications were brought to the model.

The second step involves testing a *state version* of the invariance model, in which equality constraints are released. Doing so should yield fit indices that are not significantly different from those of the invariance model. In fact, the state model did not significantly differ from the invariance model ($\chi^2(5) = 6.023, p > .05$).

Finally, a *baseline model* was tested. Figure 5 presents an illustration of this model. When testing this baseline model, it was first hypothesized that the responses on the identification measures and the Academic Motivation Scale assessed at Time 1 and Time 3 were

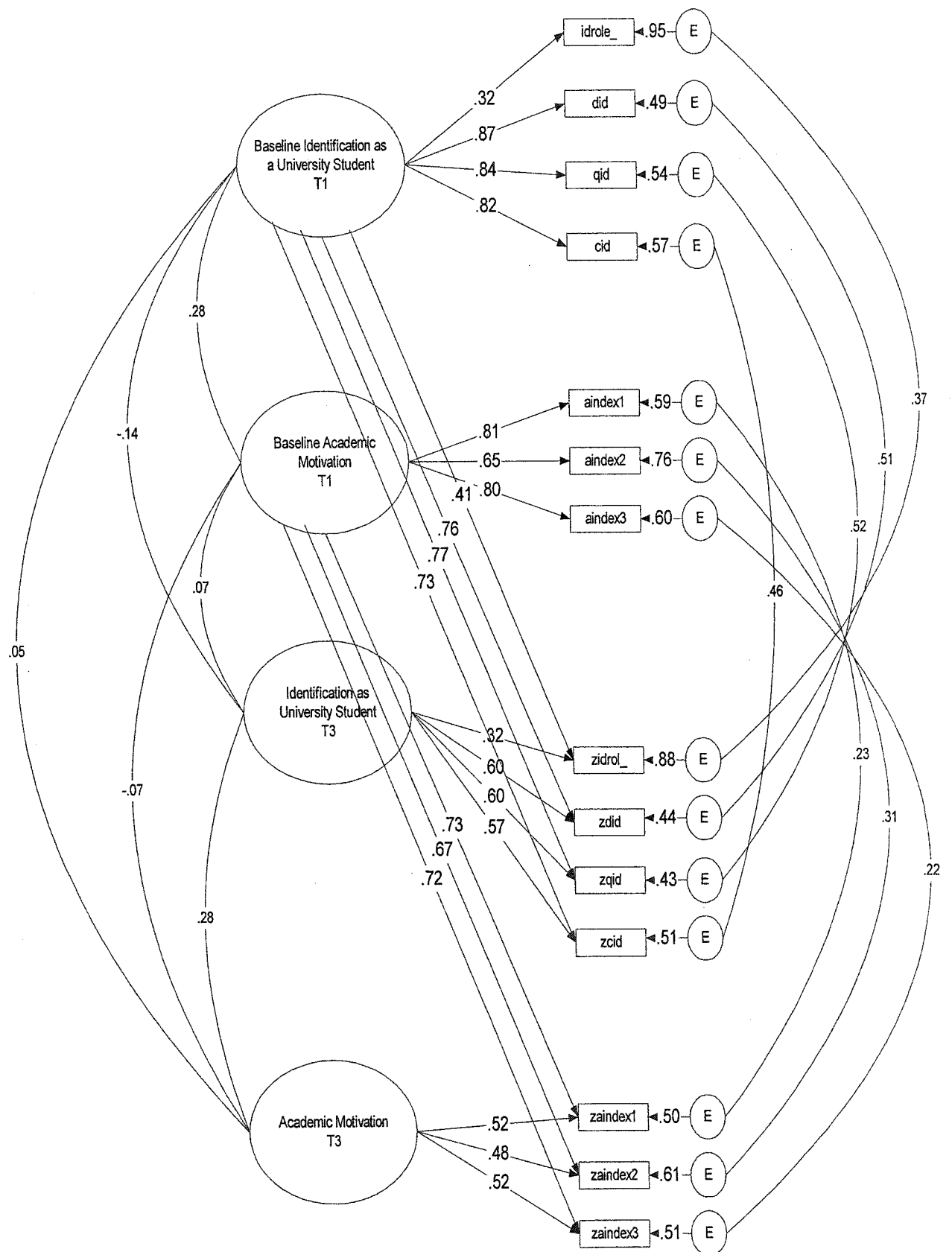


Figure 5. Baseline Model

explained by four latent factors: Identification at Time 1, academic motivation at Time 1, identification at Time 3, and academic motivation at Time 3. Observed variables at Time 1 were hypothesized to display significant loadings on their Time 1 target factor and zero loadings on the other factors. However, Time 3 observed variables were hypothesized to be predicted by their respective latent factors at both Time 1 and Time 3. Second, all four latent factors were hypothesized to be correlated. Third, the error variance associated with each observed variable was hypothesized to be significant. The error variance for each observed variable at Time 1 was also hypothesized to be correlated with the error variance of its corresponding observed variable at Time 3 (Marsh et al., 1992; Steyer et al., 1997). Fourth, the loadings between the first observed variable of each latent factor and its respective latent factor was fixed to 1. Finally, the coefficients of Time 3 observed variables on their respective Time 1 and Time 3 latent factors should be invariant across time (e.g., the link between *zaindex1* and the Time 1 academic motivation latent factor should be equivalent to the link between *zaindex1* and the Time 3 academic motivation latent factor).

All constraints in this baseline model were invariant and the model presented an adequate fit to the data ($\chi^2(64) = 197.847$, Satorra-Bentler $\chi^2 = 164.597$, CFI = .954, *CFI = .951, RMSEA = .082, *RMSEA = .071 (confidence interval = .058 - .084). The LM test revealed that significant improvement could be made by adding cross-loadings. Because such cross-loadings were not hypothesized, and given the already acceptable fit of the model, no modifications were brought to the model. Four estimated parameters were not significant, as confirmed by the Wald test. Those pertained to the covariances between: (1) academic motivation at Time 1 and academic motivation at Time 3, (2) identification as a university student at Time 1 and identification at Time 3, (3) academic motivation at Time 1 and identification as a university

student at Time 3, and (4) identification as a university student at Time 1 and academic motivation at Time 3. Another model, which excluded these covariances, was tested, but did not differ from the previous one ($\Delta \chi^2(4) = 8.818, p > .05$). The fit of this final model remained satisfactory ($\chi^2(68) = 206.665$, Satorra-Bentler $\chi^2 = 171.424$, CFI = .953, *CFI = .950, RMSEA = .081, *RMSEA = .070 (confidence interval = .057 - .083). This final model was also tested against a model without constraints but did not differ significantly from it ($\chi^2(5) = 4.234, p > .05$).

To summarize, every multistate model with invariant parameters may be transformed into a baseline version. In this baseline model, the value of the latent variables represents true intraindividual change. For instance, in our baseline model, the values of the Time 1 – Time 3 variables are now latent difference variables, which represent the true intraindividual changes that occurred between Times 1 and 3. In this model, the Time 1 latent variable serves as the baseline against which change at subsequent occasions (i.e., Time 3) is to be analyzed. After the latent difference variables are created, we can treat them as ordinary latent variables in structural equation modeling, either as exogenous or as endogenous variables (Raykov, 1992; Steyer et al., 1997, 2000). In this study, the latent change variables were used as endogenous variables and were embedded within a full SEM model in order to test if adaptation processes lead to more vs. less intraindividual change.

Full model. Table 10 presents the correlations between the variables representing the latent factors used in the full model. As mentioned previously, the identification as university student and academic motivation latent factors that we aimed to predict in the full model represent true intraindividual change, whereas the well-being latent factor to be predicted in the

Table 10.

Correlations between the Latent Variables (Study 3).

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Sense of self	-									
2. Positive appraisals	.19**	-								
3. Negative appraisals	-.33***	-.25***	-							
4. Task-oriented coping	.15**	.47***	.06	-						
5. Disengagement-oriented coping	-.28***	-.25***	.41***	-.25***	-					
6. Time 1 identification as univ. student	.06	.29***	.16**	.40***	-.01	-				
7. Time 3 identification as univ. student	.06	.34***	.12*	.43***	-.03	.71***	-			
8. Time 1 academic motivation	.41***	.43***	-.18**	.34***	-.22***	.28***	.26***	-		
9. Time 3 academic motivation	.37***	.43***	-.22***	.36***	-.31***	.28***	.34***	.71***	-	
10. Time 1 well-being	.46***	.29***	-.21**	.33***	-.20***	.20**	.16**	.52***	.45***	-
11. Time 3 well-being	.52***	.32***	-.35***	.35***	-.36***	.15**	.19**	.46***	.58***	.53***

Notes. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

model represents residualized true scores. The measurement portion of the model was specified in accordance with the results presented in the preceding section.

When conducting the CFAs, the baseline model included covariances between latent factors assessed at the same time point. For this reason, the full model estimated the covariances between Time 1 identification as a university student and Time 1 academic motivation, while a correlated disturbance was estimated between Time 3 identification as a university student and Time 3 academic motivation.

With respect to the structural level of the model, it was hypothesized that the sense of self would positively predict positive appraisals toward the transition to university and would negatively predict negative appraisals toward this transition. In turn, positive appraisals should positively predict the use of task-oriented coping strategies to deal with the university transition and negatively predict the use of disengagement-oriented coping strategies. Inversely, negative appraisals should positively predict the use of disengagement-oriented coping but negatively predict the use of task-oriented coping. Finally, task-oriented coping should positively predict psychological well-being and should also lead to an increase in identification as a university student throughout the semester and to an increase in academic motivation. Conversely, disengagement-oriented coping should negatively predict psychological well-being, and should also predict a decrease in identification as a university student throughout the semester as well as a decrease in academic motivation. Figure 6 presents these anticipated associations.

The covariance matrix obtained for the observed variables used in the full model is presented in Appendix J. It should first be noted that, within the full model, the measurement model obtained for the sense of self latent factor was satisfactory as each estimated parameter was significant.

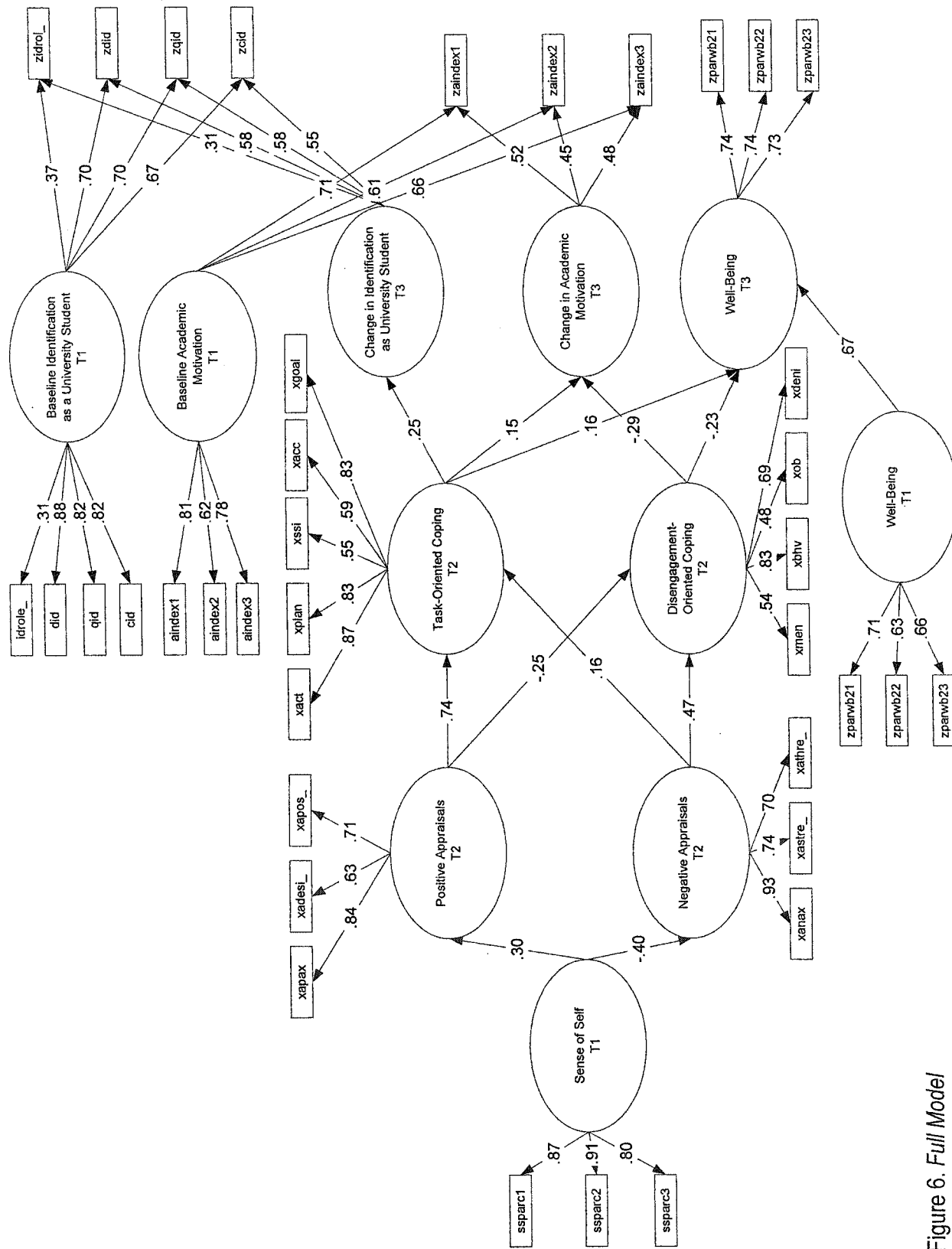


Figure 6. Full Model

When first tested, the model revealed a non-satisfactory fit to the data ($\chi^2 = 1543.124$, Satorra-Bentler $\chi^2 = 1362.261$ (640), CFI = .868, *CFI = .873, RMSEA = .067, *RMSEA = .060 (confidence interval = .056 - .065). The LM test suggested the addition of a covariance between Time 1 well-being and sense of self. This covariance was thus added and the model retested. The conceptual justifications underlying the addition of non-hypothesized parameters will be presented in the Discussion section.

While the inclusion of this parameter resulted in a significant improvement in the model ($\Delta \chi^2(1) = 109.013$, $p < .001$), the overall fit of the model was not yet satisfactory ($\chi^2 = 1419.903$, Satorra-Bentler $\chi^2 = 1253.248$ (639), CFI = .886, *CFI = .892, RMSEA = .063, *RMSEA = .056 (confidence interval = .051 - .060). The LM test at this stage suggested the addition of the covariance between Time 1 well-being and Time 1 academic motivation. This parameter was thus added and the model re-estimated. Although doing so resulted in a significant improvement of the model ($\Delta \chi^2(1) = 37.663$, $p < .001$), the model was still non-satisfactory ($\chi^2 = 1371.630$, Satorra-Bentler $\chi^2 = 1215.585$ (638), CFI = .893, *CFI = .898, RMSEA = .061, *RMSEA = .054 (confidence interval = .049 - .059). The LM test suggested the addition of a covariance between sense of self and Time 1 academic motivation.

Inclusion of this covariance in the model resulted in a significantly better fit ($\Delta \chi^2(1) = 58.847$, $p < .001$). The fit indices at this point became satisfactory ($\chi^2 = 1307.196$, Satorra-Bentler $\chi^2 = 1158.738$ (637), CFI = .902, *CFI = .908, RMSEA = .058, *RMSEA = .051 (confidence interval = .047 - .056). Although the LM test suggested that other parameters could be added to further improve the model, it was decided not to add parameters to the model for conceptual and statistical reasons that will be elaborated below. The only non-significant parameters in this model were: (1) the beta coefficient of the association between

disengagement-oriented coping and change in identification as a university student and (2) the covariance between the error uniqueness of the *aindex1* and the *zaindex1* observed variables. These parameters were excluded and the model retested. This final model did not differ from the preceding one ($\Delta \chi^2(2) = 2.985, p > .05$) and was also significant ($\chi^2 = 1311.066$, Satorra-Bentler $\chi^2 = 1161.723$ (639), CFI = .902, *CFI = .908, RMSEA = .058, *RMSEA = .051 (confidence interval = .047 - .056). Due to space constraints, Figure 6 does not present the estimated error variances associated with each observed variables, nor does it present the covariances between the Time 1 variables estimated in the model. The estimated associations between these Time 1 variables are presented in Table 11.

Indirect and total effects. Whereas the full model allowed to test the hypothesized direct effects between the latent factors, the indirect and total effects between the latent factors of the model were also investigated and are presented in Table 12. Doing so allowed to further test for the mediating role of appraisals and coping. Results indicated that appraisals significantly mediated the impact of the sense of self on both coping types and on all three outcome variables (i.e., change in identification as a university student, change in academic motivation, well-being). Coping also significantly mediated the impact of both sense of self and of appraisals on these three consequences. The indirect effects of sense of self on task-oriented coping and on all three consequences were positive. The indirect effects of positive appraisals on the three consequences were also positive. Inversely, the indirect effect of the sense of self on disengagement-oriented coping was negative. Whereas negative appraisals had negative indirect effects on two of the three consequences (i.e., change in academic motivation and psychological well-being), the indirect effect of negative appraisals on the change in identification variable was positive and will be discussed below.

Table 11.

Correlations between the Exogenous Latent Factors Estimated in the SEM Model (Study 3).

<i>Factors</i>	1.	2.	3.
1. Sense of self	-		
2. Time 1 well-being	.72***	-	
3. Time 1 identification as a university student	-	-	-
4. Time 1 academic self-determination	.50***	.69***	.19**

Notes. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

Table 12.

Indirect and Total Effects for the Latent Variables of the SEM Model (Study 3).

	Positive Appraisals			Negative Appraisals			Task-Oriented Coping			Disengagement-Oriented Coping			Change in Identification as Student			Change in Academic Motivation			Time 3 Psychological Well-Being		
	Indirect Effects	Total Effects	Indirect Effects	Indirect Effects	Total Effects	Indirect Effects	Indirect Effects	Total Effects	Indirect Effects	Indirect Effects	Total Effects	Indirect Effects	Indirect Effects	Total Effects	Indirect Effects	Indirect Effects	Total Effects	Indirect Effects	Indirect Effects	Total Effects	
Sense of Self	--	.30*	--	--	-.40*	.16*	.16*	.16*	-.26*	-.26*	-.26*	.04*	.04*	.04*	.10*	.10*	.10*	.09*	.09*	.09*	
Positive Appraisals	--	--	--	--	--	--	--	.74*	--	--	-.25*	.18*	.18*	.18*	.19*	.19*	.19*	.17*	.17*	.17*	
Negative Appraisals	--	--	--	--	--	--	--	.16*	--	--	.47*	.04*	.04*	.04*	-.11*	-.11*	-.11*	-.08*	-.08*	-.08*	
Task-Oriented Coping	--	--	--	--	--	--	--	--	--	--	--	--	--	.25*	--	--	.15*	--	--	.15*	
Disengagement-Oriented Coping	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-.29*	--	--	-.23*	
Time 1 Psychological Well-Being	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	.67*	

Notes. * = $p < .05$.

Overall, these results support the role of appraisals in mediating the associations between sense of self and coping. Appraisals also mediated the associations between sense of self and all three outcome variables. Coping was also identified as a significant mediator in the relationships between appraisals and outcome variables, as well as in the associations between sense of self and these outcome variables.

Different reasons underlie the choice of the full model described above as a final one and our decision not to add further parameters to improve the fit of this model. First, parsimony is a fundamental issue in the scientific process in general and in model building in particular (Byrne, 1994). Inclusion of non-hypothesized parameters makes the model more difficult to replicate in future studies. Also, the addition of non-anticipated parameters in the model leads to an exploratory approach to model testing rather than to a strictly confirmatory approach (Jöreskog, 1993). We thus tried to rely, as much as possible, on a confirmatory rather than an exploratory approach.

Second, although the fit of the final model could be considered marginal (i.e., $*CFI = .908$), this fit was considered adequate in the present context. In fact, because fit indices are not independent of sample size, marginally significant fit indices can be expected when sample size is not very large ($N < 500$). This effect is exacerbated when the model is complex (Bollen, 1989) and the latent constructs are correlated (Hu & Bentler, 1995). Because the model presented here was quite complex and the latent factors were strongly correlated (see Table 10), the fit of the final model was thus considered appropriate.

Third, the restricted RMSEA confidence interval obtained in our model (i.e., $.047 - .056$) suggests that we can be very confident that the acceptable RMSEA value observed in this model

is a precise indicator of the fit in the population (MacCallum et al., 1996), thus adding validity and strength to the present findings.

Fourth, the model tested provided a quite stringent test of our hypotheses given that it involved the use of both true change variables and residualized true scores. For instance, when testing an alternative model which predicts Time 3 consequences, but without true change scores (i.e., on the identification as a university student and on the academic motivation variables) nor residualized true scores (i.e., on the well-being variable), this simpler model presented better fit indices. The fit indices for this simpler model, with no parameters added, is as follows: $\chi^2 = 853.093$, Satorra-Bentler $\chi^2 = 747.027$ (337), CFI = .890, *CFI = .896, RMSEA = .070, *RMSEA = .063 (confidence interval = .057 - .069).⁴ However, such a model is less sophisticated both conceptually and statistically, as it cannot account for the true intraindividual change in identification and academic motivation variables, nor can it control for Time 1 well-being.

Chapter Summary and Discussion

Study 3 aimed at testing the hypothesized model in the context of an important life change, namely, the transition to university. It was first hypothesized that, in this changing situation, the sense of self, assessed at the beginning of the term, would predict more positive and less negative appraisals toward the transition to university at mid-term. Second, positive appraisals of the transition were hypothesized to predict a greater use of task-oriented coping strategies but a lesser use of disengagement-oriented forms of coping assessed at mid-term. Inversely, negative appraisals should negatively predict task-oriented coping and positively predict disengagement-oriented coping. Third, controlling for baseline well-being, task-oriented coping was hypothesized to predict more well-being assessed at the end of the term, while

disengagement-oriented coping should predict less well-being. It was also anticipated that the use of task-oriented coping would lead to increases in identification as a university student and in self-determined academic motivation between the beginning and the end of the term. Conversely, it was anticipated that the use of disengagement-oriented coping would predict decreases in identification as a university student throughout the term, as well as in self-determined academic motivation.

True change analyses were used to investigate intraindividual changes in identification as a university student and in academic motivation from the beginning to the end of the term, and residual scores were used to control for well-being assessed at the beginning of the term.

Globally, the results supported the hypotheses. With the exception of the association between disengagement-oriented coping and change in identification as a university student, all hypothesized structural coefficients were significant. One direct association was not in the expected direction (i.e., negative appraisals positively predicted the use of task-oriented coping).

The non-significant association observed between disengagement-oriented coping and change in identification as a university student suggests that, while task-oriented coping predicted an increase in this identification, the negative impact of disengagement-oriented coping was circumscribed to academic motivation and well-being. This pattern of findings could be explained by the fact that the development of a new self-component may be more closely associated with actions and cognitions that actively allow to build this new identity (see Harter, 1999). While coping strategies that focus on disengaging from this new life context seem to have a neutral effect on the construction of this identity, the negative impact of disengagement-oriented coping appears to be more pronounced on variables that are concretely tied to the action performed in the new life context (i.e., academic motivation) and on one's global well-being.

The unanticipated positive association observed between negative appraisals and task-oriented coping is particularly interesting and contradicts some findings from the stress and coping literature, which have revealed negative associations between these constructs. However, this finding should be placed in its context. First, the strength of the association between positive appraisals and task-oriented coping was very large (i.e., $\beta = .74$) in comparison to the association between negative appraisals and task-oriented coping ($\beta = .16$), thus suggesting that the predominant predictor of task-oriented coping was positive appraisals. Second, even if negative appraisals positively predicted task-oriented coping, these negative appraisals were much stronger predictors of disengagement-oriented coping ($\beta = .47$).

In this context, negative appraisals may have warned participants that the negative, stressful, and threatening nature of the situation necessitates them to use *both* task-oriented strategies and disengagement-oriented coping strategies to deal with such a situation. However, these negative appraisals predominantly led to the use of disengagement-oriented coping strategies. These findings could suggest that *some* amount of negative appraisals may be adaptive in triggering the necessary task-oriented coping actions but that *too much* negative appraisals may impede the adaptation process in leading to the use of disengagement-oriented coping.

The unexpected positive indirect effect obtained between negative appraisals and change in identification as a university student could be interpreted along the same lines. In fact, this indirect effect, although significant, was quite small ($\beta = .04$). Moreover, the indirect effect of positive appraisals, as well as the direct effect of task-oriented coping on change in identification, were more important (β s = .18 and .25, respectively). These results could suggest that a certain amount of negative appraisals can have a positive effect in connecting the individual on the perceived demands, albeit negative, of the situation, and in carrying out the

tasks allowing for the integration of a new self-component. Future research will need to verify these claims as well as the hypothesis suggesting that specific amounts of negative appraisals – to the extent that they do not become overwhelming – may actually trigger adaptive adaptation processes and may yield positive consequences.

Three unanticipated parameters were added to the model. Although included in the model in an a posteriori manner, we believe that their inclusion was justified on conceptual grounds. For instance, the association between sense of self and Time 1 well-being is in accord with previous literature revealing a positive association between each component of the sense of self and well-being (e.g., Campbell, 1990; Campbell et al., 1996; Deci & Ryan, 2002; Kernis, 1995; Kernis et al., 2000; Vallerand, 1997). Moreover, these latent constructs were measured at the same moment (i.e., in questionnaire 1 distributed at the beginning of the term), thus increasing the variance shared by these constructs and the chance of finding a relationship between them.

The association added between Time 1 academic self-determination and Time 1 well-being appears justified for similar reasons. According to the hierarchical model of intrinsic and extrinsic motivation (Vallerand, 1997), academic self-determination represents a specific life context and is thus a contextual motivation, which should have a particularly strong impact on consequences located at the same level of generality (in this case, the academic domain). However, the hierarchical model also postulates the existence of both bottom-up and top-down processes to account for the associations between constructs from different levels of generality. Although these top-down and bottom-up effects should be weaker than those emerging within a same level of generality, many studies have found direct links between a specific contextual motivation and global consequences such as general well-being (e.g., see the studies reviewed by Deci & Ryan, 2000, 2002; Koestner & Losier, 2002; Ryan & Deci, 2001).

Finally, the association added between sense of self and Time 1 academic motivation is also in line with the tenets of the hierarchical model of intrinsic and extrinsic motivation. Because one of the three components of the sense of self pertains to global self-determination, and given that, according to the hierarchical model, global factors can have a top-down effect on contextual ones, it is conceptually conceivable to add an association between sense of self and Time 1 academic motivation. Nevertheless, given their a posteriori nature, future research will need to replicate these unexpected associations.

While the present study built on the previous ones by testing the hypothesized associations longitudinally during an important real life change, and by investigating further consequences of the adaptation process, certain limitations must be acknowledged. First, although measures were collected at three different points in time, no causality can be firmly established in this specific study given the correlational nature of its design. Also, while the three unanticipated parameters added to the model in order to reach a significant fit were conceptually justified, the present results were not obtained using a strictly confirmatory approach.

In summary, in the context of the transition to university, the sense of self was indirectly and positively associated with well-being at the end of the term, as well as with increases in identification as a university student and in academic motivation throughout the term. These effects were obtained through the mediating impact of appraisals and coping. Appraisals directly predicted coping. Finally, coping predicted end of term well-being as well as increases in identification as a university student and in academic motivation throughout the term. Two unanticipated effects emerged: the hypothesized association between disengagement-oriented coping and decrease in identification as a university student was not significant, while a positive association was observed between negative appraisals and task-oriented coping. Although Study

3 allowed to test the hypothesized associations in the context of a real life change, additional research is needed to replicate the present findings in other real life changes in order to further test the external validity of these findings.

CHAPTER 5

General Discussion

Summary of Findings

The aim of the present thesis was to investigate both antecedents and consequences associated with the process of adapting to change. The sense of self, as a structural part of the self, was proposed to act as an antecedent variable predicting how individuals appraise a changing situation. Appraisals and coping were hypothesized to be adaptation processes mediating the associations between sense of self and various consequences. The consequences investigated pertained to psychological well-being as well as to changes in the importance attributed to a new self-component and in self-determined motivation. Given that these two last consequences were conceptualized to be integration indicators, this thesis aimed at providing preliminary evidence for the integration processes proposed by self-determination theory (SDT).

It was more formally hypothesized that, when dealing with change, the sense of self would predict more positive appraisals toward this change but less negative appraisals. In turn, positive appraisals should positively predict the use of task-oriented coping and negatively predict disengagement-oriented coping, whereas negative appraisals should negatively predict task-oriented coping and positively predict disengagement-oriented coping. Task-oriented coping was hypothesized to positively predict well-being as well as increases in the importance attributed to a new self-component and in a new contextual motivation. On the other hand, disengagement-oriented coping was hypothesized to predict lower levels of well-being as well as decreases in the importance attributed to a new self-component and in contextual motivation. Three studies were conducted to test these hypotheses. The specific goals, hypotheses, and results for these studies are presented in the section below.

Studies 1 and 2. These first two studies were designed to test, during a laboratory-induced change, the sense of self as a particularly strong predictor of appraisals toward this change. Furthermore, these studies aimed at verifying the mediating role of adaptation processes (i.e., appraisals and coping) in the association between sense of self and psychological well-being.

In both studies, participants were randomly assigned either to the experimental (i.e., change) condition or to the control condition, in which no change was manipulated. The experimental condition involved performing different tasks in phase 1 and phase 2 of the experiment, while in the control condition, phases 1 and 2 involved performing the same task, thus inducing no change between these two phases. In both studies, the sense of self was measured before the start of the study, whereas appraisals toward the task involved in phase 2 were assessed just before participants were asked to perform this second task. Both studies assessed baseline well-being just before the experiment began and final well-being at the end of the experiment. In Study 2, coping strategies used to deal with phase 2 task were assessed at the end of this second phase.

In line with our predictions, the sense of self was more strongly negatively associated with negative appraisals among participants experiencing change than among participants in the control condition. This result was obtained in both studies. However, contrary to predictions, Studies 1 and 2 revealed that the sense of self was not more strongly associated with positive appraisals in the experimental than in the control condition. In fact, in both studies, sense of self did not significantly predict positive appraisals. To account for these results, different perceptual processes were proposed based on the work by Greenier and his colleagues (1999), as well as on the self-schema literature (Beck et al., 1979).

In order to test the mediating role of appraisals and coping in the sense of self – well-being association, path analyses as well as mediational analyses were conducted. These associations were tested among the entire sample given that both the experimental and the control conditions elicited moderate levels of appraisals and coping, that both conditions were meant to induce performance-related stress and to be moderately stressful, and that the change manipulation did not moderate any of the associations presented in those path analyses (apart from the hypothesized association between sense of self and negative appraisals). Results obtained in Study 1 supported the mediating role of negative appraisals in the sense of self – well-being relationship. Results obtained in Study 2 further showed that: (1) negative appraisals mediated the sense of self – disengagement-oriented coping relationship, (2) disengagement-oriented coping mediated the negative appraisals – final well-being relationship, and (3) task-oriented coping mediated the positive appraisals – final well-being relationship.

In sum, results pertaining to the effect of change on the association between sense of self and appraisals, as well as those obtained regarding the mediating role of appraisals, were congruent in both Studies 1 and 2. Study 2 allowed to replicate and refine the results obtained in Study 1 as coping was also assessed as a mediational process through which sense of self and appraisals predicted final well-being.

Study 3. This study was designed to test the hypothesized model in the context of a real life change: the transition to university. The entire set of variables was tested in this model. More specifically, in addition to well-being, two other consequences were investigated, namely intraindividual changes in the importance attributed to a new self-component (i.e., identification as a university student) and in a new contextual motivation (i.e., academic motivation). The full model was tested using a 3-wave longitudinal design.

Replicating the results obtained in Studies 1 and 2, results obtained in Study 3 showed that the sense of self predicted lower levels of negative appraisals toward the transition to university. Contrary to these two first studies, sense of self also predicted more positive appraisals toward this transition. In turn, these positive appraisals lead to the use of more task-oriented coping to deal with the transition and to a lesser use of disengagement-oriented coping. Negative appraisals positively predicted both task-oriented coping and disengagement-oriented coping. Finally, while task-oriented coping positively predicted well-being, as well as increases in identification as a university student and in academic motivation, disengagement-oriented coping lead to less well-being as well as to a decrease in academic motivation.

Results from indirect effects analyses further revealed that both appraisals and coping significantly mediated the associations between sense of self and the different consequences (i.e., psychological well-being, changes in identification as a university student and in academic motivation).

While only one hypothesized association was not significant (i.e., between disengagement-oriented coping and decrease in identification as a university student), two unexpected effects were found: (1) a direct positive effect between negative appraisals and task-oriented coping, and (2) an indirect positive effect between negative appraisals and an increase in identification as a university student. In order to interpret these unanticipated results, they were first placed into their context (i.e., these effects, albeit significant, were quite small). These results were then explained by the possibly invigorating role of such negative appraisals when adapting to change, and the fact that a moderate amount of negative appraisals could have a beneficial impact on the adaptation process.

Different findings across the studies. Although, at large, the results obtained across the three studies presented in this thesis were quite congruent, two findings, obtained in Study 3, were not observable in Studies 1 and 2. First, in Study 3, the sense of self predicted *both* positive and negative appraisals toward the transition to university. Furthermore, both positive and negative appraisals significantly mediated the association between sense of self and various consequences. However, in Studies 1 and 2, the sense of self only predicted negative appraisals but did not significantly predict positive appraisals. In Studies 1 and 2, it was thus impossible for positive appraisals to mediate the association between sense of self and coping as well as well-being.

Second, positive and negative appraisals *both* predicted task- and disengagement-oriented coping in Study 3. In contrast, in Study 2, positive appraisals only predicted task-oriented coping, and negative appraisals only predicted disengagement-oriented coping. Conceptual and methodological reasons could explain this pattern of divergent findings.

Conceptually, it could be that the transition to university was a more involving and positive event in comparison to the change manipulation induced in the laboratory. Furthermore, this transition may have been strong enough to activate the beneficial consequences of the sense of self. In fact, because the transition study took place in a real-life situation which participants were experiencing on a recurring basis, participants may have been more aware of what they were feeling and doing in such a situation, and might have had the chance to experience a wider range of emotions and experiences. In this real-life situation, it could be that the sense of self was put more strongly to the test and that adaptation processes were more strongly elicited. The greater intensity of this real life transition may have thus provoked significant relationships between sense of self and positive appraisals, as well as between each of the appraisal and

coping types. In contrast, the experimental situation created in the laboratory studies was very specific and may not have elicited adaptation processes as strongly. Furthermore, the beneficial impact of the sense of self on positive appraisals (which are typically more diffuse and less responsive to threatening situations) may not have been elicited as strongly in this experimental context. Inspection of the means obtained on appraisals and coping across the three studies in fact revealed a tendency toward higher means in the transition than in the laboratory studies. Variances were also slightly greater in the transition study in comparison to the laboratory studies.

Methodologically, the significant associations between each appraisals type and both types of coping observed in the transition study may also be due to shared method variance. In fact, in Study 3, appraisals and coping were assessed in the same questionnaire. In contrast, in the laboratory studies, these constructs were measured in separate questionnaires. Future longitudinal studies should thus measure appraisals and coping processes separately in order to provide a more stringent test of these associations and to tease out the common variance shared by these constructs when they are assessed at the same time point.

Theoretical Implications

An implicit goal of the present thesis was to bring together different theoretical perspectives, namely perspectives on the self (e.g., Markus & Wurf, 1987), coping frameworks (Lazarus, 1991; Lazarus & Folkman, 1984; Skinner et al., 2003), as well as self-determination theory (Deci & Ryan, 1985, 1991, 2000, 2002). These approaches were believed to be complementary in explaining how individuals adapt to change.

Self approaches. Various social cognition approaches view the self as both a stable structure, which taints how individuals enter a situation and react to it, as well as a dynamic

process, capable of changing and integrating novel elements (Banaji & Prentice, 1994; Markus & Kunda, 1986; Markus & Wurf, 1987). This dual view of the self was considered particularly valuable to understand both the stable personality antecedents predicting how individuals appraise a change, as well as how more malleable and flexible aspects of the self change as a result of the adaptation process. The results of the present thesis confirmed the utility of considering the self as both a structure and a process. The empirical evidence presented herein revealed that, in times of change, a structural aspect of the self, notably, the sense of self, predicted specific appraisals toward that change. Appraisals in turn predicted the types of coping strategies used. Finally, the third study investigated the more dynamic processes operating within the self in the context of change. More specifically, it was found that the importance attributed to a new self-component (i.e., being a university student) as well as a contextual motivation (i.e., academic motivation) could change as a result of the adaptation process.

The sense of self thus proved to be an important predictor of the processes by which individuals adapt to change. Because the sense of self taps into cognitive, evaluative, and motivational information about the self, this personality antecedent covers important aspects of the global self-structure. Furthermore, the interrelations between the three sense of self components were relatively high (i.e., mean correlations between these three components were .59, .49, and .44 for Studies 1, 2, and 3, respectively), thus justifying their aggregation. Altogether, these results attest to the validity of this new and understudied structural aspect of the self.

By investigating some more flexible aspects of the self as a consequence of the adaptation process, Study 3 provided evidence for the existence of changes in the self – with respect to two integration indicators, namely self-identification and self-regulation – as a result

of changing circumstances. Although other types of self-elements can become integrated in the self (e.g., values, attitudes), these two indicators were considered important given their theoretical significance and conceptual relevance in the context of the transition to university. Yet, further questions can be raised with respect to the nature of the relationships between these two integration indicators. Although the integration indicators were hypothesized to operate in a parallel manner while also being interrelated, does a causal relationship exist between these indicators? Does change in identification predict change in academic motivation or vice-versa?

To provide preliminary answers to these questions, alternative models were conducted. It should first be noted that these alternative models presented very similar fit indices in comparison to the original model presented herein. In the alternative model in which change in identification predicted change in self-determination, the beta observed between these two constructs was .32 ($p < .05$). Similarly, in a model where change in self-determination predicted change in identification, the beta obtained between these constructs was .31 ($p < .05$). Future studies, specifically designed to test the direction of causality between these two integration indicators, will need to be conducted to further explore these associations.

Coping frameworks. In order to capture the adaptation mechanisms through which the self comes into contact with its changing environment and adapts to it, coping frameworks were used. Changes were conceptualized in this thesis as external events involving a discontinuity between the self and the environment, and which require the mobilization of adaptation resources and the development of new behavioral responses (Higgins et al., 1995; Ruble & Seidman, 1996). Given this conceptualization, the reliance on coping frameworks appeared relevant to explain how individuals deal with change. In fact, coping represents the person's behavioural and cognitive efforts aimed at reducing the discrepancy between the person and the environment

(Costa et al., 1996) and at managing the demands of a troubled person-environment transaction (Folkman, 1984).

Lazarus and Folkman (1984)'s interactional model of stress and coping proposes a person by environment view to explain coping actions, and suggests that personal characteristics must be taken into account to understand why different individuals appraise the same stressor differently. The present results expanded this coping model by investigating the role of a new personality antecedent to the process of coping with change, namely, the sense of self. As this structural part of the self was hypothesized to taint individuals' reactions to a changing situation, results of the studies confirmed the usefulness of considering the sense of self when predicting how individuals appraise a change. More specifically, Studies 1 and 2 confirmed the role of the sense of self in predicting less negative appraisals toward an experimentally-induced change. In Study 3, the sense of self predicted more positive appraisals and less negative appraisals toward an important real life change.

In order to predict the consequences of the coping process, the coping typology recently proposed by Skinner and her colleagues (2003) was used in this thesis. In fact, this framework proposes, on an a priori basis, the existence of two higher-order coping categories that differ in terms of their adaptiveness. This framework was derived from an extensive review of the existing theoretical coping models (e.g., Lazarus & Folkman, 1984; Brandtstadter & Renner, 1990), coping instruments, as well as statistical results (i.e., from both exploratory and confirmatory factor analyses). The adaptive task-oriented coping category involves strategies that are organized, flexible, and constructive, whereas the less adaptive disengagement-oriented coping category involves actions that are rigid, disorganised, and derogatory. Task-oriented coping was hypothesized to be predicted by positive appraisals. This coping category was also

anticipated to yield positive consequences, such as well-being and increases in identification with a new role and in self-determination. In contrast, the less adaptive disengagement-oriented coping category was hypothesized to be predicted by negative appraisals, and to lead to negative consequences. Results obtained in the present thesis thus provided support for this typology.

Skinner and Edge (2002) have also proposed that coping precedes integration in the self by stating that constructive coping generates self-development and that prolonged negotiations with environmental demands characterize the very process of integration (see also Deci & Ryan, 1991; Ryan, 1993). Support was also obtained for this claim, as Study 3 revealed that task-oriented coping positively predicted our two indicators of integration, namely, increases in the importance attributed to a new self-component as well as increases in self-determined motivation.

While the present thesis aimed at investigating the role of the sense of self as an individual-level variable predicting the adaptation process, the importance of environmental and situational factors in this process should not be downplayed. Herein, the less adaptive sequence involving negative appraisals and disengagement-oriented coping was triggered by a lower sense of self. However, according to Skinner and her colleagues (2003), negative appraisals and the feeling that the task is unmanageable are not only attributable to personality dispositions (i.e., structural aspects of the self), but can be due to other factors, such as the enormity of the demands, low personal resources, and insufficient social support (i.e., pressure on the system and exposure to stresses that one cannot currently handle).

Some additional analyses have been conducted on Study 2 data in an attempt to explore this alternative explanation and to test if participants' lack of resources with the experimental task could account for the present results. When controlling for the influence of variables such as

participants' familiarity with computers, their feeling of competence toward the task, and their feeling of discomfort with the experimenter, the pattern of results presented herein was not affected. However, in Study 3, this alternative explanation will need to be further investigated as negative appraisals toward the university transition might have stem from sources other than the sense of self.

For instance, students' suboptimal vocational choice could also account for students' negative appraisals toward the university transition. More precisely, some individuals may choose to go to university although this did not represent the most appropriate goal for them to pursue, and, as they are experiencing the university context, they may come to realise that this context does not suit them well. For these students, the transition to university may be more difficult given their lower person-environment fit with the university setting, or the lack of fit between their vocational interests and their current program of study (e.g., Caplan, 1987; Pervin, 1968). Thus, along with the dispositional factors predicting the process of adapting to change, these more environmental and situational factors should also be investigated to provide a more complete account of the factors eliciting positive and negative appraisals toward change.

Self-determination theory. This thesis represents one of the first known attempts to concurrently investigate changes in self-determined motivation and in a more flexible aspect of the self. This proved important given that SDT considers the self as a fundamental element which enables one to contact his or her environment and work toward its integration (Ryan & Deci, 2003). As mentioned above, coping was hypothesized to predict our two integration indicators (i.e., increases in the importance attributed to a new self-component and in self-determination). Whereas SDT proposes that integration occurs through the satisfaction of basic

psychological needs, this thesis investigated coping as an intrapersonal process predicting integration in the self.

In actuality, *both* coping and need satisfaction could represent processes by which integration occurs. For instance, Skinner and her colleagues (2003; Skinner & Edge, 2002) have proposed that some coping actions are organised around specific needs. According to these authors, feelings of autonomy, competence, and relatedness should lead to specific types of coping actions. For example, when the need for relatedness is met, coping actions such as support seeking should be facilitated. Feelings of competence should facilitate coping strategies such as information seeking and problem solving. Finally, the need for autonomy should lead to coping actions aimed at negotiating as well as accommodating to the situation (Skinner & Edge, 2002). Future research should thus investigate the complementary nature of coping and need satisfaction as processes predicting greater integration in the self. Based on these writings (Skinner & Edge, 2002; Skinner et al., 2003), a model could be tested, according to which the satisfaction of these basic psychological needs would lead to specific coping strategies, which in turn would predict integration. To do so, both field studies, which would involve the assessment of need satisfaction, as well as laboratories studies, that could directly manipulate the level of need satisfaction and test the impact of this manipulation on integration indicators, should be conducted.

Applications

Changes are an inherent part of our everyday life. Based on the conceptualization of change used in the present thesis (Higgins et al., 1995; see also Holmes & Rahe, 1967; Ruble & Seidman, 1996), changes require the deployment of important adaptational resources and can elicit quite intense reactions. This thesis investigated the role of the sense of self as an antecedent

to the processes by which individuals adapt to change. These appraisals and coping processes, in turn, predicted different consequences. Based on the results obtained, specific applied propositions can be made for how to more effectively approach and cope with stress and change.

First, results of the laboratory studies have revealed the importance of the sense of self in predicting negative appraisals toward an experimentally-manipulated change. In Study 3, conducted in the context of a real life change, the sense of self was found to predict both positive and negative appraisals toward this change. Given the important role played by the sense of self in predicting these adaptation processes, future interventions could be implemented in important life contexts (i.e., education, work, leisures, interpersonal relations), in an aim to stabilize individuals' self-evaluations, to provide opportunities for a clearer self-concept to develop, and to change individuals' motivation so that it becomes more self-determined. Based on the bottom-up process proposed in the hierarchical model of motivation, such contextual interventions could add up and contribute to a change at the global level of the self (Vallerand, 1997). Given that these sense of self components are also considerably interrelated, we could also expect that interventions that target one of the three components will have an indirect and beneficial impact on the others.

Furthermore, interventions could target low sense of self individuals and encourage them to develop more adaptive appraisals toward changes. Doing so could compensate for these individuals' tendency to perceive a changing situation more negatively. On the basis of the present findings, the elicitation of positive appraisals and the attenuation of negative appraisals would, in turn, activate more adaptive coping patterns when dealing with change.

Second, with respect to coping processes per se, a variety of techniques have been devised to teach individuals how to use optimal coping strategies (e.g., Heim, 1995; Folkman,

Chesney, McKusick, Ironson, Johnson, & Coates, 1991; Smith, 1999). Generally, these studies have encouraged the development of task-oriented coping strategies in order to more adaptively deal with different types of stressors, while also training against the recurrent use of disengagement-oriented coping strategies. The results obtained in the present thesis concur with those obtained in these past studies, and confirm the need to develop coping interventions that focus on the use of task-oriented coping strategies rather than disengagement-oriented coping strategies.

Overall, while the present results offer suggestions for interventions, future studies will be needed to further determine which type of intervention will be most beneficial when dealing with which specific type of change. In fact, some studies have brought important nuances to the general coping patterns reported in the literature. For instance, a specific type of task-oriented coping strategies, namely, problem-focused coping strategies, have been found to be more effective when coping with stressors that are *controllable*, whereas emotion-focused coping strategies, which represent another type of task-oriented coping, are most effective when confronting *uncontrollable* stressors (e.g., Terry & Hynes, 1998). To design optimal interventions, future investigations are thus needed to identify which adaptation mechanisms are most beneficial in which specific changing context.

Psychometric, Methodological, and Statistical Limitations

Globally, the results of the studies presented in this thesis supported most of our hypotheses. Explanations were also provided to account for unexpected findings. However, various psychometric, methodological, and statistical limitations underlie the studies presented in this thesis.

Psychometric limitations. The studies presented in this thesis all relied on self-reported measures. Given that past studies had supported the validity of each of these measures and because appraisals and coping are conceptualised to be conscious processes (Lazarus & Folkman, 1984), using self-reported measures was considered adequate in the context of this thesis. It should also be noted that, to minimise social desirability biases, participation in our studies was anonymous and confidential, and participants were told that the researchers conducting the studies were interested in their honest responses and opinions. Nevertheless, a variety of alternative methodologies could be used to replicate the present results and to further test their validity. For instance, behavioral measures could be used to assess coping in the laboratory. To do so, individual behaviors displayed when performing the laboratory tasks (e.g., use of the “help” menu of the computer software, concrete actions taken to master the task), as well as interpersonal behaviours emitted during the chatting interactions could be codified to provide complementary measures of coping behaviors. A future transition study could also rely on both self-reported and other-reported measures (i.e., from close friends and parents).

Methodological limitations. From a methodological point of view, Studies 1 and 2 were conducted using a controlled laboratory design. While doing so allowed to have control over potential confounding influences, these studies were susceptible to external validity threats that can characterize experimental designs. To deal with this limitation and to test if the results obtained in the laboratory studies could generalize to a real life setting, Study 3 was conducted in the context of a real life change using a longitudinal correlational design. Thus, given that various methodologies were used in this thesis, we can be quite confident of the strength of the convergent results obtained across these studies. However, the inconsistencies in the results obtained in the laboratory vs. in the correlational study are more difficult to interpret (i.e., the

relationship between sense of self and positive appraisals was not significant in the laboratory studies but was significant in the transition study). As described above, more research is needed to further investigate these inconsistent effects in order to tease out the conceptual and methodological influences that could account for them.

Another limitation inherent to the present thesis pertains to the type of samples used to conduct the studies. University students participated in all three studies, which may have introduced sample biases. Other studies, conducted among other populations, should be conducted to ensure the generalizability of the present findings. The present studies were also conducted in a specific life domain which was related to education and teaching. Although Studies 1 and 2 statistically controlled for participants' experience with the teaching role as well as the value they attributed to teaching, the results of the present studies should be replicated in other life domains and involve other types of changes.

Statistical limitation. It is important to note that a statistical limitation of the present thesis pertains to the a posteriori nature of the modifications made to the structural equation model tested in Study 3. It thus remains necessary to replicate the results of this study to ensure that these results did not originate from particularities of the present dataset.

Theoretical Limitations and Future Research

The present thesis confirmed the role of the sense of self as an antecedent of the adaptation to change process, as well as the mediating role of appraisals and coping in the association between sense of self and various consequences (i.e., psychological well-being, changes in the importance attributed to a new self-component and in a new contextual motivation). Based on these findings and on the theoretical limitations that they imply, different lines of future research pertaining to adaptation to change could be further conducted.

First, results obtained in the two laboratory studies revealed an asymmetry in the effect of the sense of self on positive and on negative appraisals. In these laboratory studies, the sense of self only predicted negative appraisals, and this association was stronger in the experimental (i.e., change) than in the control condition. To follow up on these findings, a more meticulous review of the literature investigating the associations between each component of the sense of self and positive as well as negative appraisals toward specific situations was undertaken.

Results of this search revealed a greater number of studies showing associations between sense of self components and negative appraisals of some kind (i.e., Boggiano, Barrett, Silvern, & Gallo, 1991; Greenier et al., 1999; Kernis et al., 1998, 1989; Smith et al., 1996; Knee et al., 2002; Washull & Kernis, 1996), while fewer studies revealed significant associations between a sense of self component and *both* positive and negative appraisals (i.e., Kernis et al., 1993). Furthermore, none of the studies under review revealed associations between a sense of self component and positive appraisals only. It thus appears that more empirical evidence supports the association between sense of self and negative appraisals. Given these preliminary observations, future studies should rely on more systematic procedures, such as meta-analyses, to rigorously compare the strength of the associations between sense of self and positive vs. negative appraisals, and to determine in which specific context each of these associations emerge.

Second, the present thesis investigated global coping actions used when dealing with a situation (i.e., experimental tasks, transition to university). Using the typology proposed by Skinner and her colleagues (2003), the effect of two main coping categories on various consequences was investigated. Also, coping was assessed at one point in time and required participants to report their general coping patterns. While these procedures allowed to fulfil the

aims of the present thesis, future studies should investigate more fully the effect of specific coping strategies separately and when exactly each coping strategy is most useful at specific points in a stressful situation. The coping literature appears to be moving in a direction of increased sophistication, as daily diary studies are increasingly used to capture the more precise coping patterns and to determine which specific strategies are more adaptive at specific moments during a stressful encounter (e.g., Smith, Leffingwell, & Ptacek, 1999). Future studies could follow this trend and rely on multiple assessments of coping in times of change. This could allow to determine more precisely which specific coping strategies are more useful at certain stages of the change process.

Third, Study 3 investigated whether coping strategies used to deal with a change could serve as an adaptation mechanism predicting two indicators of the integration process, namely increased levels of contextual self-determination as well as greater identification with a new self-component. As mentioned above, few studies have investigated longitudinal changes in self-determination (e.g., Green-Demers, 1997; Williams & Deci, 1996), and the present thesis represents, to our knowledge, the first attempt at investigating concurrent changes in both self-determination and in a flexible component of the self. However, although Study 3 tapped into both motivational and self-related intraindividual variations, it did not assess the entire reorganisation of the self as a result of a change, nor did it assess the extent to which the new self-component conflicted with other self-components that were already in place within the self (see Ryan & Deci, 2003). In fact, Ryan and Deci (2003) propose that “the process of integration – of assimilating one’s identifications into a more coherent sense of self – requires awareness of a person’s multiple identities and a mindful consideration of their relations to other aspects of one’s self” (p. 263). Future studies should definitively develop the instruments and procedures

needed to investigate how, in changing contexts, multiple self-components reorganize within the global self-structure.

Fourth, at an ideological level, although the changes investigated in the context of this thesis elicited stress and some negative appraisals, they also elicited quite strong positive appraisals. Importantly, the changes confronted by our participants in the three studies were, to a certain extent, *chosen* by them. While participants in our laboratory studies did not choose the experimental situation they were randomly assigned to, they nevertheless could stop participating in the study at any time they desired (although none of them did). Participants in the transition study, although some reported high extrinsic motivation toward their university studies, still *chose* to enrol in university as the legal age in Canada to drop out of school is 16 years old.

In the context of such changes, we may question whether the same results would have been obtained if the changes confronting our participants had not been as willingly chosen by them. For instance, in the context of a change such as the start of a war between countries, a change in political regime, or an illegitimate organisational change serving the interests of the shareholders and denying those of the employees, would the same adaptation processes be observable? Would the sense of self predict adaptive coping patterns or would more situational factors predict coping? In such changing circumstances, what would constitute “adaptive” coping patterns? Those aimed at accepting the change or those aimed at contesting them?

While the results of the present thesis must be interpreted in light of the ideological context of our studies, future research is definitively needed to answer these questions and to further explore the adaptation mechanisms involved when coping with other types of changes. Future studies could thus systematically compare the processes involved when confronting changes that vary along different dimensions, such as according to whether they are chosen vs.

not chosen, they are considered legitimate vs. illegitimate, positive vs. negative, or controllable vs. uncontrollable. Correlational field studies could identify contexts that differ on one of these dimensions and could be conducted among samples that vary in the type of change they are undergoing. Invariance analyses could then be conducted to test if the adaptation processes elicited by the changes differ across the different samples, and whether different coping strategies predict different consequences depending on which type of change each sample is experiencing. Laboratory experiments could also systematically manipulate changes based on these dimensions. Doing so would allow to test the moderating impact of the type of change on the adaptation processes elicited. The results obtained in such studies would allow to increase our understanding of how specific types of changes moderate the adaptation process.

Finally, future studies could aim at testing some of the ideas presented in this thesis at the intergroup level, for instance, when investigating how group members cope with intergroup changes and come to identify themselves as members of new social groups (Abrams & Hogg, 2001; Deaux, 1996). Situations such as international migrations, learning a second language, and changing one's organization allegiance could all represent situations likely to require the integration of a new social identity – a specific type of self-component – within one's self. The integration mechanisms through which this integration takes place could refer to coping. These hypotheses could be tested using correlational or quasi-experimental designs.

Conclusion

Using theoretical perspectives on the self, coping processes, and motivation, the present thesis aimed at identifying both antecedents and consequences to the adaptation process. These theoretical perspectives were considered complementary in accounting for the processes involved when adapting to stress and change. The main contributions of the model proposed in this thesis are twofold. First, the thesis confirmed the role played by a structural part of the self, namely, the sense of self, as an antecedent to the process of adaptation to change. More specifically, the sense of self was found to play a significant role in how individuals appraised change. Second, this thesis investigated the role of both appraisals and coping as adaptation processes mediating the associations between the sense of self and various consequences, including psychological well-being. Changes in the importance attributed to a new self-component as well as in a new self-determined contextual motivation were also investigated as consequences of the adaptation process. These two consequences, which involved some more flexible aspects of the self, also provided preliminary support for the integration process proposed by self-determination theory. Although more research is needed to further investigate the validity of the present findings, the present results provide support for the proposed model. These results also provide a basis for future studies investigating the process of coping with change. Investigating the effect of basic psychological needs, the organizational changes that occur in the self, as well as the moderating role of other types of changes could further increase our understanding of the processes through which individuals cope with and integrate change.

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Footnotes

¹ Two other types of mediational analyses were conducted to test, in a more formal manner, for the mediating role of negative appraisals in the sense of self – well-being relationship. First, negative appraisals were entered into a separate step of the multiple regression predicting final well-being after entry of baseline well-being and sense of self. The significance of this step should indicate whether negative appraisals added significant variance in the prediction of final well-being. It was found that entry of negative appraisals in the regression did not account for a significant increment of variance in final well-being (R^2 change = .02, $F(1, 31) = 1.73$, $p = .20$). Second, Sobel's (1982) test was used to test the significance of negative appraisals as a mediator in the sense of self – well-being relationship. Baseline well-being was again controlled for when predicting final well-being. This test was not significant ($z = 1.20$, $p > .05$). Non-significant results obtained through these further mediation analyses could be due to the fact that such analyses are more conservative and require greater statistical power (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Shrout & Bolder, 2002). Results obtained from the Baron and Kenny (1986) procedure were thus considered to provide preliminary support for the mediation hypothesis.

² Analyses of variance were also conducted to test if participants differed depending on their respective experimenter. These analyses revealed no significant multivariate or univariate effect of experimenter on any of the variables used in the study. Moreover, the experimenter by change interaction did not have significant multivariate or univariate effects on any of the variables of the study.

³ No separate CFA was conducted on the sense of self latent variable given that such a CFA has zero degrees of freedom. The validity of the measurement model of this portion of the

SEM model was thus analyzed when incorporated in the full model (B. M. Byrne, personal communication, May 2003).

⁴ Because this alternative model was not nested within the final model, the difference in χ^2 could not be used to directly compare the models.

⁵ Although Studies 1 and 2 tested the moderating role of the change manipulation in the sense of self – appraisals relationships, Study 3 was not as well suited to test this moderating effect. In fact, participants in this study were all undergoing the transition to university, an important life change. Furthermore, pilot testing attested that, while the transition to university is perceived to take place primarily during students' first academic year, changes and new challenges are experienced by university students throughout their entire academic training (see also Koestner & Losier, 2002). This fact thus makes it difficult to find an appropriate control group for our first year university students and to adequately test the moderating role of change.

APPENDIX A

Overview of the Design and Instruments for Studies 1 and 2

	<i>Questionnaire package: Distributed one month before the start of the experiment</i>	<i>First questionnaire distributed in the lab: Before the start of the first phase</i>	<i>Second questionnaire distributed in the lab: Before the start of the second phase</i>	<i>Third questionnaire distributed in the lab: After the end of the second phase</i>
Measures:	<i>Sense of self (Study 1): -Self-concept clarity (Campbell et al., 1996) -Self-esteem stability (Rosenberg, 1965) -Global self- determination (Pelletier et al., 2004)</i>	<i>Sense of Self (Study 2)</i>		
			<i>Appraisals toward phase 2 task: Adapted from Campbell et al., 1991; Cheng, 2001; Folkman & Lazarus, 1985; Long & Schultz, 1995; Ptacek et al., 1994)</i>	
				<i>Coping with phase 2 task (Study 2): Adaptation of the COPE (Carver et al., 1989)</i>
		<i>Psychological well- being: -Vitality (Ryan & Frederick, 1997) -PANAS (Watson et al., 1988)</i>		<i>Psychological well- being: -Vitality (Ryan & Frederick, 1997) -PANAS (Watson et al., 1988)</i>
Manipulation checks:		<i>Study 2 only: -General values toward the teaching role -Past experience as a teacher -Level of familiarity with computers, chatting, internet, and emails</i>		<i>-Perceptions of change between phases 1 and 2 -Productivity and harmony with the student (experimental group only) -Competence toward phase 2 task (Study 2) -Comfort with the experimenter (Study 2)</i>

APPENDIX B

Instructional Script Used in Study 1

Appendix B.1: Experimental Condition

Bonjour _____,

Bon, alors, avant de commencer l'étude, voici le formulaire de consentement. Si tu as des questions concernant ce formulaire, surtout n'hésite pas à me les poser. Si tu n'as pas de question et que tu désires participer à l'étude, tu peux ensuite passer directement à ce questionnaire. Il prend environ 3 minutes à compléter. Je serai assise dans la salle d'attente si tu as des questions. Laisse-moi savoir quand tu auras terminé de compléter ce premier questionnaire; on pourra alors commencer l'étude. Tu n'as qu'à entrouvrir la porte pour me faire signe que tu as terminé le questionnaire 1. Aussi, pour toute la durée de l'étude, je te demanderais de conserver tes questionnaires avec toi et de me les remettre seulement à la toute fin de l'étude. N'oublie pas d'entrouvrir la porte lorsque tu auras terminé ce premier questionnaire (Sortir)

(Lorsque le participant a terminé le questionnaire 1) (S'asseoir pour parler au participant)

Alors aujourd'hui, l'étude en laboratoire à laquelle on t'invite à participer porte sur le mentorat. Comme tu le sais, en septembre prochain, l'université d'Ottawa va vivre la double-cohorte; il va donc y avoir près de deux fois plus d'étudiants de première année qui vont entrer à l'université en septembre 2003. Dans ce contexte, l'université d'Ottawa compte mettre en place plus de programmes de mentorat à partir de septembre prochain. Ces programmes vont impliquer la participation d'étudiants plus âgés et plus avancés dans leur programme, comme toi, et qui agiront comme mentor envers un étudiant de première année qui vient juste d'arriver à l'université en leur donnant des informations, des conseils, en les aidant dans leurs cours, etc.

Dans ce contexte, nous nous intéressons aux stratégies utilisées par les étudiants plus avancés lorsqu'on leur demande d'être mentor et d'enseigner quelque chose à des étudiants plus

jeunes. On cherche donc à savoir ce que les étudiants ressentent, font et pensent lorsqu'ils sont dans un rôle de mentor.

Pour permettre cela, cette étude-ci a deux phases. Une première phase, dans laquelle tu vas effectuer une nouvelle tâche à l'ordinateur, et une deuxième phase, dans laquelle on te demandera d'être un mentor et de montrer à l'étudiant plus jeune comment effectuer la tâche par lui/elle-même. La tâche qu'on te demande d'enseigner est une tâche effectuée à l'aide d'un logiciel qui s'appelle Visio. Est-ce que tu connais le logiciel Visio ? Puis, après, dans la phase 2 de l'étude, tu vas enseigner à un étudiant plus jeune comment effectuer la tâche par lui/elle-même. Ton apprenti est un(e) gars/fille de 18 ans. (choisir le même sexe que le participant)

C'est par des interactions virtuelles que tu vas interagir avec cet étudiant, plus spécifiquement, pendant une session de "chat". Il y a plusieurs raisons pour lesquelles les interactions vont se faire par "chat". Premièrement, l'université d'Ottawa valorise beaucoup les interactions virtuelles. On peut déjà observer ça beaucoup dans les services offerts par l'université et dans sa façon de fonctionner (par ex., quand on pense aux messages envoyés par les professeurs à leur classe, l'inscription faite via le web...). Les programmes de mentorat vont donc aussi être basés sur les interactions virtuelles et l'université veut donc encourager ce type d'interactions. Deuxièmement, en psychologie, on sait que des facteurs comme l'apparence physique, la voix, etc, ont un impact important dans les interactions qu'on a avec les autres. Alors, pour contrôler ces facteurs, on a décidé d'utiliser les interactions virtuelles.

Donc, c'est vraiment important que ton apprenti réussisse à faire la tâche. En fait, après la phase 2, la tâche d'enseignement, nous allons vérifier si ton apprenti maîtrise bien la tâche. Aussi, après que la phase 2 soit terminée, on va demander à ton étudiant(e) plus jeune de nous donner son feedback sur toi en tant que mentor. Donc, il est très important que tu réussisses à

effectuer la tâche durant la phase 1 et que tu l'enseignes ensuite à ton étudiant(e) pendant la deuxième phase de l'étude.

Maintenant, on va commencer la phase 1. Dans cette première phase, tu vas utiliser l'ordinateur pour maîtriser la tâche. La tâche consiste à créer cette figure à l'aide du logiciel Visio. (Lui montrer la figure). Je reviendrai dans 10 minutes. Puis, dans la phase 2, je te demanderai d'enseigner à l'étudiant plus jeune de construire la même figure. (Sortir pour laisser l'étudiant seul pour effectuer la tâche. Revenir après 10 minutes)

PHASE 2 :

Bon, alors maintenant, nous allons débiter la 2^e phase de l'étude. On va d'abord sauvegarder la figure que tu as fait durant la phase 1 (Donner le numéro étudiant comme nom au document). On doit attendre ton étudiant plus jeune; il/elle est supposé arriver dans environ 5 minutes. On va l'installer dans le laboratoire de cognition; il y a plus de place et d'ordinateurs de l'autre côté. Alors, en attendant, je te demanderais de compléter ce 2^e questionnaire et de me prévenir lorsque tu auras terminé. Je serais dans la salle d'attente et il se peut que je doive sortir pour aller installer ton étudiant dans le laboratoire de cognition, mais sinon, je serai autour. (Sortir).

(Lorsque l'étudiant vient me voir dans la salle d'attente)

Ok. Ton étudiant est maintenant installé dans le laboratoire de cognition. Donc, pour la phase 2, il/elle et toi allez communiquer par "chat". Je te rappelle que ton rôle est de lui enseigner comment faire la tâche en lui communiquant tes instructions durant une session de chatting. Ton étudiant va aussi avoir le logiciel Visio d'installé sur son ordinateur et il/elle a cette image avec lui/elle aussi. Il/elle est donc prêt à commencer.

Bon, on va maintenant commencer la tâche de la phase 2. Voici le logiciel de “chat” que tu vas utiliser. Et voici l’adresse électronique que tu vas utiliser pour cette étude. Ton étudiant a l’adresse suivante : _____. N’oublie pas que tu as un rôle important en tant que mentor et que nous allons vérifier à quel point ton étudiant réussi à bien effectuer la tâche par lui/elle-même.

(Après 10 minutes). Voilà, la deuxième phase est terminée. Avant de partir, je te demanderais simplement de compléter ce dernier questionnaire. Pour ce questionnaire, garde en tête qu’il est important que tu répondes en fonction de comment tu te sens présentement. N’hésites pas si tu as des questions; je serai dans la salle d’attente.

(À la toute fin). Je te remercie énormément pour ta collaboration. Tu recevras plus d’information sur cette étude pendant le cours PSY 2510. Merci beaucoup encore.

jeunes. On cherche donc à savoir ce que les étudiants ressentent, font et pensent lorsqu'ils sont dans un rôle de mentor.

Pour permettre cela, cette étude-ci a deux phases. Une première phase, dans laquelle tu vas effectuer une nouvelle tâche à l'ordinateur, et une deuxième phase, dans laquelle on te demandera d'être un mentor et de montrer à l'étudiant plus jeune comment effectuer la tâche par lui/elle-même. La tâche qu'on te demande d'enseigner est une tâche effectuée à l'aide d'un logiciel qui s'appelle Visio. Est-ce que tu connais le logiciel Visio ? Puis, après, dans la phase 2 de l'étude, tu vas enseigner à un étudiant plus jeune comment effectuer la tâche par lui/elle-même. Ton apprenti est un(e) gars/fille de 18 ans. (choisir le même sexe que le participant)

C'est par des interactions virtuelles que tu vas interagir avec cet étudiant, plus spécifiquement, pendant une session de "chat". Il y a plusieurs raisons pour lesquelles les interactions vont se faire par "chat". Premièrement, l'université d'Ottawa valorise beaucoup les interactions virtuelles. On peut déjà observer ça beaucoup dans les services offerts par l'université et dans sa façon de fonctionner (par ex., quand on pense aux messages envoyés par les professeurs à leur classe, l'inscription faite via le web...). Les programmes de mentorat vont donc aussi être basés sur les interactions virtuelles et l'université veut donc encourager ce type d'interactions. Deuxièmement, en psychologie, on sait que des facteurs comme l'apparence physique, la voix, etc, ont un impact important dans les interactions qu'on a avec les autres. Alors, pour contrôler ces facteurs, on a décidé d'utiliser les interactions virtuelles.

Donc, c'est vraiment important que ton apprenti réussisse à faire la tâche. En fait, après la phase 2, la tâche d'enseignement, nous allons vérifier si ton apprenti maîtrise bien la tâche. Aussi, après que la phase 2 soit terminée, on va demander à ton étudiant(e) plus jeune de nous donner son feedback sur toi en tant que mentor. Donc, il est très important que tu réussisses à

effectuer la tâche durant la phase 1 et que tu l'enseignes ensuite à ton étudiant(e) pendant la deuxième phase de l'étude.

Maintenant, on va commencer la phase 1. Dans cette première phase, tu vas utiliser l'ordinateur pour maîtriser la tâche. La tâche consiste à créer cette figure à l'aide du logiciel Visio. (Lui montrer la figure). Je reviendrai dans 10 minutes. Puis, dans la phase 2, je te demanderai d'enseigner à l'étudiant plus jeune de construire la même figure. (Sortir pour laisser l'étudiant seul pour effectuer la tâche. Revenir après 10 minutes)

PHASE 2 :

Bon, alors maintenant, nous allons débiter la 2^e phase de l'étude. On va d'abord sauvegarder la figure que tu as fait durant la phase 1 (Donner le numéro étudiant comme nom au document.1). Alors l'étudiant avec qui tu étais supposé être jumelé vient de me laisser un message et il/elle me dit qu'il/elle ne pourra pas venir aujourd'hui. Bon, alors, ce qu'on va faire pour pouvoir compléter l'étude quand même, c'est que dans cette phase-ci, la phase 2, tu vas continuer à effectuer la tâche que tu faisais dans la phase 1. Mais avant cela, je te demanderais de compléter ce deuxième questionnaire. Quand je te pose des questions sur la phase 2, je veux dire dans cette phase-ci, celle qui s'en vient. Je serai dans la salle d'attente si tu as des questions. Puis, lorsque tu auras terminé le questionnaire, vient me le dire et puis on ensuite, tu pourras passer à la phase 2 et tu continueras la tâche afin de la compléter.

(Sortir. Lorsque l'étudiant vient me revoir). Ok, tu as terminé le questionnaire 2? Bon, alors on va passer à la phase 2 où tu vas continuer la tâche à l'ordinateur afin de la compléter.

Je vais revenir dans quelques minutes.

(Après 10 minutes). Voilà, la deuxième phase est terminée. Avant de partir, je te demanderais simplement de compléter ce dernier questionnaire. Pour ce questionnaire, garde en

tête qu'il est important que tu répondes en fonction de comment tu te sens présentement.

N'hésites pas si tu as des questions; je serai dans la salle d'attente.

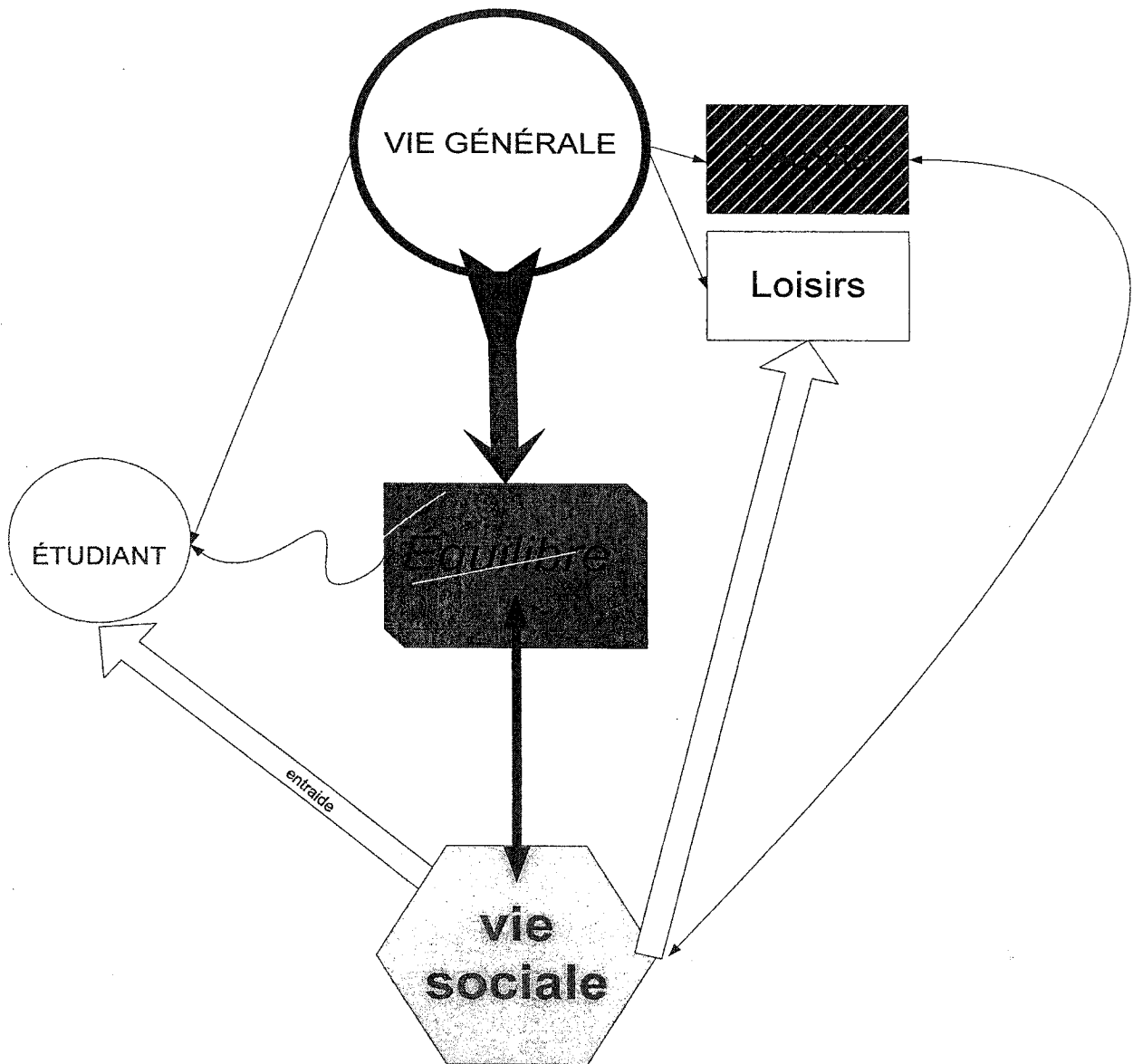
(Lorsque l'étudiant est parti : sauvegarder la figure produite à la phase 2 par le numéro d'étudiant.2).

Je te remercie énormément pour ta collaboration. Tu recevras plus d'information sur cette étude pendant le cours PSY 2510. Merci beaucoup encore.

APPENDIX C

Computer Task with Visio Used in Studies 1 and 2

Les domaines de la vie



APPENDIX D

Questionnaires Used in Study 1

Appendix D.1: Questionnaire Assessing the Sense of Self

Student number: _____

Sex: _____

Mother tongue: _____

Country of birth: _____

Ethnicity: _____

Ethnicity of your mother: _____ Ethnicity of your father: _____

GENERAL ATTITUDES

Indicate to what extent each of the following statements corresponds generally to the reasons why you do different things.

Not agree at all	Very slightly agree	Slightly agree	Moderately agree	Mostly agree	Strongly agree	Very strongly agree
1	2	3	4	5	6	7

In general, I do things . . .

- | | | | | | | | |
|--|---|---|---|---|---|---|---|
| 1. in order to help myself become the person I aim to be..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. because I like making interesting discoveries..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. because I want to be viewed more positively by certain people..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. because I chose them as means to attain my objectives..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. for the pleasure of acquiring new knowledge..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. because I would beat myself up for not doing them..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. because by doing them I am living in line with my deepest principles. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. although it does not make a difference whether I do them or not..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. for the pleasant sensations I feel while I am doing them..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. in order to show others what I am capable of..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. because I chose them in order to attain what I desire..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. because otherwise I would feel guilty for not doing them..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. even though I do not have a good reason for doing them..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. in order to attain prestige..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. even though I believe they are not worth the trouble..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. because I would feel bad if I do not do them..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17. because by doing them I am fully expressing my deepest values..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. because they reflect what I value most in life..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

SELF-CONCEPT

The following items represent ways in which you can perceive yourself. Using the scale below, indicate the extent to which each item represents how you see yourself.

1	2	3	4	5
Strongly disagree	Disagree	Does not agree nor disagree	Agree	Strongly agree

- | | | | | | |
|---|---|---|---|---|---|
| 1. My beliefs about myself often conflict with one another..... | 1 | 2 | 3 | 4 | 5 |
| 2. On one day I might have one opinion of myself and on another day I might have a different opinion..... | 1 | 2 | 3 | 4 | 5 |
| 3. I spend a lot of time wondering about the type of person I am..... | 1 | 2 | 3 | 4 | 5 |
| 4. Sometimes I feel that I am not really the person that I appear to be..... | 1 | 2 | 3 | 4 | 5 |
| 5. When I think about the kind of person I have been in the past, I'm not sure what I was really like..... | 1 | 2 | 3 | 4 | 5 |
| 6. I seldom experience conflict between the different aspects of my personality..... | 1 | 2 | 3 | 4 | 5 |
| 7. Sometimes I think that I know other people better than I know myself..... | 1 | 2 | 3 | 4 | 5 |
| 8. My beliefs about myself seem to change very frequently..... | 1 | 2 | 3 | 4 | 5 |
| 9. If I were asked to describe my personality, my description might end up being different from one day to another day..... | 1 | 2 | 3 | 4 | 5 |
| 10. Even if I wanted to, I don't think I could tell someone what I'm really like..... | 1 | 2 | 3 | 4 | 5 |
| 11. In general, I have a clear sense of who I am and what I am..... | 1 | 2 | 3 | 4 | 5 |
| 12. It is often hard for me to make up my mind about things because I don't really know what I want..... | 1 | 2 | 3 | 4 | 5 |

SELF-STABILITY

For each of the following questions, select the number that best corresponds to how you see yourself.

1. Does your opinion of yourself tend to change a good deal, or does it always continue to remain the same?

Very slight or no change at all 1	Changes a little 2	Changes moderately 3	Changes very much 4	Extreme amount of change 5
--	--------------------------	----------------------------	---------------------------	-------------------------------------

2. At some moments, I take a positive attitude toward myself, whereas at others, I feel that I am a failure.

Strongly disagree 1	Disagree 2	Does not agree nor disagree 3	Agree 4	Strongly agree 5
---------------------------	---------------	--	------------	------------------------

3. I feel that my self-esteem varies from day to day.

Strongly disagree 1	Disagree 2	Does not agree nor disagree 3	Agree 4	Strongly agree 5
---------------------------	---------------	--	------------	------------------------

4. I feel that nothing, or almost nothing, can change the opinion I hold of myself.

Strongly disagree 1	Disagree 2	Does not agree nor disagree 3	Agree 4	Strongly agree 5
---------------------------	---------------	--	------------	------------------------

5. Some days I have a very good opinion of myself; other days I have a very negative opinion of myself.

Strongly disagree 1	Disagree 2	Does not agree nor disagree 3	Agree 4	Strongly agree 5
---------------------------	---------------	--	------------	------------------------

Appendix D.2: First Questionnaire Distributed in the Laboratory

Student number: _____

ENERGY

Indicate the extent to which the following items correspond to the way you feel **NOW**.

Not agree at all	Agree very slightly	Slightly Agree	Moderately Agree	Agree	Strongly agree	Very strongly agree
1	2	3	4	5	6	7

Now,

- | | | | | | | | |
|--|---|---|---|---|---|---|---|
| 1. ... I feel alive and vital..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. ... I don't feel very energetic..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. ... I feel so alive I just want to burst..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. ... I have energy and spirit..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. ... I look forward to each new moment..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. ... I feel alert and awake..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. ... I feel stimulated..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

YOUR EMOTIONS

*This questionnaire is composed of 20 adjectives that describe certain feelings and emotions. Use the scale below to indicate the extent to which each adjective describes **how you feel NOW**.*

1	2	3	4	5
Very slightly or not at all	A little	Moderately	Quite a bit	Extremely

Now, I feel,

- | | | | | | | | | | | | |
|----------------------|---|---|---|---|---|---------------------|---|---|---|---|---|
| 1. Enthusiastic..... | 1 | 2 | 3 | 4 | 5 | 11. Proud..... | 1 | 2 | 3 | 4 | 5 |
| 2. Upset..... | 1 | 2 | 3 | 4 | 5 | 12. Irritable..... | 1 | 2 | 3 | 4 | 5 |
| 3. Strong..... | 1 | 2 | 3 | 4 | 5 | 13. Determined..... | 1 | 2 | 3 | 4 | 5 |
| 4. Hostile..... | 1 | 2 | 3 | 4 | 5 | 14. Nervous..... | 1 | 2 | 3 | 4 | 5 |
| 5. Distressed..... | 1 | 2 | 3 | 4 | 5 | 15. Active..... | 1 | 2 | 3 | 4 | 5 |
| 6. Interested..... | 1 | 2 | 3 | 4 | 5 | 16. Ashamed..... | 1 | 2 | 3 | 4 | 5 |
| 7. Scared..... | 1 | 2 | 3 | 4 | 5 | 17. Attentive..... | 1 | 2 | 3 | 4 | 5 |
| 8. Excited..... | 1 | 2 | 3 | 4 | 5 | 18. Jittery..... | 1 | 2 | 3 | 4 | 5 |
| 9. Guilty..... | 1 | 2 | 3 | 4 | 5 | 19. Alert..... | 1 | 2 | 3 | 4 | 5 |
| 10. Inspired..... | 1 | 2 | 3 | 4 | 5 | 20. Afraid..... | 1 | 2 | 3 | 4 | 5 |

Appendix D.3: Second Questionnaire Distributed in the Laboratory

The following items correspond to how the phase 2 of this experiment can be perceived. Using the scale below, indicate the extent to which each of the items reflects how you perceive the task you will be asked to perform in phase 2 of this experiment.

1	2	3	4	5
Very slightly or not at all	A little	Moderately	Quite a bit	Extremely

The task of phase 2....

1. is important	1	2	3	4	5	5. is positive	1	2	3	4	5
2. is stressful	1	2	3	4	5	6. is desirable	1	2	3	4	5
3. is challenging	1	2	3	4	5	7. affects my mood (positively or negatively)	1	2	3	4	5
4. is threatening	1	2	3	4	5	8. has an important impact on me	1	2	3	4	5

Use the scale below to indicate the extent to which each adjective describes how you feel when you think about the task of phase 2.

1	2	3	4	5
Very slightly or not at all	A little	Moderately	Quite a bit	Extremely

When I think about the task of phase 2, I feel....

1. Enthusiastic.....	1	2	3	4	5	16. Jittery.....	1	2	3	4	5
2. Upset.....	1	2	3	4	5	17. Alert.....	1	2	3	4	5
3. Strong.....	1	2	3	4	5	18. Afraid.....	1	2	3	4	5
4. Hostile.....	1	2	3	4	5	19. Worried.....	1	2	3	4	5
5. Distressed.....	1	2	3	4	5	20. Hopeful.....	1	2	3	4	5
6. Interested.....	1	2	3	4	5	21. Eager.....	1	2	3	4	5
7. Scared.....	1	2	3	4	5	22. Angry.....	1	2	3	4	5
8. Excited.....	1	2	3	4	5	23. Relieved.....	1	2	3	4	5
9. Disappointed.....	1	2	3	4	5	24. Exhilarated.....	1	2	3	4	5
10. Inspired.....	1	2	3	4	5	25. Fearful.....	1	2	3	4	5
11. Proud.....	1	2	3	4	5	26. Pleased.....	1	2	3	4	5
12. Irritable.....	1	2	3	4	5	27. Confident.....	1	2	3	4	5
13. Determined.....	1	2	3	4	5	28. Ambitious.....	1	2	3	4	5
14. Nervous.....	1	2	3	4	5	29. Anxious.....	1	2	3	4	5
15. Active.....	1	2	3	4	5	30. Attentive.....	1	2	3	4	5

Appendix D.4: Third Questionnaire Distributed in the Laboratory

ENERGY

Indicate the extent to which the following items correspond to the way you feel **NOW**.

Not agree at all	Agree very slightly	Slightly Agree	Moderately Agree	Agree	Strongly agree	Very strongly agree
1	2	3	4	5	6	7

Now,

- | | | | | | | | |
|--|---|---|---|---|---|---|---|
| 1. ... I feel alive and vital..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. ... I don't feel very energetic..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. ... I feel so alive I just want to burst..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. ... I have energy and spirit..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. ... I look forward to each new moment..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. ... I feel alert and awake..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. ... I feel stimulated..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

YOUR EMOTIONS

*This questionnaire is composed of 20 adjectives that describe certain feelings and emotions. Use the scale below to indicate the extent to which each adjective describes **how you feel NOW**.*

1	2	3	4	5
Very slightly or not at all	A little	Moderately	Quite a bit	Extremely

Now, I feel,

- | | | | | | | | | | | | |
|----------------------|---|---|---|---|---|---------------------|---|---|---|---|---|
| 1. Enthusiastic..... | 1 | 2 | 3 | 4 | 5 | 11. Proud..... | 1 | 2 | 3 | 4 | 5 |
| 2. Upset..... | 1 | 2 | 3 | 4 | 5 | 12. Irritable..... | 1 | 2 | 3 | 4 | 5 |
| 3. Strong..... | 1 | 2 | 3 | 4 | 5 | 13. Determined..... | 1 | 2 | 3 | 4 | 5 |
| 4. Hostile..... | 1 | 2 | 3 | 4 | 5 | 14. Nervous..... | 1 | 2 | 3 | 4 | 5 |
| 5. Distressed..... | 1 | 2 | 3 | 4 | 5 | 15. Active..... | 1 | 2 | 3 | 4 | 5 |
| 6. Interested..... | 1 | 2 | 3 | 4 | 5 | 16. Ashamed..... | 1 | 2 | 3 | 4 | 5 |
| 7. Scared..... | 1 | 2 | 3 | 4 | 5 | 17. Attentive..... | 1 | 2 | 3 | 4 | 5 |
| 8. Excited..... | 1 | 2 | 3 | 4 | 5 | 18. Jittery..... | 1 | 2 | 3 | 4 | 5 |
| 9. Guilty..... | 1 | 2 | 3 | 4 | 5 | 19. Alert..... | 1 | 2 | 3 | 4 | 5 |
| 10. Inspired..... | 1 | 2 | 3 | 4 | 5 | 20. Afraid..... | 1 | 2 | 3 | 4 | 5 |

1. To what extent did you feel that the task in phase 2 was different from the task in phase 1?

Not different at all _____ Extremely different

2. To what extent did you feel a change between phase 1 and phase 2?

Not change at all _____ Extreme change

3. To what extent did you feel you had to change and adapt your behaviors from phase 1 to phase 2?

Not change at all _____ Extreme change

4. How would you describe your relationship with the younger student?

Not harmonious at all _____ Extremely harmonious

Not productive at all _____ Extremely productive

5. What do you think this study was about?

6. Your comments on the study:

Thank for your very much appreciated collaboration

APPENDIX E

Instructional Script Used in Study 2

Appendix E.1: Experimental Condition

Bonjour _____,

Bon, alors, avant de commencer l'étude, voici le formulaire de consentement. Si tu as des questions concernant ce formulaire, surtout n'hésite pas à me les poser. Si tu n'as pas de question et que tu désires participer à l'étude, tu peux ensuite passer directement à ce questionnaire. Il prend environ 10 minutes à compléter. Je serai assise dans la salle d'attente si tu as des questions. Laisse-moi savoir quand tu auras terminé de compléter ce premier questionnaire; on pourra alors commencer l'étude. Tu n'as qu'à entrouvrir la porte pour me faire signe que tu as terminé le questionnaire 1. Aussi, pour toute la durée de l'étude, je te demanderais de conserver tes questionnaires avec toi et de me les remettre seulement à la toute fin de l'étude. N'oublie pas d'entrouvrir la porte lorsque tu auras terminé ce premier questionnaire (Sortir)

(Lorsque le participant a terminé le questionnaire 1) (S'asseoir pour parler au participant)

Alors aujourd'hui, l'étude en laboratoire à laquelle on t'invite à participer porte sur l'apprentissage d'une tâche à l'ordinateur. La tâche qu'on te demande de compléter est effectuée à l'aide d'un logiciel qui s'appelle Visio. Est-ce que tu connais le logiciel Visio? En fait, dans cette étude, nous voulons valider cette tâche d'apprentissage. C'est à dire que nous voulons vérifier si la tâche à l'ordinateur est une bonne tâche d'apprentissage à utiliser lorsqu'on étudie les processus cognitifs impliqués quand les gens apprennent un nouveau logiciel. C'est donc pour cela que nous te demandons d'effectuer la tâche à l'ordinateur le plus rapidement et le plus précisément possible. Garde en tête qu'il est donc important que tu reproduises cette figure-ci complètement et précisément. (Lui montrer la figure). Je te laisse 10 minutes pour effectuer cette tâche. Aussi, il faut que je te dise que tu peux utiliser toutes les fonctions de Visio pour faire la figure. Tu peux donc fouiller partout dans le logiciel Visio pour faire la figure. Dans cette étude,

je ne donne pas de directives sur comment utiliser Visio; c'est à toi de trouver comment fonctionne le logiciel. Mais garde en tête qu'il y a plusieurs choses que tu connais déjà de d'autres logiciels qui s'appliquent à ce logiciel-ci. Je vais maintenant régler le cadran à 10 minutes et je reviendrai après ce temps. (partir le chronomètre)

PHASE 2 : (**L'apprenti-e doit être du même sexe que le/la participant-e** : Choisir le sexe approprié dès le début des instructions)

Bon, alors maintenant, nous allons débiter la 2^e phase de l'étude. On va d'abord sauvegarder la figure que tu as fait durant cette phase-ci de l'étude (Donner le code personnel comme nom au document. Sauvegarder dans l'ordinateur IBM, sur le desktop, fichier 'amiot et al').

(S'asseoir pour parler au participant) Puisque l'étude porte sur l'apprentissage d'une nouvelle tâche, tu vas maintenant être invité à enseigner, à un-e autre étudiant-e, comment effectuer la tâche que tu faisais durant la phase 1 de l'étude. C'est par des interactions virtuelles que tu vas interagir avec cet-te étudiant-e et que tu vas lui enseigner comment effectuer la tâche avec Visio. Plus spécifiquement, tu interagiras avec elle/lui par "chat". Utilises-tu le "chat" parfois? Il y a plusieurs raisons pour lesquelles les interactions vont se faire par "chat".

Premièrement, les interactions virtuelles sont très valorisées en général, et on les utilise de plus en plus lors de situations d'apprentissage. Même l'université d'Ottawa valorise beaucoup les interactions virtuelles. On peut déjà observer ça beaucoup dans les services offerts par l'université et dans sa façon de fonctionner (par ex. quand on pense aux messages envoyés par les professeurs à leur classe, l'inscription faite via le web...). Donc, dans les situations d'enseignement, les échanges virtuels sont de plus en plus présents. Deuxièmement, les études en psychologie sociale ont démontré que des facteurs comme par exemple, l'apparence physique, la

voix, ont un impact important dans les interactions qu'on a avec les autres. Alors, pour contrôler ces facteurs, on a décidé d'utiliser les interactions virtuelles.

Aussi, c'est vraiment important que l'autre étudiant, qui sera en fait ton apprenti, réussisse à faire la tâche si on veut vraiment comprendre les processus d'apprentissage. En fait, après la tâche d'enseignement de la phase 2, nous allons vérifier si ton apprenti maîtrise bien la tâche. Aussi, après que la phase 2 soit terminée, on va demander à ton apprenti de nous donner son feedback sur toi en tant qu'enseignant-e. Donc, il est très important que tu réussisses à bien enseigner à ton apprenti pendant la deuxième phase de l'étude.

On va attendre ton apprenti avant de continuer; il/elle est supposé arriver dans quelques minutes. On va l'installer dans le laboratoire de cognition; il y a plus de place et d'ordinateurs de l'autre côté. Les ordinateurs seront donc branchés via l'internet, pour que vous puissiez chatter ensemble. En attendant, je te demanderais de compléter ce 2^e questionnaire et de me prévenir lorsque tu auras terminé. Tu n'as qu'à entrouvrir la porte pour me faire signe que tu as terminé ce deuxième questionnaire. Je serai dans la salle d'attente. Il se peut que je doive sortir pour aller installer ton apprenti dans le laboratoire de cognition, mais sinon, je serai autour. (Sortir).

(Lorsque l'étudiant vient me voir dans la salle d'attente)

(S'asseoir pour parler au participant) Ok. Ton apprenti est maintenant installé dans le laboratoire de cognition. Donc, pour la phase 2, il/elle et toi allez communiquer par "chat". Comme je te le disais, ton rôle est de lui enseigner comment faire la tâche en lui communiquant tes instructions durant une session de chatting. Tu as 10 minutes pour enseigner la tâche à ton étudiant-e. Ton étudiant-e va aussi avoir le logiciel Visio d'installé sur son ordinateur et il/elle a cette image avec lui/elle aussi. Il/elle est donc prêt à commencer. Ton apprenti s'appelle (donner le nom de même sexe que celui du participant; interchanger aléatoirement les noms suivants :

David/Mathieu/Éric/Mélanie/Nathalie/Annick). Il/elle parle français, donc les interactions que tu auras avec lui/elle pourront être en français. Aussi, puisqu'il n'y a pas beaucoup de temps disponible pour enseigner la tâche, voici des phrases que tu peux utiliser pour démarrer tes interactions avec ton étudiant-e. Ce sera donc toi qui va initier les interactions avec ton étudiant. Cette feuille-ci (lui donner) te donne donc des exemples de choses que tu peux dire pour commencer rapidement à interagir avec ton étudiant. J'ai demandé à ton étudiant-e d'utiliser des mots et des phrases complètes et de ne pas utiliser d'abréviations. Je te demanderais de faire la même chose, juste pour être certain que vous vous compreniez tous(tes) les deux. Pendant que tu vas interagir avec ton étudiant, je vais me promener entre les deux laboratoires. Mais je serai autour si tu as des problèmes techniques ou quoi que ce soit.

Bon, on va maintenant commencer la tâche de la phase 2. Voici le logiciel de "chat" que tu vas utiliser. Et voici l'adresse électronique que tu vas utiliser pour cette étude. Ton étudiant a l'adresse suivante : _____. Tu peux maintenant commencer à interagir avec lui/elle. N'oublie pas que tu as un rôle important en tant qu'enseignant. Nous allons vérifier à quel point ton apprenti réussi à bien effectuer la tâche par lui/elle-même et, comme je te le disais, nous allons demander à ton apprenti de t'évaluer en tant qu'enseignant. (Ne pas utiliser le cadran pour cette phase. Partir le chronomètre seulement lorsque les interactions "chat" **commencent**. Se fier au chronomètre pour calculer 10 minutes)

(Après 10 minutes) (Avoir sauvegardé les interactions sur l'ordinateur Dell sur le Desktop, fichier "interactions étude changement en lab – fall 2003"). Voilà, la deuxième phase est terminée. Avant de partir, je te demanderais simplement de compléter ce dernier questionnaire. Pour ce questionnaire, garde en tête qu'il est important que tu répondes en

fonction de comment tu te sens présentement. N'hésites pas si tu as des questions; je serai dans la salle d'attente.

(À la toute fin). Je te remercie énormément pour ta collaboration. C'est Catherine Amiot qui va venir te donner les derniers détails de l'étude, te donner l'argent et aussi récupérer tes questionnaires. Merci beaucoup encore. (faire le débriefing)

Appendix E.2: Control Condition

Bonjour _____,

Bon, alors, avant de commencer l'étude, voici le formulaire de consentement. Si tu as des questions concernant ce formulaire, surtout n'hésite pas à me les poser. Si tu n'as pas de question et que tu désires participer à l'étude, tu peux ensuite passer directement à ce questionnaire. Il prend environ 10 minutes à compléter. Je serai assise dans la salle d'attente si tu as des questions. Laisse-moi savoir quand tu auras terminé de compléter ce premier questionnaire; on pourra alors commencer l'étude. Tu n'as qu'à entrouvrir la porte pour me faire signe que tu as terminé le questionnaire 1. Aussi, pour toute la durée de l'étude, je te demanderais de conserver tes questionnaires avec toi et de me les remettre seulement à la toute fin de l'étude. N'oublie pas d'entrouvrir la porte lorsque tu auras terminé ce premier questionnaire (Sortir)

(Lorsque le participant a terminé le questionnaire 1) (S'asseoir pour parler au participant)

Alors aujourd'hui, l'étude en laboratoire à laquelle on t'invite à participer porte sur l'apprentissage d'une tâche à l'ordinateur. La tâche qu'on te demande de compléter est effectuée à l'aide d'un logiciel qui s'appelle Visio. Est-ce que tu connais le logiciel Visio? En fait, dans cette étude, nous voulons valider cette tâche d'apprentissage. C'est à dire que nous voulons vérifier si la tâche à l'ordinateur est une bonne tâche d'apprentissage à utiliser lorsqu'on étudie les processus cognitifs impliqués quand les gens apprennent un nouveau logiciel. C'est donc pour cela que nous te demandons d'effectuer la tâche à l'ordinateur le plus rapidement et le plus précisément possible. Garde en tête qu'il est donc important que tu reproduises cette figure-ci complètement et précisément. (Lui montrer la figure). Je te laisse 10 minutes pour effectuer cette tâche. Aussi, il faut que je te dise que tu peux utiliser toutes les fonctions de Visio pour faire la

figure. Tu peux donc fouiller partout dans le logiciel Visio pour faire la figure. Dans cette étude, je ne donne pas de directives sur comment utiliser Visio; c'est à toi de trouver comment fonctionne le logiciel. Mais garde en tête qu'il y a plusieurs choses que tu connais déjà de d'autres logiciels qui s'appliquent à ce logiciel-ci. Je vais maintenant régler le cadran à 10 minutes et je reviendrai après ce temps. (partir le chronomètre)

PHASE 2 :

Bon, alors maintenant, nous allons débiter la 2^e phase de l'étude, qui est en fait identique à la phase 1 que tu viens juste de terminer. On va d'abord sauvegarder la figure que tu as fait durant la phase 1 (Donner le code personnel comme nom au document, suivi de tiret 1. Sauvegarder dans l'ordinateur IBM, sur le desktop, fichier 'amiot et al').

(S'asseoir pour parler au participant) Alors dans la phase 2 de l'étude, je vais te demander de continuer à effectuer la tâche que tu faisais dans la phase 1. Mais avant cela, je te demanderais de compléter ce deuxième questionnaire. Quand je te pose des questions sur la phase 2, je veux dire dans cette phase-ci, celle qui s'en vient. Je serai dans la salle d'attente si tu as des questions. Puis, lorsque tu auras terminé le questionnaire, tu peux entrouvrir la porte et je viendrai te voir. Tu pourras ensuite passer à la phase 2 et continuer la tâche.

(Sortir. Lorsque l'étudiant vient me revoir). Ok, tu as terminé le questionnaire 2? Bon, alors on va passer à la phase 2 où tu vas continuer la tâche à l'ordinateur afin de la compléter. Je vais revenir dans 10 minutes. Je vais maintenant régler le cadran à 10 minutes et je reviendrai après ce temps.

(Après 10 minutes). Voilà, la deuxième phase est terminée. Avant de partir, je te demanderais simplement de compléter ce dernier questionnaire. Pour ce questionnaire, garde en

tête qu'il est important, c'est que tu répondes en fonction de comment tu te sens présentement.

N'hésites pas si tu as des questions; je serai dans la salle d'attente.

(Lorsque l'étudiant est parti : sauvegarder la figure produite à la phase 2 par le code personnel, suivi de tiret 2).

Je te remercie énormément pour ta collaboration. C'est Catherine Amiot qui va te donner les derniers détails de l'étude, te donner l'argent et aussi récupérer tes questionnaires. Merci beaucoup encore. (faire le débriefing)

APPENDIX F

Interaction Script Used in Study 2

SCRIPT D'INTERACTION LORS DES ÉCHANGES PAR "CHAT"

Informations sur le rôle que doivent jouer les expérimentatrices en tant qu'étudiant apprenti :

Voici ce que l'expérimentatrice donnera comme information aux participants à propos de l'apprenti (avant que démarrent les échanges par 'chat') :

-Nom de l'apprenti = Soit David, Mathieu, Éric, Mélanie, Nathalie, Annick.
L'apprenti est du même sexe que le participant et est bilingue.
L'interaction se déroulera donc dans la langue de préférence du participant.

- Avant de commencer à interagir avec son apprenti, le participant aura été prévenu que l'apprenti a avec lui/elle la figure qui doit être reproduite et que le programme Visio est ouvert sur son ordinateur. L'apprenti est donc prêt à commencer la tâche et à recevoir les directives du participant.

Les informations suivantes ne seront pas divulguées directement aux participants, mais il est bon de les garder en tête lorsque les expérimentatrices joueront le rôle de l'apprenti :

-Connaissances informatiques de l'apprenti :

L'apprenti connaît les logiciels de traitement de texte comme word, powerpoint (et les logiciels inclus dans le package Microsoft) mais ne connaît pas les logiciels de dessin comme visio, Corel draw, Adobe Illustrator.

L'apprenti n'est pas un grand utilisateur de "chat"; il/elle n'utilise pas les abréviations utilisées par les habitués du "chat".

-Personnalité de l'apprenti :

L'apprenti est une personne gentille, assez intéressée par la tâche. Cette personne est neutre et concentrée sur la tâche. Elle ne révèle rien de sa vie personnelle ou de sujets autres que ce qui se rapporte à la tâche.

L'apprenti remercie le participant lorsque ses conseils ont porté fruit. Dans l'étude préliminaire, le mot merci est apparu, en moyenne, une fois dans chaque interaction (étendue = 0 à 2 fois, écart-type = 0.30). Ainsi, le mot merci devrait être utilisé au moins à la fin de l'interaction de même que lorsque le participant a donné un conseil particulièrement utile. Ce mot devrait donc revenir entre 1 et 4 fois dans chaque interaction.

L'apprenti fait savoir rapidement au participant si les instructions données par le participant fonctionnent ou non. L'apprenti répond rapidement aux interactions.

L'apprenti n'a pas un écrit impeccable sans être désastreux non plus. Son niveau de compétence en français écrit correspond à celui qu'on retrouve chez les étudiants du baccalauréat.

SCRIPT D'INTERACTION :

En ordre chronologique :

- 1) Réponse aux salutations faites par le participant.
- 2) Par la suite, les questions suivantes peuvent être posées afin d'activer le dialogue et d'engager le participant dans le rôle d'enseignant :
 - Ok; je ne sais pas trop par quoi je devrais commencer...
 - Comment dois-je utiliser les formes? Comment les faire apparaître sur le dessin?
- 3) Des questions plus précises peuvent ensuite être utilisées :
 - Comment est-ce qu'on change la grosseur des formes? (rapetisser/grossir)
 - Est-ce que les formes doivent être placées exactement à la même place que sur le dessin?
 - Comment est-ce qu'on ajoute de la couleur dans les formes?
 - Comment faire pour changer la grosseur des lettres?
 - Comment est-ce que je fais pour changer les formes de position?
 - Comment est-ce qu'on fait pour changer l'épaisseur des lignes (contours)?
 - Où est (telle fonction)?
- 4) À la fin de l'interaction, dire :
 - Oh; il y a l'expérimentatrice qui vient d'arriver; elle me dit qu'on a terminé la session. Merci beaucoup pour ton aide!

*****Ce qui devrait se retrouver aussi dans chacune des interactions*****

Démonstration d'incompétence :

L'apprenti démontre son incompétence avec la tâche une seule fois dans l'interaction, préférablement au début de l'interaction :

Exemples :

- “J’essaie de faire ____ mais je n’y arrive pas”.
- “Je ne suis pas trop bon-ne avec ce logiciel”.
- “Je ne sais pas comment faire ____”.
- “Ca ne marche pas!”

Induction de stress/pression :

Bien que cela n'avait pas été fait dans l'étude préliminaire, il serait bon d'introduire, au début de l'interaction (i.e., entre les points 2 et 3), du stress et de la pression. Pour ce faire, l'apprenti devrait remémorer au participant ce que l'expérimentatrice leur aura dit :

-“Je crois qu'il va falloir se dépêcher; l'expérimentatrice vient de me dire que je dois être capable de faire la figure avec les instructions que tu me donnes.”

En ce qui concerne la performance de l'apprenti :

Dans l'étude préliminaire, entre 1 et 6 éléments (moyenne = 4, écart-type = 0.95) ont été réussis par l'apprenti, dépendamment de la nature des interactions. Ces éléments peuvent inclure les formes (cercle, rectangle, flèches), les actions (bouger, changer de position ou de grosseur, incorporer de la couleur) et l'écriture (le titre, écrire dans les formes).

Pour cette étude-ci, entre 2 et 6 éléments devraient être réussis par l'apprenti, afin d'uniformiser les réponses de l'apprenti mais tout en permettant une marge de manœuvre dans la performance de l'apprenti. En effet, la performance de l'apprenti devrait dépendre directement des habiletés d'enseignement du participant.

APPENDIX G

Tips to Initiate Interactions Used in Study 2

Trucs pour initier la tâche d'enseignement

Puisque tu es en charge de l'apprentissage d'une tâche à ton étudiant-e et que cet apprentissage doit débiter rapidement, voici des phrases que tu peux utiliser afin de démarrer tes interactions avec ton étudiant-e.

1. Bonjour! Je vais tenter de t'expliquer comment utiliser le logiciel Visio. Ca va?
2. Je voulais savoir si tu as déjà travaillé avec le logiciel Visio?
3. Bonjour! Alors commençons la tâche ensemble. On va commencer par _____.
4. Bonjour! Comment vas-tu? Je serai ton mentor pour t'expliquer le programme Visio.

APPENDIX H

Questionnaires Used in Study 2

Appendix H.1: First Questionnaire Distributed in the Laboratory

Renseignements démographiques :

Sexe: FEMME ____ HOMME ____

Age: ____

Langue maternelle: ____

Pays d'origine: ____ Origine ethnique: ____

Origine ethnique de ta mère: ____ Origine ethnique de ton père: ____

Programme d'études à l'Université : ____

En quelle année universitaire es-tu présentement? 1^{ère}: ____ 2^{ème}: ____ 3^{ème}: ____ 4^{ème}: ____

Combien de cours prends-tu cette session-ci? ____

Étudies-tu à TEMPS PLEIN : ____ ou à TEMPS PARTIEL : ____

Ta moyenne à l'Université jusqu'à présent : ____

*****Instructions pour inscrire ton code personnel***** :

- Espaces 1 et 2: Inscris les LETTRES qui représentent les initiales de ta mère.
- Espaces 3 et 4: Inscris les deux CHIFFRES qui représentent ton mois de naissance.
- Espaces 5 et 6: Inscris les deux derniers CHIFFRES de ton numéro de téléphone.

*****Code personnel : ____ *****

TES ÉMOTIONS

*Ce questionnaire est composé de 20 adjectifs qui décrivent des sentiments et des émotions qui peuvent être ressentis. Utilise l'échelle ci-dessous pour indiquer à quel point chacun des adjectifs suivants décrit comment tu te sens **MAINTENANT**.*

1	2	3	4	5
Pas du tout ou très peu	Peu	Modérément	Beaucoup	Énormément

Maintenant, je me sens...

1. Enthousiaste.....	1	2	3	4	5	11. Fier(e).....	1	2	3	4	5
2. Fâché(e).....	1	2	3	4	5	12. Irrité(e).....	1	2	3	4	5
3. Fort(e).....	1	2	3	4	5	13. Déterminé(e).....	1	2	3	4	5
4. Hostile.....	1	2	3	4	5	14. Nerveux(se).....	1	2	3	4	5
5. Angoissé(e).....	1	2	3	4	5	15. Actif(ve).....	1	2	3	4	5
6. Intéressé(e).....	1	2	3	4	5	16. Honteux(se).....	1	2	3	4	5
7. Effrayé(e).....	1	2	3	4	5	17. Attentif(ve).....	1	2	3	4	5
8. Excité(e).....	1	2	3	4	5	18. Agité(e).....	1	2	3	4	5
9. Coupable.....	1	2	3	4	5	19. Alert(e).....	1	2	3	4	5
10. Inspiré(e).....	1	2	3	4	5	20. Craintif(ve).....	1	2	3	4	5

ENERGIE

Indique à quel point les énoncés correspondent à la façon dont tu te sens MAINTENANT.

Pas du tout en accord	Très peu en accord	Un peu en accord	Moyennement en accord	Assez en accord	Fortement en accord	Très fortement en accord
1	2	3	4	5	6	7

Maintenant...

- | | | | | | | | |
|--|---|---|---|---|---|---|---|
| 1. je me sens vivant-e et plein-e de vie..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. je ne me sens pas très énergique..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. je me sens tellement vivant-e, au point de vouloir éclater..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. j'ai de l'énergie et de la détermination..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. j'ai hâte à chaque nouveau moment..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. je me sens alerte et éveillé-e..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. je me suis senti-e stimulé-e..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

ATTITUDES GÉNÉRALES

Indique dans quelle mesure chacun des énoncés suivants correspond aux raisons pour lesquelles tu fais différentes choses en général.

Ne correspond pas du tout	Correspond très peu	Correspond un peu	Correspond moyennement	Correspond assez	Correspond beaucoup	Correspond exactement
1	2	3	4	5	6	7

En général, je fais des choses ...

- | | | | | | | | |
|--|---|---|---|---|---|---|---|
| 1. pour m'aider à devenir ce que je veux être plus tard..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. parce que j'aime faire des découvertes intéressantes..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. parce que je veux être mieux considéré-e par certaines personnes..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. parce que je les choisies comme moyens pour réaliser mes projets..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. pour le plaisir d'acquérir des connaissances..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. parce que je me sentirais coupable de ne pas les faire..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. parce qu'en les faisant, je me conduis en accord avec mes
principes les plus profonds..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. bien que cela ne fasse pas de différence que je les fasse ou non..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. parce que j'éprouve des sensations plaisantes en les faisant..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. pour montrer aux autres ce que je vauX..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

11. parce que je les choisies pour obtenir ce que je désire.....	1	2	3	4	5	6	7
12. parce que je m'en voudrais de ne pas les faire.....	1	2	3	4	5	6	7
13. même si je n'ai pas de bonnes raisons de les faire.....	1	2	3	4	5	6	7
14. parce que je souhaite obtenir du prestige.....	1	2	3	4	5	6	7
15. même si je ne crois pas que cela en vaille la peine.....	1	2	3	4	5	6	7
16. parce que je me sentirais mal de ne pas les faire.....	1	2	3	4	5	6	7
17. parce qu'en les effectuant, j'exprime pleinement mes valeurs les plus profondes.....	1	2	3	4	5	6	7
18. parce qu'elles reflètent ce que je valorise le plus dans la vie.....	1	2	3	4	5	6	7

CONCEPT DE SOI

Les items suivants représentent des manières dont tu peux te percevoir. En utilisant l'échelle ci-dessous, indique à quel point chaque item représente comment tu te vois.

1	2	3	4	5
Fortement en désaccord	En désaccord	Ni en accord, ni en désaccord	En Accord	Fortement en accord

1. Les croyances que j'ai sur moi-même sont souvent en conflit les unes avec les autres.....	1	2	3	4	5
2. Une journée je peux avoir une opinion de moi-même et l'autre journée je peux avoir une opinion différente.....	1	2	3	4	5
3. Je passe beaucoup de temps à me demander quel type de personne je suis.....	1	2	3	4	5
4. Parfois je sens que je ne suis pas vraiment la personne que je parais être.....	1	2	3	4	5
5. Lorsque je pense au type de personne que j'ai été dans le passé, je ne suis pas certain-e de comment j'étais réellement.....	1	2	3	4	5
6. Je vis rarement du conflit entre les différents aspects de ma personnalité.....	1	2	3	4	5
7. Parfois je pense que je connais d'autres gens mieux que je ne me connais moi-même	1	2	3	4	5
8. Les croyances que j'ai sur moi-même semblent changer très fréquemment.....	1	2	3	4	5
9. Si on me demandait de décrire ma personnalité, ma description pourrait bien changer d'une journée à l'autre.	1	2	3	4	5
10. Même si je le voulais, je ne pense pas que je pourrais dire à quelqu'un comment je suis réellement.....	1	2	3	4	5
11. En général, j'ai une idée claire de qui je suis et de ce que je suis.....	1	2	3	4	5
12. Il est souvent difficile pour moi de me faire une idée sur certaines choses parce que je ne sais pas vraiment ce que je veux.....	1	2	3	4	5

STABILITÉ DU SOI

Pour chacune des questions suivantes, choisis le chiffre qui correspond le mieux à comment tu te vois.

1. Est-ce que ton opinion de toi-même tend à changer beaucoup ou est-ce qu'elle reste pareille?

Change un petit peu ou pas du tout 1	Change un peu 2	Change modérément 3	Change beaucoup 4	Change énormément 5
---	--------------------	------------------------	----------------------	------------------------

2. À certains moments, j'ai une attitude positive envers moi-même, alors qu'à d'autres, je sens que je suis un échec.

Fortement en désaccord 1	En désaccord 2	Ni en accord, ni en désaccord 3	En accord 4	Fortement en accord 5
-----------------------------	-------------------	------------------------------------	----------------	--------------------------

3. Je sens que mon estime de moi varie de jour en jour.

Fortement en désaccord 1	En désaccord 2	Ni en accord, ni en désaccord 3	En accord 4	Fortement en accord 5
-----------------------------	-------------------	------------------------------------	----------------	--------------------------

4. Je sens que rien, ou presque rien, ne peut changer l'opinion que j'ai de moi-même.

Fortement en désaccord 1	En désaccord 2	Ni en accord, ni en désaccord 3	En accord 4	Fortement en accord 5
-----------------------------	-------------------	------------------------------------	----------------	--------------------------

5. Certaines journées j'ai une très bonne opinion de moi-même; d'autres journées j'ai une mauvaise opinion de moi-même.

Fortement en désaccord 1	En désaccord 2	Ni en accord, ni en désaccord 3	En accord 4	Fortement en accord 5
-----------------------------	-------------------	------------------------------------	----------------	--------------------------

VALEURS ET EXPÉRIENCES DE VIE

LORS DES EMPLOIS QUE TU AS OCCUPÉS ET DES ACTIVITÉS (EX. BÉNÉVOLAT) QUE TU AS FAIT DANS LE PASSÉ, QUELLE EXPÉRIENCE AS-TU :

	<u>Pas du tout</u>		<u>Modérément</u>			<u>Beaucoup</u>	
1. comme un-e employé-e.....	1	2	3	4	5	6	7
2. dans un poste de supervision.....	1	2	3	4	5	6	7
3. comme commis.....	1	2	3	4	5	6	7
4. comme mentor.....	1	2	3	4	5	6	7
5. dans le commerce de détail.....	1	2	3	4	5	6	7
6. comme enseignant-e.....	1	2	3	4	5	6	7

En utilisant l'échelle ci-dessous, indique dans quelle mesure tu trouves que les individus suivants ont un rôle important et valorisé dans la société.

Pas important du tout	Un petit peu important	Un peu important	Modérément important	Assez important	Très important	Extrêmement important
1	2	3	4	5	6	7

1. Policier-ère.....	1	2	3	4	5	6	7
2. Docteurs-es.....	1	2	3	4	5	6	7
3. Avocats-es.....	1	2	3	4	5	6	7
4. Professeurs-es d'université...	1	2	3	4	5	6	7
5. Enseignant-es au secondaire	1	2	3	4	5	6	7
6. Enseignant-es au primaire...	1	2	3	4	5	6	7
7. Comptables.....	1	2	3	4	5	6	7
8. Pompiers.....	1	2	3	4	5	6	7

L'ORDINATEUR DANS TA VIE

En utilisant l'échelle ci-dessous, indique dans quelle mesure tu utilises les logiciels informatiques suivants dans ta vie en général.

Pas du tout	Très rarement	Rarement	Parfois	Assez fréquemment	Très fréquemment	Extrêmement fréquemment
1	2	3	4	5	6	7

1. Word.....	1	2	3	4	5	6	7
2. Wordperfect.....	1	2	3	4	5	6	7
3. Powerpoint.....	1	2	3	4	5	6	7
4. Outlook.....	1	2	3	4	5	6	7
5. SPSS.....	1	2	3	4	5	6	7
6. Visio.....	1	2	3	4	5	6	7
7. EQS.....	1	2	3	4	5	6	7
8. Statistica.....	1	2	3	4	5	6	7
9. Eudora.....	1	2	3	4	5	6	7
10. Adobe Illustrator..	1	2	3	4	5	6	7
11. Corel Draw	1	2	3	4	5	6	7
12. Excel.....	1	2	3	4	5	6	7

Autre(s) logiciel(s) que tu utilises souvent : _____

	<u>Pas</u>		<u>Parfois</u>			<u>Extrêmement</u>	
	<u>du tout</u>					<u>fréquemment</u>	
À quelle fréquence utilises-tu le courrier électronique	1	2	3	4	5	6	7
À quelle fréquence est-ce que tu 'chat'	1	2	3	4	5	6	7
À quelle fréquence utilises-tu l'internet.....	1	2	3	4	5	6	7

Appendix H.2: Second Questionnaire Distributed in the Laboratory

****Code personnel : _____ ****

Ce questionnaire porte sur les perceptions envers ce que tu as fait durant la PREMIÈRE PHASE de l'étude (i.e., reproduire la figure à l'aide du logiciel Visio), de même que tes perceptions envers la SECONDE PHASE de cette étude (i.e., enseigner à un autre étudiant comment reproduire la figure avec Visio). Lorsque tu complètes ce questionnaire, considère que la PHASE 1 est la phase dans laquelle tu as reproduit la figure (et qui vient juste de se terminer), alors que la PHASE 2 est la phase d'enseignement (la prochaine phase).

Utilise l'échelle ci-dessous afin d'indiquer dans quelle mesure chacun des adjectifs suivants décrivent comment tu te sens lorsque tu penses à la tâche que tu vas effectuer durant la PHASE 2.

Pas du tout	Très peu	Un peu	Moyennement	Assez	Beaucoup	Extrêmement
1	2	3	4	5	6	7

Lorsque je pense à la tâche de la PHASE 2, je me sens....

- | | | | | | | | | | | | | | | | |
|-----------------------|---|---|---|---|---|---|---|--------------------------|---|---|---|---|---|---|---|
| 1. Enthousiaste..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 13. Agité(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. Fâché(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 14. Alerte..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. Fort(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 15. Craintif(ve)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. Angoissé(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 16. Inquiet(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. Intéressé(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 17. Plein(e) d'espoir... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. Effrayé(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 18. Triste..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. Inspiré(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 19. Fâché(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. Irritable..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 20. Soulagé(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. Déterminé(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 21. Apeuré(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. Nerveux(se)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 22. Confiant(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. Actif(ve)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 23. Anxieux(se)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. Attentif(ve)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 24. Heureux(se)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Les items suivants correspondent aux perceptions qu'on peut avoir envers la tâche de la DEUXIÈME PHASE de cette étude. En utilisant l'échelle ci-dessous, indique à quel point chacun des items suivants reflète comment tu perçois la tâche de la PHASE 2 de cette étude.

Pas du tout	Très peu	Un peu	Moyennement	Assez	Beaucoup	Extrêmement
1	2	3	4	5	6	7

La tâche de la PHASE 2....

1. est importante.....	1	2	3	4	5	6	7
2. est stressante.....	1	2	3	4	5	6	7
3. représente un défi.....	1	2	3	4	5	6	7
4. est menaçante.....	1	2	3	4	5	6	7
5. est positive.....	1	2	3	4	5	6	7
6. est désirable.....	1	2	3	4	5	6	7
7. affecte mon humeur (positivement ou négativement).....	1	2	3	4	5	6	7
8. a un impact important sur moi.....	1	2	3	4	5	6	7

TOI DANS LA PHASE 2

Les items suivants représentent des pensées que les gens peuvent avoir sur eux-mêmes. En utilisant l'échelle ci-dessous, indique à quel point chacun des items suivants correspond à toi dans le contexte de la tâche de la PHASE 2.

Pas du tout en accord	Très peu en accord	Un peu en accord	Moyennement en accord	Assez en accord	Fortement en accord	Très fortement en accord
1	2	3	4	5	6	7

Durant la tâche de la PHASE 2, dans quelle mesure crois-tu que...

1. Tu seras capable de surmonter les problèmes ou les obstacles qui surviendront.	1	2	3	4	5	6	7
2. Tu seras capable de bien gérer cette tâche.....	1	2	3	4	5	6	7
3. Tu as personnellement ce que ça prend pour gérer cette tâche.....	1	2	3	4	5	6	7
4. Tu as les ressources requises pour traverser avec succès cette tâche.....	1	2	3	4	5	6	7

Appendix H.3: Third Questionnaire Distributed in the Laboratory

*****Code personnel : _____*****

PENSÉES ET ACTIONS

Il y a plusieurs façons de gérer les événements stressants ou nouveaux. Cette section de ce questionnaire porte sur les différentes pensées et actions que les gens peuvent émettre lorsqu'ils(elles) sont confronté(e)s à une situation spécifique, notamment lorsqu'ils ont un rôle d'enseignant. Ci-dessous se trouve une liste d'items qui correspondent à des choses que tu peux faire ou penser pour gérer la tâche d'enseignement impliquée dans la PHASE 2. En utilisant l'échelle ci-dessous, indique dans quelle mesure chaque item correspond à ce que tu as pensé ou à ce que tu as fait pour gérer la tâche de la DEUXIÈME PHASE de cette étude.

Pas du tout 1	Très peu 2	Un peu 3	Modérément 4	Assez 5	Fortement 6	Très fortement 7
-------------------------	----------------------	--------------------	------------------------	-------------------	-----------------------	----------------------------

Afin de gérer la tâche d'enseignement de la PHASE 2...

- | | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. J'ai prit les moyens nécessaires afin de gérer cette tâche..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. J'ai cherché les aspects positifs de cette tâche..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. Je me suis fixé des buts spécifiques..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. J'ai été distrait-e par des choses autres que la tâche comme telle..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. Je suis arrivé-e à une stratégie afin de savoir quoi faire dans cette tâche. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. J'ai tenté de me plonger dans la tâche..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. J'ai accepté mes responsabilités concernant cette tâche..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. J'ai abandonné l'objectif de bien faire dans cette tâche..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. J'ai accepté le fait que cette tâche devait être effectuée..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. Je n'ai pas arrêté de penser à quel point j'étais mauvais-e dans cette tâche..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. Je me suis encouragé-e durant la tâche..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. J'ai pensé aux raisons personnelles que j'avais pour faire cette tâche... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. J'ai fait ce qu'il y avait à faire, une étape à la fois..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. J'ai eu des pensées encourageantes afin de persévérer dans cette tâche. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. J'ai rêvassé à des choses autres que cette tâche..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. Je me suis fait à l'idée de faire cette tâche..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17. Je me suis dit que cette tâche était stupide..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

18. Je me suis concentré-e sur les buts que j'avais pour cette tâche et j'ai tenté de les atteindre..... 1 2 3 4 5 6 7
19. J'ai tenté de retirer quelque chose de cette expérience..... 1 2 3 4 5 6 7
20. J'ai réfléchi à comment le mieux gérer cette tâche..... 1 2 3 4 5 6 7
21. Je me suis dit que, de toute manière, cette tâche était ridicule..... 1 2 3 4 5 6 7
22. J'ai tellement d'autres choses à faire dans ma journée que je n'ai pas trouvé que ça valait la peine d'investir de l'énergie dans cette tâche..... 1 2 3 4 5 6 7
23. J'étais préoccupé-e du bien-être des autres dans ce projet..... 1 2 3 4 5 6 7
24. J'ai réduit le montant d'efforts investis à effectuer cette tâche..... 1 2 3 4 5 6 7
25. Je me suis blâmé-e pour mon manque d'habiletés dans cette tâche... 1 2 3 4 5 6 7

TES ÉMOTIONS

*Ce questionnaire est composé de 20 adjectifs qui décrivent des sentiments et des émotions qui peuvent être ressentis. Utilise l'échelle ci-dessous pour indiquer à quel point chacun des adjectifs suivants décrit comment tu te sens **MAINTENANT**.*

1	2	3	4	5
Pas du tout ou très peu	Peu	Modérément	Beaucoup	Énormément

Maintenant, je me sens...

- | | |
|--------------------------------|---------------------------------|
| 1. Enthousiaste..... 1 2 3 4 5 | 11. Fier(e)..... 1 2 3 4 5 |
| 2. Fâché(e)..... 1 2 3 4 5 | 12. Irrité(e)..... 1 2 3 4 5 |
| 3. Fort(e)..... 1 2 3 4 5 | 13. Déterminé(e)..... 1 2 3 4 5 |
| 4. Hostile..... 1 2 3 4 5 | 14. Nerveux(se)..... 1 2 3 4 5 |
| 5. Angoissé(e)..... 1 2 3 4 5 | 15. Actif(ve)..... 1 2 3 4 5 |
| 6. Intéressé(e)..... 1 2 3 4 5 | 16. Honteux(se)..... 1 2 3 4 5 |
| 7. Effrayé(e)..... 1 2 3 4 5 | 17. Attentif(ve)..... 1 2 3 4 5 |
| 8. Excité(e)..... 1 2 3 4 5 | 18. Agité(e)..... 1 2 3 4 5 |
| 9. Coupable..... 1 2 3 4 5 | 19. Alerte..... 1 2 3 4 5 |
| 10. Inspiré(e)..... 1 2 3 4 5 | 20. Craintif(ve)..... 1 2 3 4 5 |

ENERGIE

Indique à quel point les énoncés correspondent à la façon dont tu te sens MAINTENANT.

Pas du tout en accord	Très peu en accord	Un peu en accord	Moyennement en accord	Assez en accord	Fortement en accord	Très fortement en accord
1	2	3	4	5	6	7

Maintenant...

1. je me sens vivant-e et plein-e de vie..... 1 2 3 4 5 6 7
2. je ne me sens pas très énergique..... 1 2 3 4 5 6 7
3. je me sens tellement vivant-e, au point de vouloir éclater..... 1 2 3 4 5 6 7
4. j'ai de l'énergie et de la détermination..... 1 2 3 4 5 6 7
5. j'ai hâte à chaque nouveau moment..... 1 2 3 4 5 6 7
6. je me sens alerte et éveillé-e..... 1 2 3 4 5 6 7
7. je me suis senti-e stimulé-e..... 1 2 3 4 5 6 7

1. Encerle le chiffre qui correspond à comment tu t'es senti-e compétent-e durant la tâche de la PHASE 2.

Pas compétent du tout	Très peu compétent	Un peu compétent	Moyennement compétent	Assez compétent	Très compétent	Extrêmement compétent
1	2	3	4	5	6	7

2. Dans quelle mesure as-tu senti que la PHASE 1 était différente de la PHASE 2?

Pas différente du tout	Très peu différente	Un peu différente	Moyennement différente	Assez différente	Très différente	Extrêmement différente
1	2	3	4	5	6	7

3. Dans quelle mesure as-tu perçu un changement entre la PHASE 1 et la PHASE 2?

Pas de changement du tout	Très petit changement	Petit changement	Changement moyen	Changement assez important	Changement important	Changement extrême
1	2	3	4	5	6	7

4. Dans quelle mesure as-tu senti que tu as dû changer et adapter tes comportements de la PHASE 1 à la PHASE 2?

Pas de changement du tout	Très petit changement	Petit changement	Changement moyen	Changement assez important	Changement important	Changement extrême
1	2	3	4	5	6	7

5. Comment décrirais-tu ta relation avec l'autre étudiant-e?

Pas harmonieuse du tout	Très peu harmonieuse	Un peu harmonieuse	Modérément harmonieuse	Assez harmonieuse	Très harmonieuse	Extrêmement harmonieuse
1	2	3	4	5	6	7

Pas productive du tout	Très peu productive	Un peu Productive	Modérément productive	Assez productive	Très productive	Extrêmement productive
1	2	3	4	5	6	7

6. Comment t'es-tu senti-e envers l'expérimentatrice?

Pas confortable du tout	Très peu confortable	Peu confortable	Moyennement confortable	Assez confortable	Très confortable	Extrêmement confortable
1	2	3	4	5	6	7

Quel était le véritable but de l'étude selon toi?

Tes commentaires sur l'étude :

Merci beaucoup pour ta collaboration très appréciée

APPENDIX I

Overview of the Design and Measures for Study 3

<i>Questionnaire 1: Beginning of the fall semester</i>	<i>Questionnaire 2: Slightly after mid-term</i>	<i>Questionnaire 3: End of the term</i>
<i>Sense of self measures:</i> -Self-concept clarity (Campbell et al., 1996) -Self-esteem stability (Rosenberg, 1965) -Global self-determination (Pelletier et al., 2004)		
<i>Psychological well-being</i> (Ryff, 1989; subscales of autonomy, environmental mastery, personal growth, and purpose in life)		<i>Psychological well-being</i> (Ryff, 1989; subscales of autonomy, environmental mastery, personal growth, and purpose in life)
<i>Identification as university student:</i> -Adaptation of Jackson (2002)'s social identity items -Inclusion in the self (Aron et al., 1991, 1992)		<i>Identification as university student:</i> -Adaptation of Jackson (2002)'s social identity items -Inclusion in the self (Aron et al., 1991, 1992)
<i>Contextual motivation:</i> Academic motivation (Vallerand et al., 1992, 1993)		<i>Contextual motivation:</i> Academic motivation (Vallerand et al., 1992, 1993)
	<i>Appraisals of the transition to university</i> (adapted from Campbell et al., 1991; Cheng, 2001; Folkman & Lazarus, 1985; Long & Schultz, 1995; Ptacek et al., 1994)	
	<i>Coping with the transition:</i> -COPE (Carver et al., 1989)	

APPENDIX J

Covariance Matrix for the Observed Variables of the Full Model (Study 3)

COVARIANCE MATRIX TO BE ANALYZED

		IDROLE_ V 41	XASTRE_ V 62	XATHRE_ V 64	XAPOS_ V 65	XADESI_ V 66
IDROLE_	V 41	1.648				
XASTRE_	V 62	.145	2.051			
XATHRE_	V 64	.053	1.122	1.891		
XAPOS_	V 65	.168	-.283	-.291	1.391	
XADESI_	V 66	.121	-.442	-.210	.958	1.855
ZIDROL_	V104	.732	.090	.104	.175	.210
DID_	V138	.407	.397	.222	.099	.228
CID_	V139	.449	.242	.054	.189	.243
QID_	V148	.326	.231	.097	.268	.372
XACT_	V157	.318	.041	-.036	.447	.409
XPLAN_	V158	.293	-.033	-.051	.396	.317
XSSI_	V159	.271	.366	.257	.306	.190
XDENI_	V163	.003	.170	.247	-.220	-.189
XBHV_	V164	-.060	.220	.363	-.203	-.173
XMEN_	V165	-.084	.324	.388	-.217	-.197
XGOAL_	V166	.424	-.036	-.117	.462	.363
XOB_	V167	-.074	.416	.499	-.312	-.234
XACC_	V176	.228	.184	.008	.377	.388
ZDID_	V188	.355	.251	.269	.200	.419
ZQID_	V189	.334	.072	.042	.354	.533
ZCID_	V190	.391	.170	.104	.157	.364
AINDEX1	V203	1.073	-2.412	-2.111	2.773	2.995
AINDEX2	V204	1.957	-.394	-.102	2.284	3.214
AINDEX3	V205	.548	-1.689	-1.766	2.989	2.172
ZAINDEX1	V209	1.628	-2.138	-2.453	3.391	3.741
ZAINDEX2	V210	2.409	-1.447	-1.609	2.204	2.880
ZAINDEX3	V211	1.939	-1.895	-2.129	2.576	3.098
XAPAX_	V212	.321	-.255	-.231	.627	.653
XANAX_	V213	.113	1.133	1.019	-.364	-.255
PARCWB21	V273	.129	-.206	-.203	.213	.189
PARCWB22	V274	.067	-.165	-.165	.139	.110
PARCWB23	V275	.071	-.079	-.073	.091	.060
ZPARWB21	V285	.120	-.236	-.245	.162	.187
ZPARWB22	V286	.152	-.225	-.292	.178	.193
ZPARWB23	V287	.100	-.178	-.228	.111	.145
SSPARC1	V302	.082	-.215	-.230	.123	.110
SSPARC2	V303	.015	-.298	-.278	.137	.115
SSPARC3	V304	.020	-.194	-.218	.117	.107

		ZIDROL V104	DID V138	CID V139	QID V148	XACT V157
ZIDROL	V104	1.665				
DID	V138	.533	1.547			
CID	V139	.486	.965	1.134		
QID	V148	.409	.918	.737	1.022	
XACT	V157	.368	.338	.348	.325	.897
XPLAN	V158	.365	.271	.313	.255	.709
XSSI	V159	.226	.422	.357	.425	.627
XDENI	V163	-.089	.054	-.015	.037	-.207
XBHV	V164	-.080	-.017	-.100	-.060	-.208
XMEN	V165	-.168	.058	-.065	.059	-.262
XGOAL	V166	.373	.400	.411	.338	.722
XOB	V167	-.061	.160	.038	-.037	-.086
XACC	V176	.155	.172	.205	.208	.548
ZDID	V188	.701	1.190	.759	.803	.402
ZQID	V189	.609	.811	.614	.781	.450
ZCID	V190	.704	.871	.803	.640	.443
AINDEX1	V203	-.052	.530	.812	1.412	1.809
AINDEX2	V204	2.057	3.155	2.516	3.131	2.079
AINDEX3	V205	-.284	1.298	1.078	2.267	1.903
ZAINDEX1	V209	1.224	1.343	1.030	1.618	2.889
ZAINDEX2	V210	1.969	2.377	2.309	2.820	2.420
ZAINDEX3	V211	1.763	1.575	1.308	2.352	2.421
XAPAX	V212	.270	.325	.330	.420	.513
XANAX	V213	.064	.249	.112	.113	-.015
PARCWB21	V273	.007	.093	.126	.136	.147
PARCWB22	V274	.075	.116	.128	.187	.175
PARCWB23	V275	.043	-.015	.027	.047	.107
ZPARWB21	V285	.080	.019	.066	.058	.174
ZPARWB22	V286	.189	.052	.134	.137	.219
ZPARWB23	V287	.071	.000	.044	.049	.142
SSPARC1	V302	.051	-.024	.072	.055	.095
SSPARC2	V303	.031	-.027	.086	.058	.087
SSPARC3	V304	-.018	-.044	.056	.032	.054

		XPLAN V158	XSSI V159	XDENI V163	XBHV V164	XMEN V165
XPLAN	V158	1.159				
XSSI	V159	.778	2.040			
XDENI	V163	-.231	-.134	.993		
XBHV	V164	-.231	-.162	.522	.740	
XMEN	V165	-.321	-.028	.461	.448	1.386
XGOAL	V166	.848	.673	-.216	-.294	-.322
XOB	V167	-.072	.048	.356	.431	.314
XACC	V176	.465	.432	-.168	-.145	-.053
ZDID	V188	.369	.621	.049	.008	.083
ZQID	V189	.390	.511	.008	-.064	-.016
ZCID	V190	.476	.516	.007	-.067	-.052
AINDEX1	V203	1.848	1.549	-.406	-1.528	-1.597
AINDEX2	V204	1.544	2.316	-.192	-.825	-.510
AINDEX3	V205	2.288	2.347	-.656	-1.413	-1.203
ZAINDEX1	V209	2.809	2.192	-1.506	-2.444	-3.007
ZAINDEX2	V210	2.541	1.844	-1.067	-1.901	-1.464
ZAINDEX3	V211	2.585	1.619	-1.226	-1.690	-1.903
XAPAX	V212	.491	.396	-.058	-.178	-.158
XANAX	V213	-.034	.303	.384	.409	.430
PARCWB21	V273	.166	.088	-.084	-.113	-.083
PARCWB22	V274	.205	.068	-.025	-.152	-.159
PARCWB23	V275	.160	.049	-.050	-.099	-.085
ZPARWB21	V285	.216	.107	-.134	-.141	-.161
ZPARWB22	V286	.274	.142	-.097	-.209	-.231
ZPARWB23	V287	.217	.121	-.123	-.155	-.173
SSPARC1	V302	.127	.072	-.091	-.153	-.241
SSPARC2	V303	.100	.041	-.100	-.149	-.217
SSPARC3	V304	.078	.036	-.028	-.083	-.155

		XGOAL V166	XOB V167	XACC V176	ZDID V188	ZQID V189
XGOAL	V166	1.184				
XOB	V167	-.126	1.485			
XACC	V176	.484	-.105	1.020		
ZDID	V188	.423	.097	.197	1.828	
ZQID	V189	.422	-.046	.206	1.247	1.262
ZCID	V190	.476	.077	.266	1.191	.960
AINDEX1	V203	2.433	-2.205	1.470	.599	1.710
AINDEX2	V204	2.222	-.964	1.505	3.483	3.517
AINDEX3	V205	2.301	-1.389	1.852	1.444	2.332
ZAINDEX1	V209	3.260	-2.080	1.759	1.619	3.003
ZAINDEX2	V210	2.808	-1.531	1.751	3.230	4.015
ZAINDEX3	V211	2.494	-1.677	1.628	2.400	3.909
XAPAX	V212	.601	-.158	.320	.443	.544
XANAX	V213	-.070	.522	.096	.299	.074
PARCWB21	V273	.182	-.094	.081	.014	.117
PARCWB22	V274	.281	-.116	.113	.081	.158
PARCWB23	V275	.150	-.048	.092	-.010	.072
ZPARWB21	V285	.199	-.185	.115	.036	.144
ZPARWB22	V286	.254	-.169	.109	.119	.210
ZPARWB23	V287	.190	-.141	.102	-.016	.087
SSPARC1	V302	.197	-.166	.065	-.045	.082
SSPARC2	V303	.147	-.148	.038	-.024	.080
SSPARC3	V304	.130	-.143	.028	-.017	.087

		ZCID V190	AINDEX1 V203	AINDEX2 V204	AINDEX3 V205	ZAINDEX1 V209
ZCID	V190	1.278				
AINDEX1	V203	1.092	68.617			
AINDEX2	V204	2.851	31.633	52.928		
AINDEX3	V205	1.587	43.078	28.050	62.503	
ZAINDEX1	V209	2.050	47.196	31.111	40.862	82.900
ZAINDEX2	V210	3.366	32.621	32.349	29.694	49.092
ZAINDEX3	V211	2.764	37.465	27.369	40.130	56.899
XAPAX	V212	.426	3.192	2.757	2.621	3.920
XANAX	V213	.195	-2.107	.119	-1.701	-2.392
PARCWB21	V273	.092	2.580	1.395	2.376	2.598
PARCWB22	V274	.112	2.513	1.347	1.797	1.901
PARCWB23	V275	.084	1.903	.556	1.514	1.807
ZPARWB21	V285	.106	2.287	1.106	1.787	2.689
ZPARWB22	V286	.220	2.403	1.560	1.946	3.188
ZPARWB23	V287	.107	1.880	.992	1.626	2.369
SSPARC1	V302	.077	2.397	1.093	1.945	2.168
SSPARC2	V303	.100	2.499	.893	2.006	2.342
SSPARC3	V304	.069	2.432	.996	1.965	2.247

		ZAINDEX2 V210	ZAINDEX3 V211	XAPAX V212	XANAX V213	PARCWB21 V273
ZAINDEX2	V210	61.126				
ZAINDEX3	V211	43.426	69.437			
XAPAX	V212	3.267	3.278	.880		
XANAX	V213	-1.341	-1.527	-.173	1.356	
PARCWB21	V273	1.955	2.032	.222	-.199	.462
PARCWB22	V274	1.743	1.591	.232	-.179	.226
PARCWB23	V275	1.221	1.336	.129	-.113	.199
ZPARWB21	V285	2.108	2.387	.208	-.235	.235
ZPARWB22	V286	2.886	2.804	.263	-.198	.185
ZPARWB23	V287	1.857	2.172	.149	-.206	.161
SSPARC1	V302	1.464	1.773	.124	-.257	.212
SSPARC2	V303	1.551	1.975	.126	-.313	.226
SSPARC3	V304	1.595	1.815	.147	-.231	.180

		PARCWB22 V274	PARCWB23 V275	ZPARWB21 V285	ZPARWB22 V286	ZPARWB23 V287
PARCWB22	V274	.555				
PARCWB23	V275	.209	.359			
ZPARWB21	V285	.151	.153	.454		
ZPARWB22	V286	.296	.177	.292	.598	
ZPARWB23	V287	.141	.196	.225	.255	.369
SSPARC1	V302	.234	.186	.186	.232	.190
SSPARC2	V303	.229	.184	.214	.259	.198
SSPARC3	V304	.203	.158	.168	.208	.169

		SSPARC1 V302	SSPARC2 V303	SSPARC3 V304
SSPARC1	V302	.630		
SSPARC2	V303	.482	.574	
SSPARC3	V304	.390	.385	.489

APPENDIX K

Questionnaires Used in Study 3

Appendix K.1: First Questionnaire: Distributed at the Beginning of the Fall Semester

QUESTIONNAIRE 1 : VIE UNIVERSITAIRE

Informations démographiques:

Sexe: FEMME _____ HOMME _____ Date : _____

Age: _____

Langue maternelle: _____

Pays d'origine: _____

Origine ethnique: _____

Origine ethnique de ta mère: _____ Origine ethnique de ton père: _____

Travailles-tu pendant la session universitaire? OUI : _____ NON : _____

Si oui, combine d'heures par semaines travailles-tu, en moyenne? _____

Ton diplôme obtenu le plus élevé: _____

Indique le statut que tu avais avant de débiter cette session universitaire-ci :

Étudiant(e) au secondaire : _____ Si oui, as-tu fait une 13e année? OUI : _____ NON : _____

Étudiant(e) au cégep : _____

Étudiant(e) à l'université : _____ Programme : _____ Institution : _____

Employé(e) : _____ Type d'emploi : _____ Temps partiel : _____ Temps plein : _____

Es-tu déménagé(e) cette année? OUI : _____ NON : _____. Si oui, est-ce que :

Tu as changé de ville? OUI : _____ NON : _____

Tu as déménagé de chez tes parents à ton propre chez-toi? OUI : _____ NON : _____

Quand es-tu déménagé(e)? MOIS : _____ ANNÉE : _____

Information sur ton programme universitaire:

Programme d'études: _____

En quelle année es-tu présentement? 1^{ère} : _____ 2^{ème} : _____ 3^{ème} : _____ 4^{ème} : _____

Dans quels programmes avais-tu appliqué à l'Université d'Ottawa?

Premier choix: _____

Deuxième choix: _____

Troisième choix: _____

Combien de cours prends-tu cette session-ci? _____

*******Instructions pour inscrire ton code personnel***** :**

- Espaces 1 et 2: Inscris les initiales de ta mère.
- Espaces 3 et 4: Inscrit ton mois de naissance.
- Espaces 5 et 6: Inscrit les deux derniers chiffres de ton numéro de téléphone.

*******Code personnel : _____ *******

Indique à quel point tu sens que tu vis présentement du changement dans ta vie à cause de la transition à l'université :

- ___ Je vis extrêmement de changement
- ___ Je vis beaucoup de changement
- ___ Je vis moyennement de changement
- ___ Je vis un peu de changement
- ___ Je ne vis pas du tout de changement

À quel point sens-tu que tu es en train de vivre la transition à l'université MAINTENANT?

- ___ Je suis entièrement dans le processus de transition
- ___ Je suis beaucoup dans le processus de transition
- ___ Je suis un peu dans le processus de transition
- ___ Je suis en train de compléter le processus de transition
- ___ J'ai maintenant complété le processus de transition

ATTITUDES GÉNÉRALES

Indique dans quelle mesure chacun des énoncés suivants correspond aux raisons pour lesquelles tu fais différentes choses en général.

Ne correspond pas du tout	Correspond très peu	Correspond un peu	Correspond moyennement	Correspond assez	Correspond beaucoup	Correspond exactement
1	2	3	4	5	6	7

En général, je fais des choses . . .

- | | | | | | | | |
|--|---|---|---|---|---|---|---|
| 1. pour m'aider à devenir ce que je veux être plus tard..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. parce que j'aime faire des découvertes intéressantes..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. parce que je veux être mieux considéré-e par certaines personnes..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. parce que je les choisies comme moyens pour réaliser mes projets..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. pour le plaisir d'acquérir des connaissances..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. parce que je me sentirais coupable de ne pas les faire..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. parce qu'en les faisant, je me conduis en accord avec mes
principes les plus profonds..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. bien que cela ne fasse pas de différence que je les fasse ou non..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. parce que j'éprouve des sensations plaisantes en les faisant..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. pour montrer aux autres ce que je vaux..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. parce que je les choisies pour obtenir ce que je désire..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. parce que je m'en voudrais de ne pas les faire..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

- | | | | | | | | |
|--|---|---|---|---|---|---|---|
| 13. même si je n'ai pas de bonnes raisons de les faire..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. parce que je souhaite obtenir du prestige..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. même si je ne crois pas que cela en vaille la peine..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. parce que je me sentirais mal de ne pas les faire..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17. parce qu'en les effectuant, j'exprime pleinement mes valeurs les plus profondes..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. parce qu'elles reflètent ce que je valorise le plus dans la vie..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

POURQUOI VAS-TU A L'UNIVERSITÉ?

À l'aide des choix de réponse ci-dessous, indique dans quelle mesure chacune des phrases suivantes correspond aux raisons pour lesquelles tu vas à l'université.

Ne correspond pas du tout	Correspond très peu	Correspond un peu	Correspond moyennement	Correspond assez	Correspond beaucoup	Correspond exactement
1	2	3	4	5	6	7

Pourquoi vas-tu à l'université?

- | | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. parce que j'éprouve du plaisir et de la satisfaction à apprendre de nouvelles choses..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. parce que j'ai besoin d'un diplôme universitaire pour avoir un bon emploi..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. pour me prouver que je suis capable de réussir des études universitaires..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. parce c'est un des moyens que j'ai choisis afin d'acquérir des habiletés dans un domaine qui est important pour moi..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. je me demande ce que je fais à l'université; en fait, je trouve cela ennuyant..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. pour le plaisir que je ressens lorsque je me dépasse dans mes études..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. honnêtement, je ne le sais pas; j'ai vraiment l'impression de perdre mon temps à l'université..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. parce qu'aller à l'université me fait sentir important..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. parce que ça me permet d'apprendre sur des sujets qui ont une importance primordiale pour moi..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. parce que l'université me permet de continuer à apprendre beaucoup de choses qui m'intéressent..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. parce que je dois aller à l'université afin de compléter mon diplôme..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. parce que, à mon avis, c'est une bonne manière de développer des habiletés qui me seront utiles plus tard..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. je ne le sais pas; je ne parviens pas à comprendre ce que je fais à l'université..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. parce que c'est un prérequis pour obtenir l'emploi que je veux..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. pour me prouver que je suis une personne intelligente..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

16. pour le plaisir que je ressens à apprendre davantage sur des sujets qui m'intéressent.....	1	2	3	4	5	6	7
17. parce que l'expérience universitaire est très significative pour moi.....	1	2	3	4	5	6	7
18. parce que c'était le seul moyen d'être compétitif pour obtenir la carrière que je désire.....	1	2	3	4	5	6	7
19. pour me prouver que je suis capable de réussir dans mes projets universitaires.....	1	2	3	4	5	6	7
20. parce qu'aller à l'université est un bon moyen pour me préparer à ma carrière future.....	1	2	3	4	5	6	7
21. parce qu'aller à l'université est vraiment ce que je veux faire pour le moment.....	1	2	3	4	5	6	7

CONCEPT DE SOI

Les items suivants représentent des manières dont tu peux te percevoir. En utilisant l'échelle ci-dessous, indique à quel point chaque item représente comment tu te vois.

1	2	3	4	5	
Fortement en désaccord	En désaccord	Ni en accord, ni en désaccord	En Accord	Fortement en accord	
1. Les croyances que j'ai sur moi-même sont souvent en conflit les unes avec les autres.....	1	2	3	4	5
2. Une journée je peux avoir une opinion de moi-même et l'autre journée je peux avoir une opinion différente.....	1	2	3	4	5
3. Je passe beaucoup de temps à me demander quel type de personne je suis.....	1	2	3	4	5
4. Parfois je sens que je ne suis pas vraiment la personne que je parais être.....	1	2	3	4	5
5. Lorsque je pense au type de personne que j'ai été dans le passé, je ne suis pas certain-e de comment j'étais réellement.....	1	2	3	4	5
6. Je vis rarement du conflit entre les différents aspects de ma personnalité.....	1	2	3	4	5
7. Parfois je pense que je connais d'autres gens mieux que je ne me connais moi-même	1	2	3	4	5
8. Les croyances que j'ai sur moi-même semblent changer très fréquemment.....	1	2	3	4	5
9. Si on me demandait de décrire ma personnalité, ma description pourrait bien changer d'une journée à l'autre.	1	2	3	4	5
10. Même si je le voulais, je ne pense pas que je pourrais dire à quelqu'un comment je suis réellement.....	1	2	3	4	5
11. En général, j'ai une idée claire de qui je suis et de ce que je suis.....	1	2	3	4	5
12. Il est souvent difficile pour moi de me faire une idée sur certaines choses parce que je ne sais pas vraiment ce que je veux.....	1	2	3	4	5

STABILITÉ DU SOI

Pour chacune des questions suivantes, choisis le chiffre qui correspond le mieux à comment tu te vois.

1. Est-ce que ton opinion de toi-même tend à changer beaucoup ou est-ce qu'elle reste pareille?

Change un petit peu ou pas du tout 1	Change un peu 2	Change modérément 3	Change beaucoup 4	Change énormément 5
---	--------------------	------------------------	----------------------	------------------------

2. À certains moments, j'ai une attitude positive envers moi-même, alors qu'à d'autres, je sens que je suis un échec.

Fortement en désaccord 1	En désaccord 2	Ni en accord, ni en désaccord 3	En accord 4	Fortement en accord 5
-----------------------------	-------------------	------------------------------------	----------------	--------------------------

3. Je sens que mon estime de moi varie de jour en jour.

Fortement en désaccord 1	En désaccord 2	Ni en accord, ni en désaccord 3	En accord 4	Fortement en accord 5
-----------------------------	-------------------	------------------------------------	----------------	--------------------------

4. Je sens que rien, ou presque rien, ne peut changer l'opinion que j'ai de moi-même.

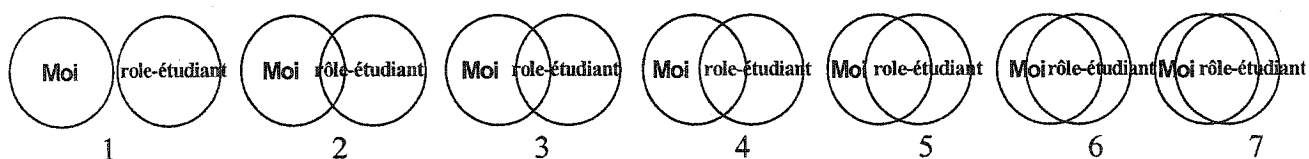
Fortement en désaccord 1	En désaccord 2	Ni en accord, ni en désaccord 3	En accord 4	Fortement en accord 5
-----------------------------	-------------------	------------------------------------	----------------	--------------------------

5. Certaines journées j'ai une très bonne opinion de moi-même; d'autres journées j'ai une mauvaise opinion de moi-même.

Fortement en désaccord 1	En désaccord 2	Ni en accord, ni en désaccord 3	En accord 4	Fortement en accord 5
-----------------------------	-------------------	------------------------------------	----------------	--------------------------

RELATIONS

Encerle l'illustration qui correspond le mieux à la relation entre toi et le rôle d'étudiant-e universitaire.



ÊTRE UN(E) ÉTUDIANT(E) UNIVERSITAIRE

En utilisant l'échelle ci-dessous, indique à quel point les items suivants correspondent à toi en tant qu'étudiant-e universitaire.

Ne correspond pas du tout	Correspond très peu	Correspond un peu	Correspond moyennement	Correspond assez	Correspond beaucoup	Correspond exactement
1	2	3	4	5	6	7

- | | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. Je m'identifie en tant qu'étudiant-e universitaire..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. Je suis content-e d'être un-e étudiant-e universitaire..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. Être un-e étudiant-e universitaire me donne des buts précis dans la vie..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. Être un-e étudiant-e universitaire est une partie importante de mon identité..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. Je suis fier-e d'être un-e étudiant-e universitaire..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. Être un-e étudiant-e universitaire correspond à mes valeurs..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. Être un-e étudiant-e universitaire importe sur la façon dont je me perçois..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. J'attache beaucoup de valeur au fait que je sois un-e étudiant-e universitaire..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. Être un-e étudiant-e universitaire m'aide à accomplir des choses qui sont importantes dans ma vie..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. Être un-e étudiant-e universitaire reflète bien qui je suis..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. Mon image des étudiants-es universitaires est positive..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. Être un-e étudiant-e universitaire influence les activités que je fais dans la vie... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

PERCEPTIONS DE TA VIE

Les items suivants réfèrent à des manières dont tu peux te sentir dans ta vie en général. En utilisant l'échelle ci-dessous, indique dans quelle mesure tu es en accord ou en désaccord avec chacun des items.

Fortement en désaccord	Modérément en désaccord	Faiblement en désaccord	Faiblement en accord	Modérément en accord	Fortement en accord
1	2	3	4	5	6

Dans ma vie en général...

- | | | | | | | |
|---|---|---|---|---|---|---|
| 1. En général j'ai le sentiment que je maîtrise la situation dans laquelle je vis..... | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. Je vis au jour le jour et ne pense pas vraiment au futur..... | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. Les exigences de la vie de tous les jours me démoralisent souvent..... | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. Je gère assez bien les nombreuses responsabilités de ma vie quotidienne..... | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. Je pense qu'il est important d'avoir de nouvelles expériences qui remettent en question la façon dont on se voit et dont on voit le monde..... | 1 | 2 | 3 | 4 | 5 | 6 |

- | | | | | | | |
|--|---|---|---|---|---|---|
| 6. J'ai tendance à être influencé(e) par les gens qui ont de fortes opinions..... | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. J'ai confiance en mes opinions même si elles sont contraires au consensus général..... | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. Pour moi la vie a été un processus continu d'apprentissage, de changement et de développement..... | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. J'ai renoncé à faire des changements ou à améliorer ma vie..... | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. Je ne fais pas partie de gens qui n'ont pas de but dans la vie..... | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. Je me juge à partir de ce qui me semble important et non pas à partir des valeurs que les autres trouvent importantes..... | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. J'ai parfois le sentiment d'avoir fait tout ce qu'il y a à faire dans la vie..... | 1 | 2 | 3 | 4 | 5 | 6 |

MERCI BEAUCOUP POUR TA COLLABORATION TRÈS APPRÉCIÉE

Appendix K.2: Second Questionnaire: Distributed Slightly After Mid-Term

QUESTIONNAIRE 2 : VIE UNIVERSITAIRE

*****Ton code personnel : _____*****

*****Instructions pour inscrire ton code personnel***** :

- Espaces 1 et 2: Inscris les initiales de ta mère.
- Espaces 3 et 4: Inscrit ton mois de naissance.
- Espaces 5 et 6: Inscrit les deux derniers chiffres de ton numéro de téléphone.

Programme d'études : _____

Combien d'examens de **mi-session** auras-tu fait cette session-ci? _____

Combien en as-tu passé (selon les exigences de ton programme)? _____

Dans combien de cours es-tu inscrit-e présentement? _____

Ce deuxième questionnaire te pose des questions concernant la transition à l'université. Cette transition représente un événement de vie important qui implique des changements dans différents domaines de la vie. Puisque nous sommes intéressés à ce que tu vis durant cette transition, plusieurs des questions de ce questionnaire te demanderont de penser à comment tu te sens et à ce que tu vis dans ce contexte spécifique. Aussi, tu noteras que certaines des questions de ce questionnaire-ci sont similaires à certaines questions du questionnaire 1. Nous te prions de compléter ce questionnaire-ci en te référant à comment tu te sens MAINTENANT.

Indique à quel point tu sens que tu vis présentement du changement dans ta vie à cause de la transition à l'université :

- _____ Je vis extrêmement de changement
- _____ Je vis beaucoup de changement
- _____ Je vis moyennement de changement
- _____ Je vis un peu de changement
- _____ Je ne vis pas du tout de changement

À quel point sens-tu que tu es en train de vivre la transition à l'université MAINTENANT?

- _____ Je suis entièrement dans le processus de transition
- _____ Je suis beaucoup dans le processus de transition
- _____ Je suis un peu dans le processus de transition
- _____ Je suis en train de compléter le processus de transition
- _____ J'ai maintenant complété le processus de transition

TES PERCEPTIONS ENVERS LA TRANSITION À L'UNIVERSITÉ

Les items suivants correspondent aux perceptions qu'on peut avoir envers la transition à l'université. En utilisant l'échelle ci-dessous, indique dans quelle mesure chacun des items reflète comment **tu** perçois la transition à l'université.

Pas du tout	Très peu	Un peu	Moyennement	Assez	Beaucoup	Extrêmement
1	2	3	4	5	6	7

La transition à l'université....

- | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|
| 1. est stressante..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. est menaçante..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. est positive..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. est désirable..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

ÉMOTIONS

Ce questionnaire est composé de 20 adjectifs qui décrivent certains sentiments et émotions. Utilise l'échelle ci-dessous afin d'indiquer à quel point chacun des adjectifs décrits **comment tu te sens quand tu penses à la transition à l'université**.

Pas du tout	Très peu	Un peu	Moyennement	Assez	Beaucoup	Extrêmement
1	2	3	4	5	6	7

Quand je pense à la transition à l'université, je me sens....

- | | | | | | | | | | | | | | | | |
|-----------------------|---|---|---|---|---|---|---|--------------------------|---|---|---|---|---|---|---|
| 1. Enthousiaste..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 18. Agité(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. Fâché(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 19. Alerte..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. Fort(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 20. Craintif(ve)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. Hostile..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 21. Inquiet(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. Angoissé(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 22. Plein(e) d'espoir... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. Intéressé(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 23. Triste..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. Effrayé(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 24. Fâché(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. Excité(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 25. Soulagé(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. Coupable..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 26. Stimulé(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. Inspiré(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 27. Dégouté(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. Fier(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 28. Content(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. Irritable..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 29. Apeuré(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. Déterminé(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 30. Confiant(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

- | | | | | | | | | | | | | | | | |
|-----------------------|---|---|---|---|---|---|---|------------------------|---|---|---|---|---|---|---|
| 14. Nerveux(se)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 31. Passionné(e)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. Actif(ve)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 32. Anxieux(se)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. Honteux(se)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 33. Heureux(se)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17. Attentif(ve)..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 34. Désappointé(e).... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

NOUVEAUX COMPORTEMENTS

En utilisant l'échelle ci-dessous, indique à quel point tu sens que tu dois maintenant effectuer les comportements suivant à cause de ta transition à l'université.

Pas du tout	Très peu	Un peu	Moyennement	Assez	Beaucoup	Extrêmement
1	2	3	4	5	6	7

- | | | | | | | | |
|--|---|---|---|---|---|---|---|
| 1. Organiser mon temps..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. Planifier du temps consacré à l'étude et aux travaux académiques... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. Aller à la bibliothèque..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. Développer un nouveau réseau social..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. Commencer à penser à ma carrière future..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. Contacter des professeurs et des assistants d'enseignement..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. Autre nouveau comportement : _____ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

PENSÉES ET ACTIONS

*Il y a plusieurs façons de gérer les événements nouveaux ou stressants. Ce questionnaire porte sur les différentes pensées et actions que les gens peuvent émettre lorsqu'ils(elles) sont confronté(e)s à des situations changeantes ou stressantes. Ci-dessous se trouve une liste d'items qui correspondent à des choses que tu peux faire ou penser pour t'adapter à l'université. En utilisant l'échelle ci-dessous, indique dans quelle mesure chaque item correspond à ce que tu penses ou à ce que tu fais pour **gérer la transition à l'université**.*

Pas du tout	Très peu	Un peu	Modérément	Assez	Fortement	Très fortement
1	2	3	4	5	6	7

Lorsque je gère la transition à l'université...

- | | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. Je prends les mesures nécessaires pour gérer la transition..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. Je parle à quelqu'un de comment je me sens..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. Je refuse de croire que la transition a lieu présentement..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. Je trouve mes propres manières pour gérer les nouvelles exigences de la vie universitaire..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. Je recherche les aspects positifs de cette transition..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. Je me dis que ça ne vaut pas la peine d'essayer de m'intégrer au milieu universitaire... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. Je me tourne vers d'autres activités (ex. loisirs) afin de me changer les idées..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. J'essaie d'arriver à une stratégie pour savoir quoi faire..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. Je bois de l'alcool ou je prends de la drogue afin de moins y penser..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. Je demande à des gens qui ont vécu une expérience semblable ce qu'ils ont fait..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. J'abandonne mes tentatives pour obtenir ce que je veux..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. J'apprends à vivre avec cette transition..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. Je me fâche et laisse sortir mes émotions..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. Je concentre mes efforts pour faire quelque chose à propos de la transition..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. J'essaie d'obtenir du soutien émotionnel de la part de mes amis ou de ma famille..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. Je prétends que la transition n'a pas vraiment lieu..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17. Je focus sur les buts que je me suis fixés à l'université et je me concentre à les atteindre | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. J'essaie de voir la transition d'un autre œil positif..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 19. J'utilise les stratégies qui m'ont aidé-e par le passé à m'adapter à un nouveau milieu..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 20. Je vais au cinéma ou je regarde la télévision afin de moins y penser..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 21. Je fais un plan d'action..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

22. Je m'assure de consulter les gens appropriés et utiles lorsque j'en ai besoin.....	1	2	3	4	5	6	7
23. J'arrête d'essayer d'atteindre mes objectifs.....	1	2	3	4	5	6	7
24. J'accepte que la transition ait lieu et que cela ne puisse être changé.....	1	2	3	4	5	6	7
25. J'extériorise mes sentiments.....	1	2	3	4	5	6	7
26. Je fais ce qui doit être fait, une étape à la fois.....	1	2	3	4	5	6	7
27. Je discute de mes sentiments avec quelqu'un.....	1	2	3	4	5	6	7
28. J'agis comme si la transition ne se produisait pas.....	1	2	3	4	5	6	7
29. J'organise mon temps afin d'inclure ce que je dois faire pour mes études universitaires.....	1	2	3	4	5	6	7
30. J'apprends quelque chose de cette expérience.....	1	2	3	4	5	6	7
31. Je me rappelle que, de toute manière, cette université n'est pas sensible aux besoins des étudiants qui vivent la transition	1	2	3	4	5	6	7
32. Je rêve à des choses autres que ceci.....	1	2	3	4	5	6	7
33. Je pense sérieusement aux étapes à suivre.....	1	2	3	4	5	6	7
34. Je parle à quelqu'un afin d'en savoir davantage sur la transition.....	1	2	3	4	5	6	7
35. J'admets que je ne peux gérer cette transition et j'arrête d'essayer.....	1	2	3	4	5	6	7
36. J'accepte que cette transition me demande de faire certains changements dans ma vie...	1	2	3	4	5	6	7
37. Je ressens beaucoup de détresse émotionnelle et j'exprime beaucoup ces sentiments.....	1	2	3	4	5	6	7
38. Je prends les actions nécessaires pour prendre ma place dans le contexte universitaire..	1	2	3	4	5	6	7
39. Je me fixe des buts réalistes durant cette transition.....	1	2	3	4	5	6	7
40. Je planifie mon temps de manière à ce que je puisse faire tout ce que j'ai à faire dans ma vie, incluant mes tâches à l'université.....	1	2	3	4	5	6	7
41. J'établis des priorités dans ma vie.....	1	2	3	4	5	6	7
42. Je ne peux m'empêcher de penser à toutes les choses que je ne suis pas capable d'accomplir dans ce nouveau contexte.....	1	2	3	4	5	6	7
43. J'investis beaucoup d'efforts à tenter de m'adapter à ce nouveau milieu.....	1	2	3	4	5	6	7
44. Je poursuis des buts qui me donnent un sens de direction durant cette transition.....	1	2	3	4	5	6	7
45. Je change mes habitudes afin de prendre en considération les nouvelles exigences de mes études universitaires.....	1	2	3	4	5	6	7
46. Je me dis que c'est la mauvaise organisation de l'université qui rend cette transition plus difficile.....	1	2	3	4	5	6	7
47. Je prends les moyens pour vraiment sentir que je fais partie de cette université.....	1	2	3	4	5	6	7

Merci beaucoup pour ta collaboration très appréciée

Appendix K.3: Third Questionnaire: Distributed at the End of the Term

QUESTIONNAIRE 3: VIE UNIVERSITAIRE

*****Code personnel : _____*****

*****Instructions pour inscrire ton code personnel***** :

- Espaces 1 et 2: Inscris les deux LETTRES représentant les initiales de ta mère.
- Espaces 3 et 4: Inscris les deux CHIFFRES représentant ton mois de naissance.
- Espaces 5 et 6: Inscris les deux derniers chiffres de ton numéro de téléphone.

Sexe: FEMME _____ HOMME _____

Age: _____

Langue maternelle: _____

Pays d'origine: _____

Origine ethnique: _____

Programme d'études: _____

En quelle année es-tu présentement? 1^{ère}: _____ 2^{ème}: _____ 3^{ème}: _____ 4^{ème}: _____

Combien d'examens de fin de session auras-tu à faire cette session-ci? _____

Combien de cours as-tu suivis cette session-ci? _____

Quel pourcentage des cours as-tu assisté (dans tous tes cours) cette session-ci?

0-20%: _____ 20-40%: _____ 40-60%: _____ 60-80%: _____ 80-100%: _____

Jusqu'à présent, quelle est ta moyenne pour cette session-ci (pour tous tes cours)? _____%

Voici le dernier questionnaire de cette étude. Nous voudrions te remercier encore une fois pour ta collaboration dans cette étude – ton aide est très appréciée. Puisque nous nous intéressons au processus d'ajustement à la vie universitaire de même qu'aux changements qui peuvent avoir lieu durant ce processus, tu remarqueras que ce dernier questionnaire contient des questions qui sont semblables à certaines questions incluses dans les questionnaires antérieurs. Nous te demandons de compléter ce questionnaire-ci en te référant à comment TU TE SENS MAINTENANT.

Indique à quel point tu sens que tu vis présentement du changement dans ta vie à cause de la transition à l'université :

- _____ Je vis extrêmement de changement
- _____ Je vis beaucoup de changement
- _____ Je vis moyennement de changement
- _____ Je vis un peu de changement
- _____ Je ne vis pas du tout de changement

À quel point sens-tu que tu es en train de vivre la transition à l'université MAINTENANT?

- _____ Je suis entièrement dans le processus de transition
- _____ Je suis beaucoup dans le processus de transition
- _____ Je suis un peu dans le processus de transition
- _____ Je suis en train de compléter le processus de transition
- _____ J'ai maintenant complété le processus de transition

POURQUOI VAS-TU A L'UNIVERSITÉ?

À l'aide des choix de réponse ci-dessous, indique dans quelle mesure chacune des phrases suivantes correspond aux raisons pour lesquelles tu vas à l'université.

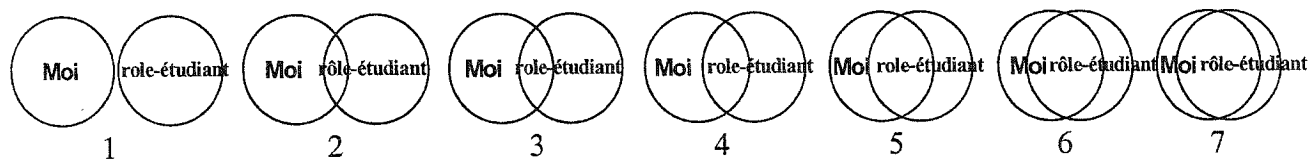
Ne correspond pas du tout	Correspond très peu	Correspond un peu	Correspond moyennement	Correspond assez	Correspond beaucoup	Correspond exactement
1	2	3	4	5	6	7

Pourquoi vas-tu à l'université?

- | | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. parce que j'éprouve du plaisir et de la satisfaction à apprendre de nouvelles choses..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. parce que j'ai besoin d'un diplôme universitaire pour avoir un bon emploi..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. pour me prouver que je suis capable de réussir des études universitaires..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. parce c'est un des moyens que j'ai choisis afin d'acquérir des habiletés dans un domaine qui est important pour moi..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. je me demande ce que je fais à l'université; en fait, je trouve cela ennuyant..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. pour le plaisir que je ressens lorsque je me dépasse dans mes études..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. honnêtement, je ne le sais pas; j'ai vraiment l'impression de perdre mon temps à l'université..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. parce qu'aller à l'université me fait sentir important..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. parce que ça me permet d'apprendre sur des sujets qui ont une importance primordiale pour moi..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. parce que l'université me permet de continuer à apprendre beaucoup de choses qui m'intéressent..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. parce que je dois aller à l'université afin de compléter mon diplôme..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. parce que, à mon avis, c'est une bonne manière de développer des habiletés qui me seront utiles plus tard..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. je ne le sais pas; je ne parviens pas à comprendre ce que je fais à l'université..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. parce que c'est un prérequis pour obtenir l'emploi que je veux..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. pour me prouver que je suis une personne intelligente..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. pour le plaisir que je ressens à apprendre davantage sur des sujets qui m'intéressent... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17. parce que l'expérience universitaire est très significative pour moi..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. parce que c'était le seul moyen d'être compétitif pour obtenir la carrière que je désire | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 19. pour me prouver que je suis capable de réussir dans mes projets universitaires..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 20. parce qu'aller à l'université est un bon moyen pour me préparer à ma carrière future.. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 21. parce qu'aller à l'université est vraiment ce que je veux faire pour le moment..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

RELATIONS

Encerle l'illustration qui correspond le mieux à la relation entre toi et le rôle d'étudiant-e universitaire.



ÊTRE UN(E) ÉTUDIANT(E) UNIVERSITAIRE

En utilisant l'échelle ci-dessous, indique à quel point les items suivants correspondent à toi en tant qu'étudiant-e universitaire.

	Ne correspond pas du tout 1	Correspond très peu 2	Correspond un peu 3	Correspond moyennement 4	Correspond assez 5	Correspond beaucoup 6	Correspond exactement 7
1. Je m'identifie en tant qu'étudiant-e universitaire.....	1	2	3	4	5	6	7
2. Je suis content-e d'être un-e étudiant-e universitaire.....	1	2	3	4	5	6	7
3. Être un-e étudiant-e universitaire me donne des buts précis dans la vie.....	1	2	3	4	5	6	7
4. Être un-e étudiant-e universitaire est une partie importante de mon identité.....	1	2	3	4	5	6	7
5. Je suis fier-e d'être un-e étudiant-e universitaire.....	1	2	3	4	5	6	7
6. Être un-e étudiant-e universitaire correspond à mes valeurs.....	1	2	3	4	5	6	7
7. Être un-e étudiant-e universitaire importe sur la façon dont je me perçois.....	1	2	3	4	5	6	7
8. J'attache beaucoup de valeur au fait que je sois un-e étudiant-e universitaire.....	1	2	3	4	5	6	7
9. Être un-e étudiant-e universitaire m'aide à accomplir des choses qui sont importantes dans ma vie.....	1	2	3	4	5	6	7
10. Être un-e étudiant-e universitaire reflète bien qui je suis.....	1	2	3	4	5	6	7
11. Mon image des étudiants-es universitaires est positive.....	1	2	3	4	5	6	7
12. Être un-e étudiant-e universitaire influence les activités que je fais dans la vie...	1	2	3	4	5	6	7

PERCEPTIONS DE TA VIE

Les items suivants réfèrent à des manières dont tu peux te sentir dans ta vie en général. En utilisant l'échelle ci-dessous, indique dans quelle mesure tu es en accord ou en désaccord avec chacun des items.

Fortement en désaccord	Modérément en désaccord	Faiblement en désaccord	Faiblement en accord	Modérément en accord	Fortement en accord
1	2	3	4	5	6

Dans ma vie en général...

- | | | | | | | |
|---|---|---|---|---|---|---|
| 1. En général j'ai le sentiment que je maîtrise la situation dans laquelle je vis..... | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. Je vis au jour le jour et ne pense pas vraiment au futur..... | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. Les exigences de la vie de tous les jours me démoralisent souvent..... | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. Je gère assez bien les nombreuses responsabilités de ma vie quotidienne..... | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. Je pense qu'il est important d'avoir de nouvelles expériences qui remettent en question la façon dont on se voit et dont on voit le monde..... | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. J'ai tendance à être influencé(e) par les gens qui ont de fortes opinions..... | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. J'ai confiance en mes opinions même si elles sont contraires au consensus général..... | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. Pour moi la vie a été un processus continu d'apprentissage, de changement et de développement..... | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. J'ai renoncé à faire des changements ou à améliorer ma vie..... | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. Je ne fais pas partie de gens qui n'ont pas de but dans la vie..... | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. Je me juge à partir de ce qui me semble important et non pas à partir des valeurs que les autres trouvent importantes..... | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. J'ai parfois le sentiment d'avoir fait tout ce qu'il y a à faire dans la vie..... | 1 | 2 | 3 | 4 | 5 | 6 |

MERCI BEAUCOUP POUR TA COLLABORATION TRÈS APPRÉCIÉE