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Work hope as a mediator between proactive coping and career planfulness  
in domestic and international university students

A thesis submitted in partial fulfillment of the requirements for the degree of Master of  
Science at Virginia Commonwealth University.

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## Acknowledgment

First and foremost, I am grateful for God's sufficient grace that has sustained me through each step of this thesis project and for His timely provision of support, encouragement, and help through many people all around.

It is with great indebtedness that I express my gratitude to my advisor and the thesis committee chair, Dr. Victoria A. Shivy, whose valuable feedback has greatly shaped and refined this project from the beginning to the end. This thesis would not have come into being without her help. Furthermore, I wish to thank my committee members, Dr. Terri Sullivan and Dr. Jihad Aziz, for their continued support, kind understanding, and great flexibility. I also appreciate the motivating encouragement from Dr. Wendy Kliewer, the director of graduate studies.

It has been a delight to work with Ciara Flythe and Danielle Green, two promising undergraduate students, who helped me enormously with the data collection and entry for the present study.

Last but not least, I would like to thank my parents, who are always loving, and all my friends. I especially wish to thank Andrea Konig for being a source of unwavering support and encouragement. I greatly appreciate the friendship of Anya Moon and her kindness in always sharing her experiences, wisdom, and resources with me. In addition, I would like to express my thankfulness to Eileen Frey, Jennifer Barry, Rebecca Foster, and HaNa Kim for their support in various ways.

## Table of Contents

List of Tables .....	v
List of Figures .....	vi
Abstract .....	vii
Introduction.....	1
Literature Review.....	6
Domestic and International Student Adjustment .....	6
Coping Strategies and Proactive Coping in Student Adjustment .....	9
Career Development in Domestic and International Students.....	13
Career Planfulness .....	15
Work Hope.....	18
Proactive Coping, Work Hope, and Career Planfulness: A Mediation Model ....	20
Statement of Specific Hypotheses .....	23
Method .....	25
Participants.....	25
Procedure .....	26
Measures .....	26
Proactive Coping Scale .....	26
Work Hope Scale .....	27

Career Futures Inventory .....	27
Testing Mediation Effects in Multiple Regression .....	28
Results.....	31
Preliminary Analyses.....	31
Order Effects.....	31
Effects of Demographic Variables.....	33
Intercorrelation Matrix.....	35
Hypothesis Testing.....	35
Between-Group Differences on the Primary Variables .....	35
Relations Between Proactive Coping and Career Variables.....	36
A Mediation Model of Proactive Coping on Career Planfulness .....	37
Discussion.....	42
Primary Findings and Implications.....	43
Relations Between the Primary Variables .....	43
Proactive Coping and Career Development.....	45
Comparison Between Domestic and International Students.....	46
Limitations .....	47
Potential Future Research Directions.....	48
References.....	50
Appendix.....	61
Measurements Used in the Present Study.....	61
Vita.....	64

## List of Tables

	Page
1. Intercorrelation Matrix with the Primary Variables.....	34
2. Descriptive Statistics and Independent Samples <i>t</i> -Tests by Groups.....	35
3. Correlation Between Proactive Coping and Other Variables .....	36
4. Hierarchical Regression Analyses of Career	
Planfulness in Domestic Students (N = 267) .....	38
5. Hierarchical Regression Analyses of Career	
Planfulness in International Students (N = 61) .....	39

List of Figures

	Page
1. Work Hope as the Mediator Between Proactive Coping and Career Planfulness .....	23

## Abstract

### WORK HOPE AS A MEDIATOR BETWEEN PROACTIVE COPING AND CAREER PLANFULNESS IN DOMESTIC AND INTERNATIONAL UNIVERSITY STUDENTS

By J. Juana Wu

A thesis submitted in partial fulfillment of the requirement of the degree of Master of Science at Virginia Commonwealth University.

Virginia Commonwealth University, 2007

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This study applied proactive coping theory (E. R. Greenglass, 2002; R. Schwarzer, 2000) to the domain of career development in domestic and international student transition-to-university. Participants were recruited from a large southeastern state university. No significant between-group differences were identified in the present study. Within both groups, proactive coping, work hope, and career planfulness were positively correlated. The role of work hope as a mediator between proactive coping and career planfulness was tested in domestic and international students respectively. For domestic students, a partial mediation model was established with a direct effect of proactive coping on career planfulness and an indirect effect through work hope. However, work hope fully mediates the effects of proactive coping on career planfulness for international students. Potential implication of the findings and future research directions are discussed.

## Introduction

For many students, the transition from high school to college entails substantial stress (Bloom, 1971; Coelho, 1979; Compas, Wagner, Slavin, & Vannatta, 1986). Upon arrival at a university, many students experience separation from their family and friends while concurrently facing new academic and social challenges.

According to *Open Doors*, a report on international educational exchange (Institute of International Education, 2005), there are over half a million international students enrolled in U.S. colleges and universities. During their study abroad experiences, these students face not only the separation from their family and friends, but also the departure from their home countries. Although international students have much to gain from their experiences abroad, the adjustment can be extremely challenging and difficult for many (Church, 1982; Leong & Chou, 2002; Swagler & Ellis, 2003). As a result, international students may experience intense feelings of confusion, disappointment, loss, isolation, and anxiety upon arrival at U.S. universities (Brislin & Yoshida, 1994).

Both domestic and international students face a spectrum of common challenges during the transition (Baker & Siryk, 1986). However, with their different background and cultures of origin, international students are likely to encounter unique challenges, including language barriers and other cross-cultural adjustment difficulties (Church, 1982; Hechanova-Alampay, Beehr, Christiansen, & Van Horn, 2002; Leong & Chou,

2002; Pedersen, 1991; Ward, Bochner, & Furnham, 2001). Pedersen pointed out that international students have more limited access to resources, such as a social support system for coping, compared to domestic students. Not surprisingly, many international students experience significant problems in adjusting to their life in the U.S. (Shih & Brown, 2000).

Although most university students, including international students (Church, 1982), make a reasonable adaptation to the demands of transition adjustment, it is important to identify and understand factors that impact their abilities to cope successfully, to adjust effectively, and to attain their educational and career-related goals. The present study was designed to explore the connections between coping/adjustment and career development during the transition-to-university process of domestic and international students.

Lazarus and Folkman (1984) defined coping as the cognitive and behavioral efforts an individual takes to manage a stressful situation – including the emotions associated with the situation. It has been proposed that coping plays an important role in university student adjustment (Dyson & Renk, 2006; Folkman & Lazarus, 1985; Lazarus, 1966). More specifically, proactive coping addresses the process that individuals undertake prior to the occurrence of a potential stressor to prevent that stressor or to prepare for it (Aspinwall & Taylor, 1997). The authors proposed proactive coping being distinct from the traditional concept of stress and coping. Goal management, rather than risk management, plays a central and foundational role in proactive coping according to the theory (Greenglass, 2002; Schwarzer, 2000). In addition, proactive coping addresses a

general situation in its entirety, instead of focusing on specific stressors. Thus, proactive coping is especially important among individuals facing stressful transition situations. Previous studies have focused on proactive coping in the context of preparing for aging-related tasks and situations (Bode, De Ridder, & Bensing, 2006; Ouwehand, De Ridder, & Bensing, 2006). It is reasonable to speculate that proactive coping plays an important role in students' transition-to-university experiences.

Given the developmental stage of university students, career development is a salient aspect of their adjustment (Tinto, 1987). Empirical evidence suggests that career development is even more significant in the adjustment of international students (Leong & Chou, 1996; Pedersen, 1991), whose choice to study in the U.S. represents an important initial career decision in itself. Not surprisingly, international students have been found to place a greater emphasis on the academic and career-related aspects of their educational experiences than the social and extracurricular aspects (Leong & Sedlacek, 1989; Spaulding & Flack, 1976). However, very few studies have focused on career development of the international student population (Spencer-Rodgers & Cortijo, 1998). Research linking career development with coping and adjustment is rather limited even for domestic college students. The present study sought to address this limitation by examining the connections between coping, specifically proactive coping, and career development in U.S. domestic and international students.

Among the many career development constructs, the present study focused on career planfulness and work hope. Career planfulness is seen throughout Donald E. Super's (1953, 1990) career development writings regarding career maturity and/or

career adaptability (Savickas, 1997; Super, Thompson, & Lindeman, 1988). More recently, planfulness or concern about one's vocational future has been highlighted as the most important dimension of career adaptability (Savickas, 2005). In the present study, the Career Futures Inventory (CFI; Rottinghaus, Day, & Borgen, 2005) was used to operationally define career planfulness. The concept of work hope stems from applying Snyder's (2000) general theory of hope to vocational psychology (Juntunen & Wettersten, 2006). Hope is a powerful motivational force that drives human behavior (Feather, 1963; Snyder et al., 1991). Similar to career planfulness and proactive coping, work hope is clearly oriented toward individuals' career-related goals and the future. In the present study, work hope was measured by Juntunen and Wettersten's Work Hope Scale.

Super (1955a, 1957) linked vocational adjustment to individuals' general adjustment. Despite the limited body of research that links vocational and developmental psychology (Richardson, 1993), a few studies have focused on the concept of coping in the context of career development (Larson, Toulouse, & Ngumba, 1994; O'Hare & Tamburri, 1986). Empirical evidence supports the connection between career planning – as well as other career development variables – and coping (Eagan & Walsh, 1995; Ebberwein, Krieschok, & Ulven, 2004; Lightfoot & Healy, 2001; Robitschek & Cook, 1999). Furthermore, Aspinwall (1997; Aspinwall & Taylor, 1997) has linked self-regulatory processes, including planning, specifically to proactive coping.

Proactive coping, career planfulness, and work hope are future-focused variables relevant for university students, domestic and international alike, facing challenges in

their transition to university. The present study aimed to provide direct empirical evidence for the association among these variables by applying proactive coping theory (Greenglass, 2002; Schwarzer, 2000) to the career development domain of domestic and international university students in the contexts of their transition to university.

According to the theory, proactive copers have a vision and perceive difficult situations as challenges, rather than as threats. Therefore, they plan for the future, initiate goal-oriented, self-regulatory behaviors, and create growth opportunities. The present study argued that work hope represents the career-related vision possessed by students in proactive coping during their transition to university. Career planfulness can be regarded as an indicator for goal-oriented self-regulatory behaviors in these students. A mediation model was thus proposed with work hope mediating the relationship between proactive coping and career planfulness in domestic and international university students.

In summary, there is rather limited research examining the links between career development and general coping/adjustment in the context of university students' transition to college, especially for international students (Kenny, Blustein, Haase, Jackson, & Perry, 2006; Spencer-Rodgers & Cortijo, 1998). The present study was designed to explore the process of university student adjustment and thus promote further theoretical understanding of the connections between career development and coping/adjustment (Farley, Galves, Dickinson, & Perez, 2005). In addition, increased knowledge potentially leads to practical implications regarding the transition-to-university processes for both domestic and international students.

## Literature Review

The current chapter provides a more detailed review of the literature on the context and the core constructs of the present study. The first section focuses on the transition-to-university process of domestic and international students. The second section examines the importance of coping in general, and proactive coping in particular, in the process mentioned above. The third section centers on the role of career development, especially future-oriented career constructs such as career planfulness and work hope, in university students' adjustment. The fourth section highlights the connections among proactive coping, work hope, and career planfulness in the context of university students' adjustment. Last, specific hypotheses are stated and explained at the end of the chapter.

### *Domestic and International Student Adjustment*

The transition from high school to college has been recognized as a source of substantial risk and vulnerability for undergraduate students (Bloom, 1971; Coelho, 1979; Compas, Wagner, Slavin, & Vannatta, 1986). For many students, it is the first time that they have been separated from family and friends for an extended period. In addition, they are faced with new academic and social challenges. Some of the most common challenges faced in the transition include separation from significant social support (Rice, 1992), loneliness (Cutrona, 1982), homesickness (Fisher & Hood, 1988), personal

responsibilities (e.g., laundry and finance management; Koplik & Devito, 1986), and academic stress (Levitz & Noel, 1989). According to the national surveys on college dropout and degree attainment conducted by the American College Testing program (ACT, 2006), up to 40% of students encounter difficulties in their educational experience and leave college without completing their degrees. Other investigators have found similar results (Gerdes & Mallinckrodt, 1994; Pantages & Creedon, 1978; Rickinson & Rutherford, 1995, 1996; Wintre & Yaffe, 2000).

According to *Open Doors* (Institute of International Education, 2005), over half a million students in U.S. colleges and universities are international students. These students have left not only their homes, but also their home countries, in order to advance their education by studying abroad. There is much to be gained from the study abroad experiences. Usually international students increase their professional knowledge, gain a deeper appreciation for their home cultures, develop a broader perspective of the world, demonstrate increased cognitive complexity, and show an enhanced self-image (Church, 1982; Ward et al., 2001). However, generally speaking, the overall experience of studying abroad is inherently challenging and difficult, as stated by Church and supported by more recent studies (Leong & Chou, 2002; Swagler & Ellis, 2003). International students can experience a profound sense of loss and isolation, intense feelings of confusion and anxiety, and disappointment from disconfirmed expectations prior to arrival (Brislin & Yoshida, 1994).

Both domestic and international students face a spectrum of common problems associated with transition to university, such as meeting academic demands, having

financial concerns, experiencing issues with physical health and loneliness, encountering interpersonal difficulties, and facing general difficulties in adjusting to changes as well as in developing personal autonomy (Baker & Siryk, 1986). In addition to these common problems, international students are likely to encounter unique challenges associated with their culture of origin, such as language barriers and cross-cultural adjustment difficulties (Church, 1982; Hechanova-Alampay, et al., 2002; Leong & Chou, 2002; Pedersen, 1991; Ward et al., 2001). Many international students experience significant problems in adjusting to life in the U.S. (Shih & Brown, 2000). Reportedly, the top five adjustment problems experienced by international students include a lack of English proficiency, inadequate financial resources, problems in social adjustment or integration, difficulties in daily living, and loneliness or homesickness (Manese, Sedlacek, & Leong, 1988). Effective coping with these difficulties is important for domestic and international university students. Nonetheless, it is likely to have a more salient effect on the adjustment of international students in particular.

Furthermore, international students have less access to resources, such as a social support system for coping with the adjustment problems (Pedersen, 1991). They experience extra challenges and stress associated with adjusting to differences between their host and home cultural environments. Many international students struggle with adjusting to the social norms and customs of their host country, adapting to the role as foreigners, establishing new social networks, engaging in effective verbal and non-verbal communication and, at times, coping with interpersonal conflict and discrimination (Church, 1982). These adjustment problems can negatively affect students' academic

performance, their mental and physical health, their levels of life satisfaction, and their attitudes toward host nationals – people native to the host country – in international students (Heikinheimo & Shute, 1986; Wan, Chapman, & Biggs, 1992). It has been shown that international students reported a lesser degree of adjustment than their domestic peers both upon entry and three months into the semester (Hechanova-Alampay et al., 2002).

Generally speaking, reasonable levels of adjustment to the transition process are achieved by most university students, including international students (Church, 1982). Nevertheless it is important to identify potential factors that impact students' abilities to adjust and attain their educational and career-related goals. Such an understanding will not only inform students' coping and adjustment process regarding the transition, but also guide the distribution and utilization of resources available to facilitate the transition.

#### *Coping Strategies and Proactive Coping in Student Adjustment*

Upon arrival at a university, all students face many challenges in pursuit of their educational and career goals. When the transition experience is perceived as negative or even unmanageable, students' academic performance can be compromised (Gillock & Reyes, 1999; Murtaugh, Burns, & Schuster, 1999). Additionally, students can experience decreased motivation (Ames, 1992), increased stress (Carver & Scheier, 1994; Folkman & Lazarus, 1985), and even depression (Peterson & Barrett, 1987). At the same time, many students demonstrate the capacity to make successful adjustment to university life. To adjust successfully to a new environment, individuals must cope with and manage challenges, demands, and problems in their daily life (Simons, Kalichman, & Santrock,

1994). Individuals make behavioral changes and utilize various coping strategies to ensure adjustment (Creer, 1997). Understanding of the coping strategies used by university students is important to inform researchers and practitioners of the transition-to-university process.

Coping is defined as the cognitive and behavioral efforts an individual takes to manage a stressful situation, including the emotions associated with the situation; it has been proposed to play a central role in students' adjustment to college (Dyson & Renk, 2006; Lazarus & Folkman, 1984; Lazarus, 1966). According to Lazarus and Folkman, coping can be categorized into problem-focused coping or emotion-focused coping. Problem-focused coping involves activities geared directly toward changing elements of the stressful situation and tends to be used when individuals believe that they have the ability to impact the stressful situation. Emotion-focused coping involves activities directed toward managing one's internal reactions associated with the stressful situation and is often used when the situation is perceived as uncontrollable. Suls and Fletcher (1985) proposed an alternative classification of coping strategies by using the dimension of approach vs. avoidance. According to the authors, approach coping refers to activities that focus on the stressor as well as the reactions, whereas avoidant coping places focus away from both the stressor and the reactions. However, these two classification systems for coping strategies are not mutually exclusive. Tobin, Holroyd, Reynolds, and Wigal (1989) proposed a hierarchical factor analytic model as a functional conceptualization of coping with both dimensions.

More recently, Aspinwall and Taylor (1997) advocated for conceptual and empirical attention toward proactive coping, distinct from the more traditional focus on stress and coping in general. According to the authors, proactive coping refers to the process of undertaking effort in advance of a potential stressor in order to prevent it, or to prepare for it, before it occurs. Proactive coping is different from coping in the traditional stress and coping literature in that proactive coping (a) is temporally prior to the stressor and more future-oriented, (b) addresses the overall situation instead of particular stressors, and (c) requires a different set of skills and is likely to be accomplished successfully through different activities.

Aspinwall and Taylor (1997) argued that proactive coping produces better adjustment, even in the case of unpreventable stressors. Proactive coping may reduce the intensity of stress experienced during a stressful event (Hobfoll, 1988, 1989). It is likely to take place when the stressor is in its early stages; hence, multiple options for action may be available. Furthermore, individuals who cope proactively are likely to experience low levels of chronic stress. The authors also identified potential disadvantages of proactive coping. For example, when proactive coping is misdirected, it may be ineffective, drain the resource repertoire, or even exacerbate the problem. Nevertheless, Aspinwall and Taylor took their position with the explicit assumption that proactive coping is beneficial to individuals' adjustment in general, above and beyond its potential drawbacks. They pointed out that proactive coping helps individuals eliminate stress before its occurrence by preventing, offsetting, eliminating, reducing, or modifying impending stressful events.

Schwarzer (1999, 2000) proposed a proactive coping theory that focuses on the management of goals as opposed to the more traditional emphasis on risks in the conception of coping. In proactive coping, people tend to have a vision and to see risks, demands, and opportunities in the future, instead of being preoccupied with negative appraisals, such as threat, loss, or harm. Proactive copers perceive demanding situations as challenges for personal growth. Stress is perceived as eustress, or pleasant stress, instead of distress, or unpleasant stress, as distinguished in Selye (1974, 1976). Proactive copers build up general resources to prepare for challenges, promote progress, and assure quality of functioning and goal attainment. Based on the theory, proactive coping is motivated by challenge appraisal rather than threat appraisal and is manifested in skills development, resource accumulation, long-term planning, and other active behaviors (Schwarzer & Taubert, 2002).

The Proactive Coping Inventory (PCI; Greenglass, Schwarzer, Jakubiec, Fiksenbaum, & Taubert, 1999) has been developed to assess different dimensions of coping utilized by individuals during stressful events as well as in anticipation of potential stressors. A unidimensional subscale of the PCI, the Proactive Coping Scale (PCS), frequently has been used as an index for proactive coping (Fiksenbaum, Greenglass, & Eaton, 2006). Proactive coping has been shown to negatively correlate with job burnout and positively correlate to self-efficacy, planning, goal setting, well-being, and psychological functioning (Greenglass, 2002; Schwarzer & Taubert, 2002).

Aspinwall and Taylor (1997) emphasized the merit of further theoretical and empirical focus to assess proactive coping styles, especially among individuals facing

stressful transitions. Several studies have been conducted to examine proactive coping in the context of aging and the elderly population (Bode, et al., 2006; Fiksenbaum et al., 2006; Greenglass, Fiksenbaum, & Eaton, 2006). In these studies, proactive coping was shown to be positively related to social support, while negatively associated with depression, health hassles, and functional disability in the elderly. Although the stressors experienced by university students differ from those experienced by the elderly, both groups are facing a significant, age-related life transition.

Future-oriented self-regulatory behaviors, such as proactive coping and planning, are important for individuals as they take more responsibility for their lives (Bode et al., 2006). As for domestic and international university students, they are tasked with adjusting to a new educational and social environment. Along the way, they learn to plan for their career-related goals as well as other personal goals and to prevent undesirable outcomes in their personal lives.

#### *Career Development in Domestic and International Students*

College student adjustment is closely intertwined with career development (Tinto, 1987). In a recent qualitative study on college students' experiences (Lent et al., 2002), college adjustment problems were known to contribute to difficulties in career-related choice and pursuit. Some students identified personal goal setting as a coping strategy – an attempt to negotiate the barriers they experienced.

Career development plays an even more significant role in international student adjustment. Researchers have pointed out that international graduate students endure considerable personal and psychological costs in order to pursue their career ambitions

and dreams through study abroad, and the achievement of their own career aspirations is their ultimate goal for such pursuits (Leong & Chou, 1996; Pedersen, 1991). Their choice to study in the U.S. itself is an important initial career decision. Not surprisingly, a more salient focus has been found on the academic and career aspects of the college education than on the social and extracurricular aspects in international students (Leong & Sedlacek, 1989; Spaulding & Flack, 1976). For example, Leong and Sedlacek found that Asian international students reported a greater need for career counseling than did their U.S. peers. The authors speculated that these students were attempting to ensure the value of the academic and vocational training they received at home and abroad. Furthermore, they found international students reported greater vocational interests and needs than U.S. students, which was consistent with previous research (Lee, Abd-Ella & Burks, 1981). In a study conducted in Australia, Harman (2003) found that international doctoral students were more optimistic than their domestic peers about their future careers. For example, when compared with Australian students, more international students expected to follow a research career after graduation, were optimistic about their career prospects, and expected their degrees to enhance their career prospects.

Unfortunately, little empirical research assesses the theoretical linkages among career development and student adjustment constructs, especially for the international student population (Kenny et al., 2006; Spencer-Rodgers & Cortijo, 1998). A majority of studies using international student samples have focused on their adjustment difficulties, their preferences for counseling styles, and their social and academic needs (Leong & Chou, 1996; Luzzo & Henao, 1996; Parr, Bradley & Bingi, 1992; Pedersen, 1991). Given

the lack of empirical research and limited understanding in this area, the present study sought to examine the connections between career development and coping/adjustment in both U.S. domestic and international students.

### *Career Planfulness*

Approximately half a century ago, Super (1955a, 1957) proposed a relationship between vocational adjustment and general adjustment, defined as the synthesis of adjustments across important life domains, including the personal, family, vocational, and social spheres. Super illustrated the relation between career development and general adjustment through a case study. He proposed two alternative hypotheses for the underlying mechanisms: (a) successful vocational adjustment may free an individual's resources to cope more adequately with other aspects of living and thus lead to improvement in general adjustment; or (b) general adjustment may be improved by building on an individual's assets and strengths in vocational development.

Super (1955b) proposed the constructs of career development and career maturity to complement the static view of career choice with a more dynamic, developmental perspective. According to Super, career maturity is a construct "used to denote the degree of development, the place reached on the continuum of vocational development from exploration to decline" (p. 153). Career planning was identified, along with obtaining vocational information, as a potential dimension of vocational development. Super later coined the term "planfulness" to denote attitudes toward future planning (Super, 1974; Super & Overstreet, 1960). Career planfulness entails an awareness of the need to make educational and vocational choices and an inclination to prepare for career and

educational decision-making. In his Career Pattern Study and the overarching career maturity model, Super identified planfulness as a basic dimension of career maturity in adolescents. Westbrook (1983) challenged the validity of the career maturity construct given its correlation with other measures of mental ability. There was a heated debate regarding the relationship between career maturity and the general intelligence “g” factor (Savickas, 1984). Ultimately, interest in the construct of career maturity diminished, as other constructs rose to the fore.

Super and Knasel (1981) addressed problems encountered in extending the career maturity model to adulthood: (a) the highly diverse vocational experiences of adults and (b) the process of growth or maturation implied by the term “maturity.” As a result, the authors proposed career adaptability an alternative to career maturity, suitable for adult career development. Nevertheless, planfulness remained a critical component of career adaptability in adults (Savickas, 1997; Super, et al., 1988). Savickas integrated these two career development models by re-defining career adaptability as “the readiness to cope with the predictable tasks of preparing for and participating in the work role and with the unpredictable adjustment prompted by changes in work and working conditions” (p. 254). With this reconceptualization, career adaptability now is an important feature of career development in both adolescence and adulthood. More recently, Savickas (2005) highlighted planfulness or career concern – one’s concern about one’s vocational future – as the most important dimension of career adaptability.

Since the very beginning of its existence, career planfulness has been closely tied to time perspective (Super, 1974, 1983; Super & Overstreet, 1960; Super et al., 1988).

More recently, Savickas (2005) stated that career planfulness or career concern “means essentially a future orientation, a sense that it is important to prepare for tomorrow” (p. 52). Despite the importance of planfulness in these conceptual models as well as in the Career Pattern Study (Super et al., 1957), relatively little attention has been devoted to career planfulness empirically or theoretically (Phillips, 1994).

Rottinghaus and his colleagues developed the Career Futures Inventory (CFI; Rottinghaus et al., 2005) to assess individuals’ optimism beliefs about their career planning and future career development. The theoretical framework of the CFI stems directly from Savickas’s (1997) extension of Super and Knasel’s (1981) career adaptability construct and Carver and Scheier’s (1985; Scheier, Carver, & Bridges, 1994) concept of dispositional optimism. Although the authors did not explicitly link the CFI to career planfulness, the CFI was used as a measure for career planfulness in the present study, given its satisfactory psychometric properties and preliminary evidence for its validity. Rottinghaus and his colleagues identified the CFI as a reliable measure of positive attitudes toward career planning and named one of the three factors of the CFI Career Adaptability. However, in Super’s models, career adaptability is the overarching construct with career planfulness as one of its primary components. The original terminology of the CFI can lead to confusion among readers and researchers. To avoid confusion this study refers to CFI subscales as Career Planfulness – Adaptability (CP-A), Career Planfulness – Optimism (CP-O), and Career Planfulness – Perceived Knowledge (CP-PK).

### *Work Hope*

Work hope was the second career development construct to be examined in this study. It taps into motivational factors of work-related human behavior. In addition, just as career planfulness and proactive coping are future- and goal-oriented, so is work hope. As a powerful motivational force, hope is known to drive human behavior (Feather, 1963; Snyder et al., 1991). The construct of work hope (Juntunen & Wettersten, 2006) stems from applying Snyder's (2000) general theory of hope to the field of vocational psychology. In Snyder's theory, three primary components of hope were identified: goals, pathways to achieve goals, and a sense of agency, which is conceptualized as the motivation and willingness to act toward goal attainment.

Juntunen and Wettersten (2006) argued that Snyder's (2000) hope theory provides a framework to understand individual vocational behavior, including work-related goals, ideas and plans to achieve those goals (i.e., pathways), and motivation to achieve the goals (i.e., agency). Thus the authors proposed the construct of work hope and defined it as "a positive motivational state that is directed at work and work-related goals and is composed of the presence of work-related goals and both the agency and the pathways for achieving those goals" (p. 97). According to the authors, work hope taps into the underlying, motivational, cognitive processes and thus provides valuable information and insight into the work-related motivation of an individual or a group.

The Work Hope Scale (WHS; Juntunen & Wettersten 2006) was developed rationally and expert review was used to ensure content validity. Confirmatory factor analysis (CFA) and maximum-likelihood factor analysis were used to establish the

measurement model. Surprisingly, a single factor was identified and accounted for approximately 41% of the total variance. Hence the three-factor model with goals, pathways, and agency was not supported. With the validation sample of 224 participants, the Work Hope Scale correlated strongly with scales on the Career Decision Self-Efficacy Scale, Short Form (CDSE-SF; Betz, Klein, & Taylor, 1996), work-specific hope (Work Goals Scale; Sympson, 1999), and vocational identity (Vocational Identity scale of My Vocational Situation; Holland, Gottfredson, & Power, 1980). A moderate correlation was found between the Work Hope Scale and optimism measured by Life Orientation Test – Revised (LOT-R; Scheier et al., 1994). The sensitivity of the Work Hope Scale was demonstrated by the significant group mean differences among groups of people at distinct career situations and development stages. Given the motivational focus of the work hope construct, Juntunen and Wettersten proposed work hope as an important construct in explaining both shared and unique variance in vocational behaviors along with other well-researched variables, such as self efficacy and vocational identity as well as other motivational factors. Considering the predictive potential of work hope as a new, promising vocational psychology construct, the Work Hope Scale was used in the present study, despite its failure to support the three-factor model based on the theory.

Proactive coping, work hope, and career planfulness all have implications for how university students, domestic and international alike, face the challenges during their transition to university. Proactive coping addresses the general situation of transition-to-university in its entirety and captures the overall attitude of goal management, instead of risk management, in students. Career planfulness as measured by the Career Futures

Inventory (CFI) taps into individuals' optimism beliefs about their career planning and future career development. Work hope highlights the motivational system of work-related behaviors. Though no direct empirical evidence is available for the relations between career planfulness and work hope, it is reasonable to propose that they are positively correlated with one another. Furthermore, proactive coping should be positively correlated with both work hope and career planfulness, given their shared characteristics.

*Proactive Coping, Work Hope, and Career Planfulness: A Mediation Model*

All three primary variables in the present study – proactive coping, work hope, and career planfulness – have the common ground of a future time perspective. Time perspective, defined as the self-view of one's psychological future and past at a given time in its entirety (Lewin, 1951), has been long identified to have a motivational impact on human behavior (Frank, 1939). Future time perspective is recognized to be especially important for college students as they plan for the future and develop an identity (Nurmi, 1991). Future-oriented individuals set goals, plan their future actions, and persist toward achieving their goals (Gjesme, 1983; Seijts, 1998). The commonality of future orientation suggests associations among proactive coping, work hope, and career planfulness.

Furthermore, such associations are supported by the connection between vocational adjustment and general adjustment proposed by Super (1955a, 1957). Super defined career development as the process of growth that expands one's repertoire for adaptive vocational behavior. He proposed task coping as a measure of one's career developmental progress. Subsequently, the concept of coping has been examined in the context of vocational psychology in various studies. For example, O'Hare and Tamburri

(1986) examined the impact of different coping strategies on the anxiety related to career decision making. They found that coping styles moderate the relationship between state anxiety and career decision making in college students, potentially because ineffective copers may experience too much or too little state anxiety, resulting in hypervigilance or complacency (Janis & Mann, 1977). Robitschek and Cook (1999) found that coping styles predict career self-exploration in college students. In the present study, proactive coping was proposed to predict higher levels of work hope and career planfulness, possibly due to similar mechanisms.

Aspinwall (1997) linked planning specifically to proactive coping and indicated that self-regulatory processes, such as planning, are especially important for proactive coping. Aspinwall and Taylor (1997) pointed out that, despite their independent paths, research on self-regulatory processes and research on coping address similar issues. This is especially true in proactive coping, where the distinctions between the two sets of processes blur, as stressful events have not yet occurred or have not progressed to levels where resources are taxed. Planning and other self-regulatory activities explain a great deal about how individuals anticipate the occurrence of stressful events, enabling people to avoid a potential stressor or to reduce the impact of that stressor. In the context of student transition-to-university process, career planfulness may explain how proactive students adjust to the challenges of new academic and life demands in a university.

The studies reviewed above provide ample evidence for a connection between career development and coping. Individuals' personal adjustment and their career concerns often overlap; career concerns can be a potential source of stress (Niles &

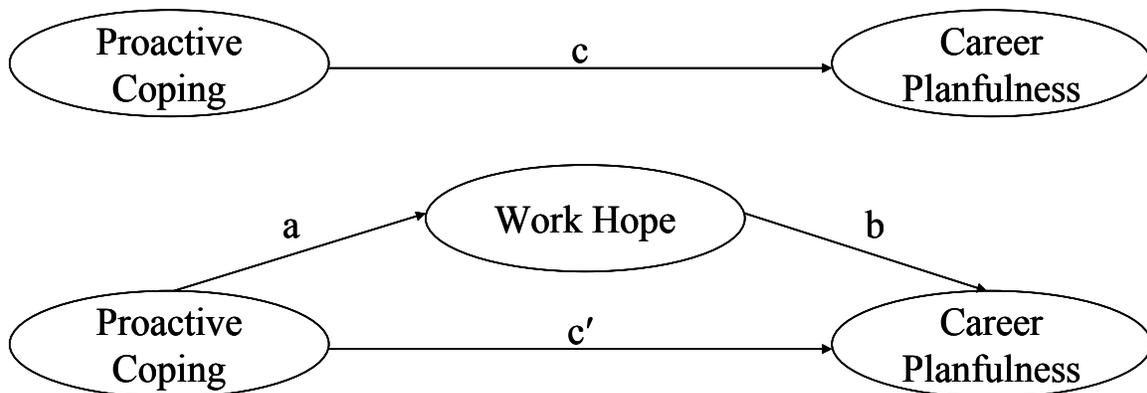
Anderson, 1993). Career planning represents a major developmental task of adolescence and early adulthood (Herr, Cramer, & Niles, 2004; Savickas, 1999; Super, 1990) that helps prepare university students for the workforce and provide meaning for their education. In proactive coping, students prepare for the foreseeable stress associated with transition-to-university. Proactive students perceive difficulties in the transition as challenges, instead of threats. They engage in goal-oriented, self-regulatory behaviors, such as career planning, and build up general resources. Thus it was proposed that proactive students demonstrate a more planful attitude toward their career future.

Furthermore, in his proactive coping theory, Schwarzer (2000; Schwarzer & Taubert, 2002) proposed that in proactive coping people tend to have a vision, which plays a fundamental and motivational role for their goal-oriented attitudes and behaviors. Work hope taps into the positive, motivational cognitive processes directed toward work-related goals including educational goals. In the present study it was proposed that proactive students have higher levels of work hope, which in turn contributes to their more planful attitudes toward their career future. A mediation model was indicated with work hope as the mediator of the relationship between proactive coping and career planfulness. The present study set out to examine the relationships among proactive coping, work hope, and career planfulness and the proposed mediation model in domestic and international students. Such a research endeavor offers a means to further theoretical and practical understanding of the links between career development and general coping/adjustment in the context of the transition-to-university for domestic and international students.

*Statement of Specific Hypotheses*

More specifically, three groups of specific hypotheses were proposed and tested in the present study.

1. It was hypothesized that international students would show greater levels of proactive coping, work hope, and career planfulness than domestic students, given their greater emphasis on academics and career (Leong & Chou, 1996; Leong & Sedlacek, 1989) and their successful adjustment despite greater challenges (Church, 1982). This group of hypotheses was tested using independent samples *t*-tests to detect group differences.
2. It was predicted that proactive coping, work hope, and career planfulness were positively correlated with one another in domestic and international students as they face the adjustment challenges in transition to university. Bivariate correlational analyses were used to examine this second group of hypotheses.



*Figure 1.* Work hope as the mediator between proactive coping and career planfulness.

3. Work hope was hypothesized to mediate the relations between proactive coping and career planfulness (Figure 1) for both domestic and international students. Multiple regression methods were used to test this last group of hypotheses (Baron & Kenny, 1986; Frazier, Tix, & Baron, 2004; Holmbeck, 1997).

Given that there are only limited data available on the relationships among proactive coping, work hope, and career planfulness in the context of domestic and international university student adjustment, the present study and these analyses are considered largely exploratory.

## Method

### *Participants*

Both international and domestic participants were recruited from a large southeastern state university during the spring and summer of 2007.

Two hundred sixty-eight domestic students (65.3% female) participated in the study. They ranged in age from 17 to 52 years ( $M = 19.68$ ,  $SD = 3.14$ ). Most of these participants were between 18 and 20 years of age (80.6%). As for race/ethnicity, 46.6% of the participants self-reported as Caucasian, 27.6% as African American, 14.2% as Asian American, 6.3% as Latino, and 5.2% as *Other*. The vast majority (98.5%) of these participants were undergraduate and 64.9% of them were freshmen. They reported having attended the university from 1 month to 6 years ( $M = 13.0$  months,  $SD = 11.3$  months).

Sixty-six international students participated in the study and 61 provided usable data. Among them, 40 were female (65.6%). Their ages ranged from 18 to 46 years ( $M = 25.05$ ,  $SD = 5.72$ ) and 88.5% of these participants were between 18 and 30 years old. According to self-report, the participants came from 20 different countries. However, China (26.2%) and India (23%) accounted for nearly half of them. Most of the participants were graduate students (55.7%). Their stay in the U.S. ranged from 2 months to 11 years ( $M = 31.90$  months,  $SD = 28.04$  months) and their stay at the current university ranged from 2 months to 5 years and 10 months ( $M = 18.44$  months,  $SD =$

15.79 months). Most of them reported either “good” or “very good” on their English proficiency of reading (93.2%), listening (89.8%), writing (81.4%), and speaking (79.7%).

### *Procedure*

Students were recruited to participate in this study on a voluntary basis. Informed consent was obtained prior to the administration of the paper-and-pencil questionnaire. When appropriate, students received extra credits in their psychology courses as a reward for their participation. The order of the instruments included in the questionnaire was counterbalanced to control for and reduce order effects. Participants also provided demographic and other background information, including gender, age, ethnicity or nationality, marital status, major, academic status, intended career, as well as their length of stay at the university and length of stay in the U.S. for international students.

### *Measures*

Participants responded to four instruments respectively measuring levels of proactive coping, work hope, and career planfulness. Each of the instruments is discussed below.

#### *Proactive Coping Scale*

The Proactive Coping Scale (PCS; Greenglass et al., 1999) is a 14-item subscale of the Proactive Coping Inventory (PCI; Greenglass et al.) and is designed to assess proactive coping. Participants responded to each statement on a 4-point scale ranging from 1 (*not at all true*) to 4 (*completely true*). Sample items include: *I am a ‘take charge’ person; I try to pinpoint what I need to succeed; I often see myself failing so I don’t get*

*my hopes up too high (reverse item)*. The PCS has been tested in various samples and has shown satisfactory psychometric properties. The reported Cronbach's alpha for the PCS ranged from .80 to .86 (Greenglass, 2002). According to the research of Greenglass and her colleagues, proactive coping measured by the PCS was positively correlated with perceived self-efficacy and negatively with job burnout. In the present study, PCS scores produced a Cronbach's coefficient alpha of .75.

#### *Work Hope Scale*

The Work Hope Scale (WHS; Juntunen & Wettersten, 2006) consists of 24 items to assess hope pertaining to work and work-related issues. Participants rated themselves on a 7-point rating scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) in response to the item statements, including the following: *I expect to do what I really want to do at work; I can identify many ways to find a job that I would enjoy; I am confident that things will work out for me in the future; I doubt I will be successful at finding (or keeping) a meaningful job (reverse item)*. Nine of the 24 items were reverse scored. The WHS has shown good internal reliability estimates ( $\alpha = .93$ ; test-retest reliability over 2-week interval,  $r = .90$ ) and demonstrated its construct validity through moderate to strong correlations with career decision-making, work goals, vocational identity, and dispositional optimism. In the present study, the Cronbach's alpha of the WHS was .93.

#### *Career Futures Inventory*

The Career Futures Inventory (CFI; Rottinghaus et al., 2005) is composed of 25 items that are rated on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) to assess levels of career planfulness. A factor analysis of the CFI revealed

evidence for three factors named Career Adaptability (CA), Career Optimism (CO), and Perceived Knowledge of Job Market (PK). Because career adaptability refers to the overarching construct with career planfulness as a primary component in the theoretical model of Super (1974; Super & Knasel, 1981) and Savickas (1997, 2005), it can be confusing to use the original CFI factor names. To avoid such confusion in this study, readers are reminded that, in the present study, the CFI subscales were referred as Career Planfulness – Adaptability (CP-A), Career Planfulness – Optimism (CP-O), and Career Planfulness – Perceived Knowledge (CP-PK). Sample items include the following: *I can adapt to change in my career plans; I am eager to pursue my career dreams; it is easy to see future employment trends*. The authors of CFI reported that Cronbach's alpha internal consistency reliability coefficients ranged from .73 to .87 with 3-week test-retest reliability coefficients from .63 to .85 for its subscales. In addition, evidence for construct validity was supported by significant correlations of the CFI subscales with dispositional optimism, generalized problem solving, Big Five personality dimensions, vocational activity self-efficacy, educational aspirations, career interests, career certainty, and career exploration attitudes and behaviors. In the present study, observed Cronbach's coefficient alphas were .76 (CP-A), .86 (CP-O), and .76 (CP-PK).

#### *Testing Mediation Effects in Multiple Regression*

In the present study, multiple regression methods were used to test the mediation hypotheses proposed (Baron & Kenny, 1986; Frazier et al., 2004; Holmbeck, 1997). According to Holmbeck, there are four steps performed with three regression equations to establish the proposed mediation model. The first step is to show that there is a

significant correlation between the predictor and the outcome. The second step is to show that the predictor is related to the proposed mediator. The third step is to show that the mediator is related to the outcome, while controlling for the effects of the predictor. The final step is to show a significant reduction in the strength of the relation between the predictor and the outcome with the addition of the mediator in the model. A full mediation model will be supported if the correlation between the predictor and the outcome drops to a level that is no longer significantly different from zero after the inclusion of the mediator. If the mediation effect is partial, then the correlation between the predictor and the outcome will remain significant even after the mediator is included. However, a significant decrease of the regression coefficient is still expected. These steps above were carried out to test the proposed mediation model respectively in domestic and international student groups. According to Baron and Kenny as well as Holmbeck, it is rather unusual to encounter full mediation in psychological research studies, though partial mediation is more common.

More specifically, in the present study, there were four conditions necessary to support the mediator role of work hope between proactive coping and career planfulness – adaptability. First, proactive coping must be shown to be significantly associated with career planfulness – adaptability (see Path c in Figure 1). Second, proactive coping must be shown to be associated with work hope (see Path a in Figure 1). Third, work hope must be shown to be significantly associated with career planfulness (see Path b in Figure 1) after controlling for the effects of proactive coping. Last, the strength of the relations between proactive coping and career planfulness – adaptability must be shown to reduce

significantly with the inclusion of work hope in the model by comparing Path  $c'$  to Path  $c$  in Figure 1.

## Results

The following chapter summarizes various findings from a range of data analyses, including preliminary analyses and specific hypothesis testing. Effect sizes (ES) and confidence intervals (CI) are reported, when appropriate, in conjunction with null hypothesis statistical significance testing (NHST).

### *Preliminary Analyses*

Prior to testing the hypotheses proposed for the present study, preliminary analyses were conducted to examine potential order effects between alternative formats of the questionnaire as well as the effects of demographic variables on proactive coping, work hope, and career planfulness.

#### *Order Effects*

Independent samples *t*-tests were used to test for order effects between the different versions of the survey questionnaires in domestic and international participants respectively.

*Domestic student group.* For the domestic participants, the *t*-test results revealed no significant differences between the two alternative-form subgroups in their reported scores on proactive coping (PCS;  $\bar{x}_{\text{diff}} = .07$ , 95% CI = -1.27 – 1.12), work hope (WHS;  $\bar{x}_{\text{diff}} = 2.15$ , 95% CI = -2.44 – 6.73), career planfulness – optimism (CP-O;  $\bar{x}_{\text{diff}} = 1.15$ , 95% CI = -.62 – 2.91), or career planfulness – perceived knowledge (CP-PK;  $\bar{x}_{\text{diff}} = .01$ ,

95% CI = -.59 – .60). However, between the two subgroups, the reported career planfulness – adaptability (CP-A) scores differed significantly,  $\bar{x}_{diff} = 1.57$ , 95% CI = .37 – 2.76,  $p = .010$ . Two potential reasons were identified for the existence of such difference: (a) the different levels of career planfulness - adaptability in the two alternative-form subgroups due to differences in subgroup composition, or (b) the different orders in which the instruments were administered. To examine the first possibility, chi-square tests were used to compare the gender and ethnicity proportions of the two subgroups. No significant differences were found for gender ( $\chi^2 = .002$ ,  $p > .05$ ) or ethnicity ( $\chi^2 = 3.15$ ,  $p > .05$ ). An independent samples  $t$ -test revealed no significant difference in age ( $\bar{x}_{diff} = -.48$ , 95% CI = -1.25 – .28) between the two subgroups. Thus there were no known demographic composition differences between the alternative-form subgroups. Nor was there any evidence or strong indication to attribute the differences in reported career planfulness – adaptability (CP-A) between the two subgroups to the administering orders of the instruments. Further investigation is needed to explain the detected difference.

*International student group.* For the international student participants, the independent samples  $t$ -tests revealed no significant differences between the two alternative-form subgroups in reported scores on proactive coping (PCS;  $\bar{x}_{diff} = .58$ , 95% CI = -2.15 – 3.31), work hope (WHS;  $\bar{x}_{diff} = 3.52$ , 95% CI = -7.07 – 14.11), career planfulness – adaptability (CP-A;  $\bar{x}_{diff} = .37$ , 95% CI = -2.27 – 3.01), career planfulness – optimism (CP-O;  $\bar{x}_{diff} = 3.22$ , 95% CI = -.12 – 6.57), or career planfulness – perceived

knowledge (CP-PK;  $\bar{x}_{\text{diff}} = .19$ , 95% CI = -1.21 – 1.59). Thus, in the present study, the two alternative forms did not result in detectible order effects in the international student group.

### *Effects of Demographic Variables*

The effects of demographic variables, such as gender, age, and ethnicity for domestic students only, were examined. The sample size of the international student group was too small to examine the effects of nationality on proactive coping, work hope, and career planfulness in the present study. In order to reduce family-wise error, the error rate per comparison was adjusted to  $\alpha = .01$ . Therefore, from this point forward, the 99%, instead of 95%, confidence interval (CI) would be reported, unless otherwise specified.

*Gender.* In order to test the effects of gender, independent sample *t*-tests were used in both domestic and international student groups. In domestic students, no gender effects were found on proactive coping (PCS), career planfulness - adaptability (CP-A) and perceived knowledge (CP-PK). However, female domestic students reported significantly higher levels of work hope (WHS;  $\bar{x}_{\text{diff}} = 7.27$ , CI = 1.02 – 13.51,  $p = .003$ ) and career planfulness – optimism (CP-O;  $\bar{x}_{\text{diff}} = 3.64$ , CI = 1.25 – 6.02,  $p < .001$ ). In the international students group, no significant gender effects were found in any of these variables. However, given the small sample size, 40 females and 21 males, the observed power to detect differences was nearly zero. Thus no definite conclusion was drawn regarding the effects of gender on any of the primary variables of interest in the international students group.

*Ethnicity.* A one-way analysis of variance (ANOVA) was conducted to examine the effects of ethnicity on proactive coping, work hope, and career planfulness in domestic students. None of  $F$  values were significant at .01 level. Thus ethnicity was not included in further analyses.

*Age.* Bivariate correlational analyses were used to examine the effects of age in domestic and international students. None of the Pearson correlation coefficients were significant. Thus age was not included in further analyses.

Table 1

*Intercorrelation Matrix with the Primary Variables*

Variables	PCS	CP-A	CP-O	CP-PK	WHS
PCS	---	.41***	.58***	.35**	.73***
CP-A	.60***	---	.57***	.39**	.50***
CP-O	.53***	.53***	---	.54***	.74***
CP-PK	.42***	.49***	.35***	---	.34**
WHS	.59***	.58***	.75***	.41***	---

Note. PCS = Proactive Coping Scale; CP-A = Career Planfulness – Adaptability; CP-O = Career Planfulness – Optimism; CP-PK = Career Planfulness – Perceived Knowledge; WHS = Work Hope Scale. The lower triangle displays the correlation coefficients for the domestic student group ( $N = 265-268$ ). The upper triangle displays those for the international student group ( $N = 60-61$ ).

\*\*  $p < .01$  (2-tailed). \*\*\*  $p < .001$  (2-tailed).

### *Intercorrelation Matrix*

Bivariate correlational analyses were executed for all primary variables in domestic and international students respectively. Pearson correlation coefficients are displayed in Table 1. All primary variables were positively correlated with one another in both groups, despite the small sample size of the international student group. All correlations were significant at .01 level or better.

### *Hypothesis Testing*

#### *Between-Group Differences on the Primary Variables*

Table 2 depicts the means and standard deviations of all the primary variables.

Table 2

#### *Descriptive Statistics and Independent Samples t-Tests by Groups*

	Domestic Students ( N = 265 )		International Students ( N = 60 )		<i>p</i>
	Mean	SD	Mean	SD	
Age	19.68	3.14	25.05	5.72	< .001
PCS	43.94	4.96	43.26	5.29	ns <sup>†</sup>
WHS	138.00	19.06	132.40	20.56	.042
CP-A	43.68	5.00	41.93	5.11	.014
CP-O	42.15	7.35	40.91	6.67	ns <sup>†</sup>
CP-PK	10.20	2.47	9.87	2.68	ns <sup>†</sup>

<sup>†</sup> ns = Not Significant

Independent samples *t*-tests were used to examine group differences between domestic and international students across all these variables as well as age. Results of these comparative analyses are presented in Table 2. Other than age, no additional between-group differences were found to be significant at .01 level, which may be at least partially due to the limited statistical power to identify potential between-group differences, given the small sample size of the international student group. According to the preliminary analyses above, age was not correlated with any of the primary variables.

#### *Relations Between Proactive Coping and Career Variables*

As shown in Table 1, all the primary variables were correlated with one another, reflected by Pearson correlation coefficients (*r*), at .01 significance level or better in both domestic and international students. Nevertheless, further analyses were focused on the adaptability dimension of career planfulness (CP-A), given its connection with coping and the between-group *t*-test results, instead of the other two dimensions of career planfulness.

Table 3

#### *Correlation Between Proactive Coping and Other Variables*

	Domestic Students ( N = 267 )			International Students ( N = 61 )		
	<i>r</i> ( <i>r</i> <sup>2</sup> )	99% CI	<i>p</i>	<i>r</i> ( <i>r</i> <sup>2</sup> )	99% CI	<i>P</i>
WHS	.59 (.35)	.48 – .69	<.001	.73 (.53)	.53 – .85	<.001
CP-A	.60 (.36)	.49 – .69	<.001	.41 (.17)	.10 – .65	.001

For domestic students, scores on proactive coping were significantly and positively related to higher scores on work hope and career planfulness – adaptability, accounting for 35.2% and 35.6% of the variance in these measures respectively. A similar set of findings was observed for proactive coping in international students, accounting for 53.4% and 16.6% of the variance. Thus both domestic and international students with greater levels of proactive coping are likely to report higher levels of work hope and career planfulness. More detailed parameter estimates are displayed in Table 3.

#### *A Mediation Model of Proactive Coping on Career Planfulness*

Work hope was hypothesized as the mediator between proactive coping and career planfulness – adaptability in both domestic and international students. As stated previously in the method chapter, the mediation model was tested in multiple regression analyses, following the four-step approach (Baron & Kenny, 1986; Frazier et al., 2004; Holmbeck, 1997).

Pearson correlations between proactive coping and career planfulness – adaptability as well as work hope (see Tables 2 and 3) provided support for the first and second conditions in domestic and international students. In order to test the last two conditions, hierarchical regression analyses were run in which career planfulness – adaptability was regressed on proactive coping and work hope entered at the second block in domestic (Table 4) and international (Table 5) students. According to the results, work hope was significantly associated with career planfulness – adaptability in domestic ( $\beta = .35, p < .001$ ) and international students ( $\beta = .43, p = .01$ ), after controlling for the effects of proactive coping.

As for the last step, in international students, the relations between proactive coping and career planfulness – adaptability became nonsignificant ( $\beta = .09, p = .58$ ) after controlling for the effect of work hope. Thus a full mediation model was supported between proactive coping and career planfulness – adaptability with work hope as the mediator in international students (see Table 5).

For domestic students, the relationship between proactive coping and career planfulness – adaptability remained significant ( $\beta = .39, p < .001$ ), even after the inclusion of work hope in the model. The last criterion of mediation effects requires a significant reduction in the relationship between proactive coping and career planfulness after adding work hope, which is equivalent to a significant indirect effect of proactive

Table 4

*Hierarchical Regression Analyses of Career Planfulness in Domestic Students (N = 267)*

Variable	<i>B</i>	95% CI	$\beta$	<i>p</i>
Step 1				
PCS	.61	.51 – .70	.60	< .001
Step 2				
PCS	.40	.29 – .51	.39	< .001
WHS	.09	.06 – .12	.35	< .001

Notes.  $R^2 = .356, F(1, 265) = 146.39, p < .001$  for Step 1;  $R^2 = .434, \Delta R^2 = .078, \Delta F(1, 264) = 36.27, p < .001$  for Step 2.

coping on career planfulness – adaptability via work hope. The  $z$ -score of the indirect effect was calculated using the appropriate formulas (MacKinnon & Dwyer, 1993; Sobel 1982, 1986).

The more detailed steps for the calculation were described as follows: work hope was regressed on proactive coping to obtain the regression coefficient  $a$  (see Path a in Figure 1). Three cases were identified as outliers beyond 3 standard deviations by casewise diagnostics. The same regression analysis was re-run after excluding those

Table 5

*Hierarchical Regression Analyses of Career Planfulness in International Students (N = 61)*

Variable	$B$	95% CI	$\beta$	$p$
Step 1				
PCS	.39	.16 – .62	.41	.001
Step 2				
PCS	.09	-.23 – .41	.09	.58
WHS	.11	.024 – .19	.43	.01

Notes.  $R^2 = .166$ ,  $F(1, 59) = 11.72$ ,  $p = .001$  for Step 1;  $R^2 = .252$ ,  $\Delta R^2 = .086$ ,  $\Delta F(1, 58) = 6.66$ ,  $p = .01$  for Step 2.

three outlier cases from the data. The regression equation and the regression coefficient are presented below.

$$\text{WHS} = i_1 + a\text{PCS} + e_1 \quad (i_1 = \text{intercept constant}; e_1 = \text{error})$$

$$a = 2.26, \text{SE}_a = .18, 95\% \text{ CI} = 1.91 - 2.61$$

Next, the previous hierarchical regression analysis in which career planfulness – adaptability was regressed on proactive coping and work hope was also re-run after excluding the three outlier cases. The model characteristics remained after the exclusion with only minor variations in the parameter estimates. The regression equation and the regression coefficient of work hope are present below.

$$\text{CP-A} = i_2 + c' \text{PCS} + b\text{WHS} + e_2 \quad (i_2 = \text{intercept constant}; e_2 = \text{error})$$

$$b = .10, \text{SE}_b = .02, 95\% \text{ CI} = .07 - .13$$

Then the regression coefficients and their standard errors were put into the Sobel (1982, 1986) formula. The calculated  $\text{SE}_{ab}$  was .04 in domestic students for the present study. Finally,  $z_{ab}$  was calculated by dividing the mediated effect ( $ab$ ) by its standard error  $\text{SE}_{ab}$  (MacKinnon & Dwyer, 1993). The calculated  $z$  score for the mediated effect ( $z_{ab}$ ) was 5.70, which substantially exceeded the critical  $z$ -score of 2.33 at .01 significance level (one-tailed). Thus all four criteria identified were satisfied for domestic students. It was concluded that work hope partially mediated the relationship between proactive coping

and work hope in domestic students during their transition to university. To summarize, proactive coping and work hope together accounted for 25.2% of the variance in career planfulness – adaptability in domestic students. In domestic students, the total effect of proactive coping on career planfulness – adaptability ( $c = .61$ ) includes two parts: (a) an indirect effect ( $ab = .23$ ) mediated through work hope, and (b) a direct effect ( $c' = .38$ ) without the mediation of work hope. However, work hope fully mediates the effect of proactive coping on career planfulness – adaptability and there is no direct effect of proactive coping in international students after the inclusion of work hope in the model.

## Discussion

Although university students have been the most frequently studied population in counseling psychology research, few prior studies have specifically linked career development to students' general coping and adjustment (Lent et al., 2002; Robitschek & Cook, 1999). Even fewer efforts have investigated career development and its implications on general coping and adjustment in international students (Chirkov, Vansteenkiste, & Tao, 2007; Leong & Sedlacek, 1989; Spencer-Rodgers, 2000). The present study provided empirical evidence which supports the connections among career development and general coping as well as adjustment implied by coping in domestic and international students. More specifically, proactive coping theory (Greenglass, 2002; Schwarzer, 2000) was applied to the domain of career development in the context of students' transition-to-university process. The present study examined the levels of and relationships among proactive coping, work hope, and career planfulness in domestic and international students, respectively. Comparison analyses were conducted to identify differences between the two groups.

The remainder of this chapter provides a more detailed discussion of the specific findings from the present study. It is divided into three sections. The first one focuses on the findings and their proximal implications as well as more distal ones. The second

examines the limitations of the present study. The third section presents potential future research directions as informed by the present study findings.

#### *Primary Findings and Implications*

The present study extended the current literature in several ways. First, it demonstrated the relationships between proactive coping measured by Proactive Coping Scale (PCS; Greenglass et al., 1999), work hope measured by Work Hope Scale (WHS; Juntunen & Wettersten 2006), and career planfulness measured by Career Futures Inventory (CFI; Rottinghaus et al., 2005). Second, the present study supported proactive coping theory (Greenglass, 2002; Schwarzer, 1999, 2000), applied it to the field of vocational psychology, and thus connected career development with general coping and adjustment in both domestic and international university students. Third, the comparison between domestic and international students highlighted the similarities and differences between the two groups.

#### *Relations Between the Primary Variables*

Consistent with the proposed hypotheses, the findings indicated that higher levels of proactive coping in domestic and international students are significantly and positively associated with work hope and all three dimensions of career planfulness. Even though no prior studies could be identified that directly focused on the relationships among these specific psychological constructs, these findings are nevertheless consistent with other studies that have revealed the relationships between effective, positive action coping and individuals' planful attitudes toward career-related issues (Ebberwein et al., 2004; Lightfoot & Healy, 2001), and other career development variables (Eagan & Walsh,

1995; Larson et al. 1994; Robitschek & Cook, 1999). In addition, findings from the present study are congruent with conceptual papers on proactive coping theory and model (Aspinwall & Taylor, 1997; Greenglass, 2002). These authors suggest that people develop a vision and engage in planful activities in the services of anticipating, detecting, and managing potential stressors, even though presently most literatures on coping have evolved independently from the study of planning. The present study explicitly hypothesized and examined the connections between proactive coping and the planful attitude/activity with regard to career in domestic and international university students. The findings showed that proactive students, who anticipate and manage potential stressors before their emergence, have a more optimistic and planful attitude toward their future career and probably engage more planful activities. Thus promoting proactive coping behaviors might be considered and evaluated as a potential component of career counseling and practice when appropriate.

The findings established a connection between work hope and career planfulness within the field of vocational psychology. The present study provided empirical evidence for the association, which makes intuitive sense based on the strong future orientation component in both work hope and career planfulness. Furthermore, the moderate to strong correlations between work hope and career planfulness suggest that, despite their apparent connectedness and similarities, work hope and career planfulness are distinctly different psychological constructs with shared variance and unique variance of their own. According to Juntunen and Wettersten (2006), work hope provides researchers with important information and understanding into one's motivation to engage in work-related

activities. It explains variance in work-related behaviors that overlaps with but still unique from that explained by various career development variables, including career planfulness, self-efficacy, and vocational identity. The unique variance accounted by work hope indicates its incremental validity, which need to be assessed in future studies.

### *Proactive Coping and Career Development*

Findings from the present study provided empirical support for proactive coping theory (Greenglass, 2002; Schwarzer, 2000) in the domain of career development during the transition-to-university process of domestic and international students. The proposed mediation model stems from applying proactive coping theory to university student career development, identifying work hope as the vision component and career planfulness as an indicator of the goal-oriented, self-regulatory process. The mediation model was supported in domestic and international students. These findings provided additional information for research on coping and career planning. The connections between coping and career planning were highlighted, despite the largely separate research and literatures in these two domains. By considering the effects of proactive coping, the present study broadens the list of factors with influences on career-related activities and processes. The mediation model reflects the reality that coping processes and career development processes are tightly interwoven in real life. It indicates the importance of future integrations of research in these two domains. Given its effect on work hope and career planfulness, proactive coping merits consideration in the practice of career counseling and intervention programs.

*Comparison Between Domestic and International Students*

In the present study, no significant group differences were found in the reported levels of proactive coping, work hope, and career planfulness between domestic and international university students. Due to the small sample size of international students group, the statistical powers of these between-group comparison analyses were rather limited. The Type II error rates were high and the analyses may have failed to detect an existing between-group difference. Further investigations are needed with a sufficiently large sample of both domestic and international students.

However, an intriguing difference found in the present study is that work hope fully mediates the relationship between proactive coping and career planfulness in international students, but only partially mediates the relationship in domestic students. Hence these findings suggest that beyond the indirect effect of proactive coping through work hope, proactive coping has a direct impact on career planfulness in domestic students. However in international students, the effect of proactive coping on career planfulness is almost entirely through its impact on work hope. These findings hinted at the possibility that the nomological network of career planfulness might be structurally distinct in domestic and international students. Further investigation is needed to verify this structural difference and to account for its existence. It then could be useful to identify potential additional factors contributing to the relationship between proactive coping and career planfulness in domestic students. For example, it might be that proactive domestic students engage in more social support seeking, identify and interact

with role models, and build up social resources, which in turn may promote greater levels of career planfulness.

### *Limitations*

Several important limitations to the present study are addressed below. First, there are a few sampling-related issues. As noted earlier in the results, a major concern was the small sample size of international students and, consequently, the poor statistical power for the detection of statistical differences. In addition, the international student group was highly heterogeneous, with 20 countries represented. Most recent research efforts now focus on a particular subgroup of international students from the same country or culture background (Swagger & Ellis, 2003; Wang & Mallinckrodt, 2006a, 2006b), which helps reduce error variance. The great variability of the students in length of stay at the university, as well as in the U.S. for international students, also contributed to the heterogeneity of the sample. Furthermore, the domestic and international student groups were nonequivalent, with most of the international students being enrolled in graduate studies, whereas most of the domestic students were first-year undergraduates.

Second, the present study is largely exploratory in nature. The mediation model was proposed based on proactive coping theory (Greenglass, 2002; Schwarzer & Taubert, 2002). Despite the implicit causal hypothesis of the theory as well as the mediation model, no causal conclusions can be made given the cross-sectional and correlational design of the present study. However, the findings of the study provided empirical support for the mediation model and thus proactive coping theory. Further endeavors with an intervention component may be worth pursuing given the present findings. In addition,

the mediation model will be further supported and strengthened by a cross-validation study with a different sample independent from the present study.

Finally, the Career Futures Inventory (CFI; Rottinghaus et al., 2005) and Work Hope Scale (WHS; Juntunen & Wettersten, 2006) are relatively newly developed scales and thus have limited validity studies and evidence. Nonetheless, both instruments demonstrated reasonable reliability and validity in the present study.

#### *Potential Future Research Directions*

Based on the identified limitations of the present study, further studies are needed to elaborate and consolidate the current findings. For example, in the case of the mediation model, studies are needed to evaluate alternative equivalent models. Such models are not proposed in the present study based on the theory, but they could explain the data equally well as the proposed mediation model. Similarly, it is also desired to cross validate the proposed model with a different sample. In addition, intervention studies may be designed to draw causal conclusions implicitly indicated by the mediation model. Such studies can be used to examine the malleability of proactive coping and its effects on work hope and career planfulness, as well as adjustment.

Some limitations of the present study are sampling related, for example the inadequate statistical power of the group comparison analyses. Thus it is important to have a sufficient sample size, especially for international students, in future studies so that the statistical analyses will have reasonable power to detect differences and thus produce more credible results that are less ambiguous to interpret. Given the distinctly different backgrounds of the international students, it is recommended that future studies

will focus on a subgroup of international students from the specific country or cultural group. To address the group heterogeneity due to length of stay the university, future studies can focus on students in their first year upon arrival at a university.

In the present study, the proposed model places proactive coping style upstream to career planfulness. Yet, it will be interesting to examine if greater levels of career planfulness – a planful attitude toward career – predicts higher levels of proactive coping behaviors, which in turn reinforces the proactive coping style. Thus a recursive model could be proposed and subsequently tested through empirical research studies.

Furthermore, future studies can extend beyond the present study by examining potential upstream predictors, that is, other factors that may contribute to greater levels of proactive coping, work hope, and career planfulness. Likewise, it is of research interest and value to identify and investigate potential downstream outcome variables, that is, factors that can be predicted by greater levels of proactive coping, work hope, and career planfulness. For example, what are the effects on higher levels of proactive coping, work hope, and career planfulness on student adjustment? A follow-up of the present study measuring adjustment will provide empirical evidence needed to answer this question. There are unlimited intriguing research questions to ponder and, for the scientific mind, to design appropriate empirical studies and to quest for the empirically supported answers.

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## Appendix

### Measurements Used in the Present Study

#### Proactive Coping Scale (Greeenglass et al., 1999)

The following statements deal with reactions you may have to various situations. Please use the scale below to indicate how true each of the statements is for you.

- |                 |             |               |                 |
|-----------------|-------------|---------------|-----------------|
| -----           | -----       | -----         | -----           |
| Not At All True | Barely True | Somewhat True | Completely True |
1. I am a "take charge" person.
  2. I try to let things work out on their own.
  3. After attaining a goal, I look for another, more challenging one.
  4. I like challenges and beating the odds.
  5. I visualize my dreams and try to achieve them.
  6. Despite numerous setbacks, I usually succeed in getting what I want.
  7. I try to pinpoint what I need to succeed.
  8. I always try to find a way to work around obstacles; nothing really stops me.
  9. I often see myself failing so I don't get my hopes up too high.
  10. When I apply for a position, I imagine myself filling it.
  11. I turn obstacles into positive experiences.
  12. If someone tells me I can't do something, you can be sure I will do it.
  13. When I experience a problem, I take the initiative in resolving it.
  14. When I have a problem, I usually see myself in a no-win situation.

#### Work Hope Scale (Juntunen & Wettersten, 2006)

Please indicate the number that best describes your level of agreement with the following statements using the scale below.

- |                      |                        |                      |         |                   |                     |                   |
|----------------------|------------------------|----------------------|---------|-------------------|---------------------|-------------------|
| -----                | -----                  | -----                | -----   | -----             | -----               | -----             |
| Strongly<br>Disagree | Moderately<br>Disagree | Slightly<br>Disagree | Neutral | Slightly<br>Agree | Moderately<br>Agree | Strongly<br>Agree |
1. I have a plan for getting or maintaining a good job or career.

2. I don't believe I will be able to find a job I enjoy.
3. There are many ways to succeed at work.
4. I expect to do what I really want to do at work.
5. I doubt my ability to succeed at the things that are most important to me.
6. I can identify many ways to find a job that I would enjoy.
7. When I look into the future, I have a clear picture of what my work life will be like.
8. I am confident that things will work out for me in the future.
9. It is difficult to figure out how to find a good job.
10. My desire to stay in the community in which I live (or ultimately hope to live) makes it difficult for me to find work that I would enjoy.
11. I have the skills and attitude needed to find and keep a meaningful job.
12. I do not have the ability to go about getting what I want out of working life.
13. I do not expect to find work that is personally satisfying.
14. I can do what it takes to get the specific work I choose.
15. My education did or will prepare me to get a good job.
16. I believe I am capable of meeting the work-related goals I have set for myself.
17. I am capable of getting the training I need to do the job I want.
18. I doubt I will be successful at finding (or keeping) a meaningful job.
19. I know how to prepare for the kind of work I want to do.
20. I have goals related to work that are meaningful to me.
21. I am uncertain about my ability to reach my life goals.
22. I have a clear understanding of what it takes to be successful at work.
23. I have a difficult time identifying my own goals for the next five years.
24. I think I will end up doing what I really want to do at work.

Career Futures Inventory (Rottinghaus et al., 2005)

Please use the scale below to indicate your level of agreement with the statements regarding your current thoughts and feelings about your approach to planning your career. Please respond as honestly as you can. There are no right or wrong answers.

-----

Strongly Disagree    Disagree            Neutral            Agree            Strongly Agree

1. I get excited when I think about my career.
2. I am good at adapting to new work settings.
3. Thinking about my career inspires me.
4. I can adapt to changes in my career plans.
5. I am good at understanding job market trends.
6. Thinking about my career frustrates me.
7. I can overcome potential barriers that may exist in my career.
8. It is difficult for me to set career goals.
9. I enjoy trying new work-related tasks.
10. It is difficult to relate my abilities to a specific career plan.

11. I can adapt to change in the world of work.
12. I do not understand job market trends.
13. I understand my work-related interests.
14. I will adjust easily to shifting demands at work.
15. I am eager to pursue my career dreams.
16. Others would say that I am adaptable to changes in my career.
17. I am unsure of my future career success.
18. My career success will be determined by my efforts alone.
19. It is easy to see future employment trends.
20. It is hard to discover the right career.
21. I tend to bounce back when my career plans don't work out quite right.
22. Planning my career is a natural activity.
23. I am rarely in control of my career.
24. I will definitely make the right decisions in my career.
25. I am not in control of my career success.

### Vita

J. Juana Wu was born on October 29<sup>th</sup>, 1979 in Shangcheng, Henan, P. R. China. Her legal name is Juan Wu. She is a citizen of the People's Republic of China. She graduated from University of Science and Technology of China (USTC), Hefei, Anhui, P. R. China in 2000 with a Bachelor of Science degree in Biology. She attended the Ohio State University (OSU), Columbus, Ohio, U.S., and graduated in 2003 with a Master of Science degree in Molecular, Cellular, and Developmental Biology (MCDB). She has been attending Virginia Commonwealth University (VCU) since August 2004.