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PREDICTORS OF ACCULTURATIVE STRESS FOR INTERNATIONAL STUDENTS IN

THE UNITED STATES

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Abstract

International students in the United States are confronted with a wide range of challenges and difficulties as they move to a new country and need to adapt to a new cultural, social, and academic environment. This study examined the relationship between acculturation orientation, or how these cultural changes are addressed, sources of social support, and the level of acculturative stress these students experience. Data was collected using an on-line survey from international students at six public universities in Missouri, Oklahoma, Texas, and Iowa. Statistical analysis was conducted on the data collected from the 648 students who participated in the study. Descriptive statistics, group comparisons, and a regression model were employed to summarize and test the study's hypotheses. Correlational analysis indicated that lower levels of acculturative stress were associated with both positive cultural identification with both the home and host culture, as well as the presence of a wide network of social support, while increased levels of acculturative stress were found to be related primarily to higher levels of perceived discrimination and higher levels of mood and anxiety disturbances. Analysis of group differences found that students with positive home and host cultural identifications, as well as students with broad-based social support, experienced statistically significant lower levels of acculturative stress than other groups. A prediction model was developed, although only perceived level of English language ability, perceived discrimination, levels of mood and anxiety disturbance, positive host culture identification, and host country social support were found to be statistically significant predictors. The study findings highlight the importance of both positive cultural identification with both the home and host culture, as well as the positive association with higher levels of social support on mitigating the level of acculturative stress international students experience. The findings have implications for mental health professionals counseling

international students in the United States to better understand and thereby develop more

effective therapeutic interventions in their work with international students. Suggestions for

future research are also indicated.

Dedication

This dissertation is dedicated to all those who make the difficult decision to take the difficult step of leaving home to explore new lands and people, as well as those caring individuals who provide care and support along the way. By leaving home and venturing into the larger world, a small world can't help but expand, which in turn leads to a larger world full of countless possibilities and opportunities. May we all forever benefit from these courageous souls and their transformative adventures.

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I am grateful to my parents for having consistently encouraged and supported me over the years, particularly all those years ago when I made that fateful decision to spend my junior year abroad in Spain. I am slowly coming to understand how much love and caring that took to send me off into the wilds of a foreign country at such a tender age. Needless to say, it changed the course of my life, and I will be forever grateful.

Finalmente arriviamo a Francesca, Matteo e Federica. Non posso neanche comminciare a ringraziarvi per tutto l'appoggio di questi ultimi anni. Francesca, non so dove sarei senza di te. Mi hai aperto un mondo e ti ringrazio per tutto il bene che mi ha portato nostra vita insieme. Voi tre mi avete cambiato la vita per sempre. Certo che ci sono stati momenti dificili lungo questa strada pero' con la vostra pazienza ho avuto la forza di arrivare a questo punto. Grazie ancora e vi voglio un mondo di bene.

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Chapter 1: Introduction

There are many reasons people leave their home country to travel around the world. Among those travelers who choose to leave home, many are tourists who want to see and experience new places, while others go for economic or educational reasons in order to provide a better life for themselves and their loved ones (Suarez-Orozco & Suarez-Orozco, 2001). At the same time, there are many people who do not choose to leave home but instead flee war, natural disaster, or political unrest (Portes & Zhou, 1993). In both these cases, however, most travelers find that traveling to another country and being in a new place can be a challenging and difficult experience. Even previously mundane activities like catching a bus, going out to eat, or shopping for clothes can be confusing and frustrating when the currency is different, the language unfamiliar, and the food unpredictable (Storti, 2001). Although a great deal depends on the individual circumstances, choosing to leave home to experience a new place and culture can lead to an exciting, or even illuminating, adventure (Cousineau, 1998). Even so, in the midst of all the excitement and newness, there can be confusion and frustration as one discovers that the way things work back home do not necessarily apply and that adapting to a new culture means making accommodations and learning to make sense of a new life in a new place (Pedersen, 2002).

If we consider the wide range of intentions that bring visitors to the United States with tourists on one end and immigrants on the other, we can locate international university students as occupying the space in the middle (Suarez-Orozco, Suarez-Orozco, & Todorova, 2008). For this group of international travelers, the wide variety of motives and intentions range from a short study or tourist visit to the hope that enrolling in an American university will lead to settling permanently in the United States (Zhou, 1997). Unlike other visitors, international

students face the unique challenge of being thrust into immediate and direct contact with the American educational system (Spradley & Phillips, 1972). In addition to the great developmental changes all university students go through (Lefkowitz, 2005), international students need to deal with a whole host of additional changes as they begin their studies in a new cultural and linguistic environment. Regardless of how different their home educational system is, almost immediately these students from around the world are expected to fit in academically, socially, and linguistically, while being held to the same grading and performance standards their American classmates are (Hechanova-Alampay, Beehr, Christiansen, & Van Horn, 2002). Even so, although many international students do well in their studies in the United States, many international students struggle with the academic, social, financial, and interpersonal difficulties studying in a new land entails (Pedersen, 1991a).

International Students and the Difficulty of Studying in the United States

Although all university students are confronted with a wide range of challenges – academic demands, life away from the security of home and family, a new sense of personal independence, time management, and the increased demands for responsibility (Kaczmarek, Matlock, Merta, Ames, & Ross, 1994; Pett & Johnson, 2005; Sharkin, 2006) – the 670,000 international students currently in the United States (Bhandari & Chow, 2009) are also confronted with additional difficulties arising from studying in a new academic environment in a new cultural sphere (Misra, Crist, & Burant, 2003; Pedersen, 1991a; Searle & Ward, 1990; Wilton & Constantine, 2003). For most international students there is the most obvious difference of needing to study in a foreign language, which, while of primary importance, ends up being only one facet associated with overcoming the demands of the new academic environment. Added to this, there are the challenges associated with being far from the support

of family and friends from back home, as well as other common challenges such as a loss of social status and changes in food, weather, clothing, social customs, and religious practices (Althen, 1991).

From a slightly different perspective, Leong (1984) categorized the challenges international students face as problems common to all college students, problems associated with being away from home for a long time, and problems unique to international students. As difficult as it may be for all students to start university level studies, international students simply have additional sets of problems and challenges to tackle. They are called upon to improve their English skills, make new friends, and gain a better understanding of American culture; in other words, they must "simply" learn to function in American society in a very short period of time (Lin & Yi, 1997; Swagler & Ellis, 2003). Taking all of these factors into consideration, it is little wonder many international students encounter difficulties in their studies as they navigate the process of adapting to living in a new academic environment in a different country.

Clearly, this vast array of stressors goes beyond the typical range encountered by students who stay in their home countries for their studies. These difficulties and challenges are a different type of stressor that arises out of the immediate experience of encountering a range of cultural differences between home and the United States. The collection of these stressors that originate from this change is commonly referred to as "acculturative stress" (Berry, 1980). The different ways that individuals employ to deal with these changes are referred to as "acculturation orientations" (Berry, 1980), which have, in turn, been found to be closely related to the amount of stress and difficulties that are experienced by individuals who are in the process of moving into a new cultural sphere (Dona & Berry, 1994; Zheng & Berry, 1991). Another important consideration in how international students deal with these challenges is an initial lack

of friends and other supports. Moving far from home means not having ready access to this social support, which has long been identified as an important resource in coping with stress (Cohen & Willis, 1985). An important component in assisting with the transition thus involves making new friends and developing new social supports (Hayes & Lin, 1994). The purpose of this study is to gain greater insight and obtain a better understanding of how international students' stress is related to their cultural adaptation patterns and the source of their social support, as well as to develop a model for predicting international students' acculturative stress.

From yet another perspective, another important consideration is the overall lack of information and insight into the important strengths and resources international students bring with them to the United States. As counselors, our overall research efforts have been more directed at investigating problems and difficulties without expending as much effort on investigating the resources and qualities that make for successful international students (e.g. Chapdelaine & Alexitch, 2004; Clark-Oropeza, Fitzgibbon, & Baron, 1991; Misra & Castillo, 2004). Clearly, an emphasis on strengths and resources is an important consideration in our work as helping professionals as we develop and carry out positive and beneficial counseling interventions in collaboration with our international student clients in their efforts to overcome the difficulties associated with acculturative stress.

Key Concepts

There are a number of key concepts used in this study that will be used with specific definitions:

"International Student" – For the purposes of this study, "international student" will refer to those university students who have come to the United States for the purpose of pursuing

higher education. Although they may have personal intentions to remain longer, only those students who are in the United States with a student visa will be included in this study.

"Culture" – In an effort to be inclusive and to allow for the accommodation of all aspects of cultural identity, this study uses the concept of culture in the broad sense of the term, involving "demographic variables (e.g., age, sex, place of residence), status variables (e.g., social, educational, economic), and affiliations (formal and informal), as well as ethnographic variables such as nationality, ethnicity, language, and religion" (Pedersen, 1991b, p. 7). Although there may seem to be a tendency to focus attention on national identity, efforts were made to also include other important aspects such as religion, ethnicity, race, and sexual orientation, as is possible within limits of the study.

"Acculturation" –The process of individual adjustment and adaptation that occurs when an individual leaves his or her home culture and moves to a new place that is host to a new and different culture (Berry, 1980).

"Acculturation Orientation" - Acculturation orientation is the strategy utilized to address the changes that are experienced during the acculturation experience (Berry, 1980). According to Berry's conceptualization, acculturation orientation is composed of the sum total of an individual's attitudes, values, and behaviors with regards to both the host culture as well as the home culture. The acculturation is centered around two questions that are posed to intercultural travelers: (a) is it of value to maintain your home cultural identity?, and (b) is it of value to maintain relationships with the host culture? These two questions are addressed separately along two different axes with the home country culture on one axis and the host culture on the other. Individuals can then categorized into one of the four resulting categories, which are associated with a specific orientation. Also referred to as acculturation "modes" or "strategies," these

acculturation orientations identify an individual's preferences and priorities in the experience of

encountering a new culture (Arends-Toth & van de Vijver, 2006). While the usual practice is to

then categorize individuals according to these four categories (Berry, 1980; Berry, 1997), it is

also possible to look at the scores on the two questions independently on a continuum and thus

characterize the answers as a level of cultural identification to home and host culture (Ward &

Kennedy, 1993; Ward & Rana-Deuba, 1999).

Table 1

Acculturation Orientations (Berry, 1980)

		Is it considered to be of value to maintain own cultural identity and characteristics?	
		Yes	No
Is it considered to be of value to maintain relationships with the host culture?	Yes	Integration	Assimilation
	No	Separation	Marginalization

"Acculturative Stress" – Acculturative stress is the individual's response to the stressors

that arise as a direct consequence of moving into a new cultural sphere, which "may include

physical, psychological, and social aspects" (Berry, Kim, Minde, & Mok, 1987, p. 493).

"Social Support" – Social support refers to the "existence or availability of people on

whom we can rely, people who let us know that they care about, value, and love us" (Sarason,

Levine, Basham, & Sarason, 1983, p. 127). The current study examined international students'

perceived social support that is provided by friends, colleagues, acquaintances, and family, with

a particular emphasis on different sources of this support, namely whether it comes from: (a) co-

nationals, or people from the same country; (b) host nationals, or Americans for the purpose of

this particular study; or (c) other international students, or other international students that are neither from the same home country nor Americans.

Background Information

Although the first recorded instance of an international student coming to the United States was Francisco de Miranda who came from South America to study at Yale in 1784, America's role as an educator to students from around the world did not begin in earnest until the 20th century (Glazier & Kenschaft, 2002). This growth was influence by the fact that graduate training only began to be widely available in the United States after the late 19th century. The founding and expansion of land grant institutions also allowed for an expansion of higher education opportunities to students from abroad (Glazier & Kenschaft, 2002). Even so, there were only 2,673 international students enrolled in the United States in 1904 (Wheeler, King, & Davidson, 1925), and it was not until the years following World War I that a significant number of international students began to arrive in the United States. The interwar period saw the growth of more vocal calls for an increase in educational exchange to overcome the destruction of the war in Europe (Wheeler, et al.). Filling the void created by the devastation of the wars in Europe American universities began to take on the role of being a world-wide center for the pursuit of higher education. Over the following decades, international enrollment in the United States doubled each decade over the next 30 years (Bevis, 2002).

Table 2

International Student Enrollment (Institute of International Education, 2009)
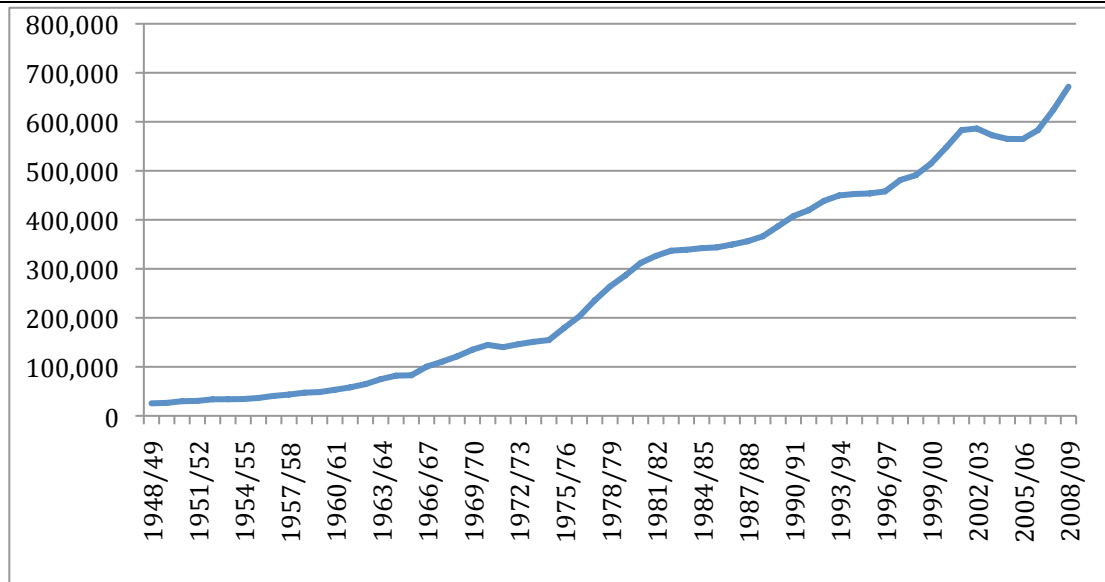
Even previous to the tremendous growth in the years following World War II, there were

growing attempts to assist international students with the difficulties of studying in the United

States. The first efforts in this regard arose from among the international students themselves at a

variety of American colleges and universities in the early 1900s, with students forming informal

groups called "Cosmopolitan Clubs" or "International Clubs" (Bevis & Lucas, 2007). These

groups attempted to provide both social and recreational contacts for these early international

students as well as to give American students a chance to meet and assist international students.

The first Cosmopolitan Club in the United States was formed at the University of Wisconsin

with the explicit intention of providing international students with opportunities "to meet on an

equal basis of mutual friendship and brotherhood" (Lochner, 1908, p. 317). These clubs rapidly

expanded throughout American universities, and later around the world, but it was not until the

1920s that universities recognized on a larger scale that international students were confronted with a unique set of challenges and difficulties. This recognition in turn led to the creation of the first foreign student adviser positions and administrative efforts to assist the growing number of international students.

Similarly, as the number of international students increased and researchers began to recognize the challenges involved in studying in a foreign country, there also arose interest in researching the different aspects involved in living and studying in the United States (Kiell, 1951; Lysgaard, 1955; Oberg, 1960; Schild, 1962; Smith, 1955). These initial studies focused primarily on how international students adapted to life in the United States, particularly as it applied to how international students acquired American cultural characteristics and improved their English language skills. Over the intervening years, studies have advanced and begun to examine the wide variety of concerns involved in being a student in the United States. Although much of the work done in recent years has investigated international student distress associated with culture shock (Furnham, 2004; Ward, Bochner, & Furnham, 2001), mood disorder prevalence (Sumer, Poyrazli, & Grahame, 2008), psychological difficulties associated with their arrival in the United States (Clark-Oropeza et al., 1991; Sandhu, 1994), and help-seeking behaviors (Komiya & Eelss, 2001), the greatest area of research has continued to involve the examination of the many aspects of the far-reaching array of issues surrounding the challenges international students face in adapting to the broader American culture, as well as the difficulties they are confronted with in their efforts to pursue an education in the United States (Constantine, Okazaki, & Utsey, 2004; Lin & Yi, 1997; Misra, Crist, & Burant, 2003; Yeh & Insoe, 2003).

Significance of the Study

The current study investigated the relationship between international students' acculturative stress and acculturation orientation, and how these are related to social support, which has long been shown to be a factor in buffering the effects of stress (Cohen & Willis, 1985). Although there have been studies done on the assistance that social support provides in adapting to the stressful situations associated with living in a new culture (Hayes & Lin, 1994; Olaniran, 1993) as well as investigation into the role other international students play in adapting to life in the United States (Bochner, McLeod, & Lin, 1977; Furnham & Alibhai, 1985), there has not been systematic investigation examining how different sources of social support relate to the level of acculturative stress that international students experience. Although a number of studies have examined the importance of social support from other students from the same country and from Americans (Bektas, Demir, & Bowden, 2009; Chen, Mallinckrodt, & Mobley, 2002; Spiess & Stroppa, 2008), little focus has been directed at the level of social support provided by other international students and the presence a culturally wider social network might have on acculturation and acculturative stress.

This study proposes to investigate the connection between these sources of social support and the different acculturation orientations in an effort to gain a better understanding of their relationship with acculturative stress, as well as to study the interaction between acculturation orientation and the sources of social support as possible predictors for acculturative stress. It was hypothesized that certain acculturation orientations will be associated with lower acculturative stress when combined with social support that promotes or encourages a specific acculturation orientation. By examining the relationship between different acculturation orientations and sources of social support on international students' acculturative stress levels, some of the first

research-based conclusions were obtained regarding the prediction of acculturative stress, which take into account these additional considerations.

Purpose of the Study

The purpose of this study was to examine the level of acculturative stress international students experience and how this stress is associated with international students' acculturation orientation when accounting for differing sources of social support. By examining this relationship, it is hoped a more complete understanding will emerge of international students' acculturative stress and the roles social support and acculturation orientation play.

As discussed in greater detail in Chapter 2, there have been consistent research findings with various acculturating groups identifying the Integration acculturation orientation as the least stressful, the Marginalization orientation as the most stressful, with Separation and Assimilation showing intermediate levels (Berry, 1990; Dona & Berry, 1994; Zheng & Berry, 1991). Although these conclusions have been consistent over the many studies examining this phenomenon, much less research has been done involving international students in the United States. To date, Sullivan and Kashubeck-West's (2010) preliminary work is the only identified study specifically examining this population. Although Sullivan and Kashubeck-West did find similar results to Berry's various studies, the current study intends to expand on their preliminary results.

In addition to gaining a better understanding the role of acculturation orientation on acculturative stress, the current study examined the importance of different sources of social support. Bochner's Functional Model of Friendship (Bochner et al., 1977) has been proposed as an important model outlining the role of different social support networks that international students access during their studies. The three different groups include: (a) a monocultural group

students from the home country, who are the primary group of friends and assist with home

culture identity maintenance, (b) a bicultural group of Americans, or host nationals, who are

important for academic and professional purposes, and (c) a multicultural group of international

students from other countries who play an important role in recreational and entertainment

activities. Extending this line of inquiry beyond Sullivan and Kashubeck-West (2010), who

found that international students play an important role in providing support and mitigating the

effects of acculturative stress, the current study examined the importance of these different

networks as they pertain to acculturative stress.

Research Questions and Statement of the Hypotheses

The present study was be organized around the following questions:

1. What is the relationship between international students' acculturative stress,

   acculturation orientation, and sources of social support?

2. What combination of international students' demographic characteristics,

   acculturation orientation, and source of social support provides the best model for

   predicting acculturative stress?

The present study proposes the following hypotheses:

Hypothesis 1 - There will be a negative or inverse relationship between perceived social

support and acculturative stress. That is, as perceived social support increases, acculturative

stress will decrease and vice versa.

Hypothesis 2 - Acculturative stress will be associated with acculturation orientation in the

following ways:

Hypothesis 2a. International students with positive home and host country culture

identifications will show the lowest acculturative stress.

Hypothesis 2b. International students with either positive home or host country

culture identifications will show intermediate acculturative stress.

Hypothesis 2c. International students with negative home and host country culture

identifications will show the highest acculturative stress.

Hypothesis 3 – Acculturative stress can be predicted using measures of acculturation

orientation and sources of social support in the following ways:

Hypothesis 3a. Acculturative stress will be lowest with international students who: (a)

have positive levels of acculturation identification to both home and host culture,

and (b) receive social support from all three sources (home, host, and other

international students), and;

Hypothesis 3b. There will be an interaction between acculturation orientation and

source of social support that contributes to the prediction model and the level of

acculturative stress will be less with international students who: (a) have positive

levels of acculturation identification to home and host cultures, and (b) perceive a

positive level of social support from home and host source.

Implications

The results of this study provided both a contribution to the theory regarding

acculturative stress and the importance of wide-ranging social support networks for international

students, as well as indicate new directions for counseling international students who are dealing

with acculturative stress. Although a great deal of progress has been made in recent years on

improving and expanding services for this underserved population (Arthur, 2004; Lin & Yi,

1997; Singaravelu & Pope, 2007), there is still much that is not understood about the difficulties

international students encounter during their studies in the United States. Counselors can benefit

greatly by gaining more information about the impact of the different acculturation orientations students employ during their studies and the importance of developing adequate social support to buffer the many challenges and stressors they encounter during their stay in the United States (Cohen & Willis, 1985).

Much of the research involving international students' social support has been focused on the presence of students from the same country, or co-nationals, and Americans, or host nationals. This study also explored the impact international students from other countries have on the process of adapting to life and studies in the United States. By having a better understanding of the stressors international students experience during the transition to their studies in the United States, counselors will have a more accurate understanding of the challenges international students face. Later implications of this study could, it is hoped, eventually lead to the development of new counseling strategies and interventions for assisting international students to adapt more effectively by expanding and enriching their social networks in an effort to address acculturative stress.

Summary

The last 50 years has seen an explosion in the number of international students in the United States. In the relatively short time students from around the world have been coming to the United States to pursue a university education, there is growing recognition of the challenges these students confront. To this end, the current study sought to gain information and a better understanding of the acculturative difficulties international students experience by examining their acculturation orientation, or approach to adapting to a new culture, as well as taking into consideration the importance of different sources of social support.

Chapter 2: Review of Related Literature

International students in the United States have to deal with considerable academic, personal, and social challenges in the course of their studies in the United States (Pedersen, 1991a). Not only do they have to deal with all the difficulties associated with university study (Lefkowitz, 2005), but research has clearly demonstrated that studying in a foreign country adds additional stress not only due to academic factors but also as a result of the experience of living in a different country and culture. These collected culturally-based stressors, also known as "acculturative stress," add a different dimension to the challenges international students face in the course of their studies (Kaczmarek et al., 1994; Sodowsky & Lai, 1997; Yang & Clum, 1994). An important aspect of the experience of acculturative stress is the individual's efforts in dealing with the difficulties that arise as a result of these changes in culture. The most widely used model refers to these different adaptation and coping approaches as "acculturation orientations" (Berry, 1980). Yet a third aspect of the changes international students face involves social support, which has shown to be particularly relevant as international students need to develop new sources of support as they deal with the loss of support that family and friends from back home provide during this time of transition (Cohen & Willis, 1985).

This chapter provides a summary and review of the major concepts related to acculturation, acculturative stress, and social support, as well as an outline of the major areas of empirical and theoretical research as these concepts relate to international students in the United States. Although there is a growing body of research on international students outside the United States (e.g. Bartram, 2008; Greenland & Brown, 2005; Maundeni, 2001; Ward & Masgoret, 2004), the present review emphasizes research conducted specifically with international students in the United States. There are several areas, however, where research involving participants or

research sites abroad are included if the literature did not reveal any relevant studies done with international students in the United States.

Acculturation

From time immemorial, human beings have been engaged in encounters and contact with other cultures, with instructions and guidance on how to interact with people from other cultures being traced as far back as Sumerian tablets from 2400 B.C.E. (Rudmin, 2003). Over time a number of academic disciplines have sprung up specifically addressing the impact of cultural differences. Anthropologists and linguists have considered how culture influences the formation of both large scale societies and civilizations as well as individuals (Geertz, 1973; Levi-Strauss, 1969; Whorf, 1956), while historians and political scientists have drawn on cultural differences and characteristics as ways of explaining and understanding international relations and conflicts (Barber, 1992; Huntington, 1993). Psychologists and counselors, in turn, have examined cultural differences in their efforts to provide more effective and useful psychological interventions (Pedersen, 1991b).

In this vast range of efforts to understand the importance of culture in people's lives, there is a primary distinction to be made between "enculturation," which is the first, or home, culture that individuals acquire as they learn and grow into what becomes their native culture and language (Shimahara, 1970), and "acculturation," which is the subsequent encounter between the first "native" or "home" culture and a new and different culture (Berry, 1980). While enculturation has become mainly the realm of sociology and anthropology (Hall & du Gay, 1996), acculturation and the study of how differences in culture affect individual psychological processes and behaviors has taken on primary importance in the field of psychology and counseling (Pedersen, Draguns, Lonner, & Trimble, 1997; Sue & Sue, 1999).

Consequently, acculturation has emerged as one of the most widely studied phenomena in cross-cultural psychology (Rudmin, 2009), as the field "seeks to comprehend the ways in which psychological phenomena are part of cultural life and are interdependent with other cultural phenomena" (Ratner, 2002, p. 3). The history of the study of acculturation has been exhaustively outlined by Rudmin (2003), who pointed to important texts in the ancient world as evidence that the challenge of living and confronting another culture is among the oldest of human experiences. Much more recently, acculturation can be seen to have become the focus of concentrated research efforts in the late 1800s and early 1900s as psychologists and anthropologists endeavored to understand the process by which different peoples and cultures were changed through encounters with other cultures (Rudmin, 2009). Yet another indication of the interest in acculturation is the large number of academic and research publications that have been produced on the topic, with more than 5,600 citations identified during a Psych INFO search in October 2010 using "acculturation" and "cultural adaptation" as keywords.

The first research efforts on acculturation focused specifically on the acculturation of groups, or how groups are affected by the encounter with other cultures. In this vein, Redfield, Linton, and Herskovits (1936) developed an early definition of acculturation as "those phenomena which result when groups of individuals having different cultures come into continuous first-hand contact" (p. 149). This somewhat abstract formulation later evolved as the Social Science Research Council (1954) took into consideration how "ecological or demographic modifications" (p. 974) can also cause cultural change. As these two formulations make clear, early efforts at conceptualizing how cultures interact and change were focused primarily on group-level change. It was not until 1967 when Graves, in the course of studies on Native Americans in the Southwestern United States, expanded these definitions to look specifically at

the impact these changes have on individuals by considering the consequences of the larger scale cultural interactions on individual language use, cultural practices, personal identity, and stress.

One of the central aspects of the American mythology of incorporating immigrant peoples and culture changes is the concept of the melting pot (Booth, 1998). As immigration came to be one of the defining aspects of the United States as an emerging nation in the 1800s, there was significant pressure on immigrants to abandon previous cultural identities and allegiances in order to gain a new American cultural identity (Hirschman, 1983). Immigrants to the United States were thus seen to be assimilated into the new American culture to the extent they were ready and able to set aside previous cultural characteristics, such as language and previous cultural identities and practices to become Americans (Bourhis, Moise, Perreault, & Senecal, 1997). The melting pot model was also promoted by the dominant Euro-American culture with ethnic minorities and Native peoples by insisting: (a) that newcomers and immigrants to the United States would eventually replace their native languages and traditions with English and an American identity (Park, 1928; Thurnwald, 1932), and (b) that America's Native people would eventually become "civilized" by setting aside their native religions, languages, and traditions in favor of the more "modern" American culture (Garrett & Garrett, 1994). This model of cultural change has been identified in the literature as "unidimensional" or "unidirectional" because the underlying idea of cultural change is that one set of cultural characteristics are put aside as another set replaces it (Ryder, Alden, & Paulhus, 2000).

This unidimensional model continues to exert considerable influence, as noted with the widely used acculturation measures such as the *Suinn-Lew Self Identity Acculturation Scale* (Suinn, Ahuna, & Khoo, 1992) and the original version of the *Acculturation Rating Scale for Mexican Americans* (Cuellar, Harris, & Jasso, 1980). Summarizing this perspective, Szapocznik,

Scopetta, and Kurtines (1978) concluded that effective acculturation occurs as time passes and non-dominant cultural values and behaviors are slowly set aside in favor of dominant cultural values and behaviors. Ghaffarian (1987) applied this unidimensional model to Iranian students in the United States as the study determined that the students were successfully adapted to life in the United States if they had an increase in American values and behaviors along with an accompanying decrease in the expression of Iranian cultural characteristics. Torres and Rollock (2004) arrived at the same conclusion with Hispanic adults as they replaced their Hispanic characteristics, values, and attitudes with dominant culture American ones.

Due to this conceptualization of culture change requiring that the new culture be gained at the expense of the old culture, and without allowing for the previous cultural identity to be maintained, the unidirectional model has generally been found to be lacking for many intercultural travelers. This is particularly the case with international students as it has come to be recognized that international students benefit from counseling that assists them in incorporating not only new American behaviors and cultural characteristics but also at the same time maintaining a strong connection to their home culture and identity (Johnson & Sandhu, 2007; Pedersen, 1991a).

With this limitation of not considering ongoing home culture connection in mind, the second major model of acculturation – the "bidimensional" or "bidirectional" – examines how these two different aspects of cultural identity can be brought together. By allowing for both home culture maintenance and new culture acquisition, these two aspects are thus taken as independent considerations, thereby allowing for varying levels of identification with the old as well as new culture. As outlined above in Table 1, the most frequently used model is the

bidimensional model first proposed and set forth by Berry (1980). In this model, individuals

involved in culture change answer two different questions:

1. is it important to maintain relationships with my own culture of origin? and

2. is it important to develop relationships with the new culture?

By allowing for these two different aspects to be taken into consideration, the four

acculturation orientations of Assimilation, Integration, Separation, and Marginalization allow for

a wider range of possibilities for individuals undertaking cultural change. Instead of making

cultural adaptation to be an either/or proposition, the bidimensional model with its four different

acculturation orientations allows for a variety of options and choices with regard to both

maintaining the home culture as well as developing connections to the host culture.

As the study of acculturation evolved and progressed, research has identified other

important aspects of the process of cultural change within the bidimensional model. Searle and

Ward (1990) examined individual acculturation as involving both psychological and

sociocultural adaptation, with both parts involved in the individual's efforts in dealing with the

challenges and difficulties that emerge as a result of living in a new culture. Individual cultural

adaptation involves two major areas:

1. psychological adaptation, which includes the emotional and cognitive changes

involved in living in a new culture, which can be globally described as the individual's sense of

well-being; and

2. sociocultural adaptation, which includes the behavioral changes that are required as the

individual encounters new behavioral and interpersonal practices and standards, or in more

general terms, involves the individual's general ability to function effectively in the new

environment.

Although the psychological and sociocultural aspects of adaptation are similar and do overlap, it has been found that the respective progress of each is different and follows different paths. Psychological adaptation has been found to be primarily associated with mental health characteristics and coping strategies, even as it follows a fluctuating course as the individual deals with different stressors over the adaptation process (Toyokawa & Toyokawa, 2002; Ward & Kennedy, 2001; Ward & Rana-Deuba, 2000). Sociocultural adaptation has been found to be primarily a function of social learning and more related to the amount of time spent in the new culture as new behaviors are incorporated into the individual's behavioral repertoire to fit into the new environment, all the while following a more regular and progressive increase over time (Toyokawa & Toyokawa, 2002).

The consideration of these psychological and sociocultural adaptation aspects, as well as allowing for the group and individual perspective on acculturation, are necessary to address and understand the cultural encounter process. As a general model for cultural change, this broad conceptualization has been used to identify culture change orientations in individuals in groups as varied as immigrants, refugees, short term visitors and sojourners, ethnic and racial minorities, and native peoples (e.g. Barry, 2005; Bennett et al., 2008; Berry & Annis, 1974; Joiner & Walker, 2002; Rogler, Cortes, & Malgady, 1991). The current study, with its focus on international students, focuses on the individual aspects, primarily because the group aspect can be seen to be less relevant with individuals who have come to the United States mostly on their own without extended family and outside of the context of a large, preexisting ethnic community (Hechanova-Alampay, Beehr, Christiansen, & Van Horn, 2002; Ong & Ward, 2005; Pedersen, 1991a).

Although the majority of recent studies involving international students make use of the bidimensional model, some scholars continue to argue that there is value in retaining the two different models for research purposes. As Flannery, Reise, and Yu (2001) stated in their review on the utility of the two models, it is important to use different measures and differing conceptualizations as necessitated by the population of study as well as the research question. They went on to conclude that the unidimensional model has a strength in its brevity and that the lack of home culture consideration leads to a more straight-forward understanding of how host culture characteristics are acquired, while the bidimensional model allows for a more theoretically complete understanding of how culture change involves both responses to the old and new culture. Along similar lines, in a study using multiple samples of undergraduate students of Chinese origin (ns = 164, 150, and 204), Ryder, Alden, and Paulhus (2000) concluded that the bidimensional model provided a more complete and useful description of international students' acculturation process because it allows for the inclusion of a wider range of issues and concerns. Consequently, the current study's emphasis on the incorporation of international students' views of their personal identification with home and host culture along with the examination of the various sources of social support calls for the bidimensional model to be used.

Limits of Acculturation Theory with International Students

Although there has been a tremendous amount of research using the bidimensional model of acculturation with many different types of groups (Rudmin, 2009), there are a number of considerations that do not lend themselves well to the ongoing efforts to fit the international student experience into the typical bidimensional acculturation model. Although the bidimensional model has been widely and effectively applied with immigrants and native peoples (Berry, 2003; Berry, 2006), the unique circumstances of international students in the

United States are not well accommodated in a more strict application of the more general

bidimensional acculturation theory. The following section offers a summary of some of the

identified shortcomings of the bidimensional acculturation model, specifically as they apply to

international students in the United States. More specifically, this section considers how the

specific environmental and situational aspects of studying in the United States, as well as

outlining relevant methodological and measurement issues, point to some of the overall limits of

the bidimensional acculturation model.

Berry (1997) pointed out that individual acculturation orientations are greatly affected by

the larger social environment. Accordingly, international students are affected not only by

prevailing social attitudes in the communities where they study but are also strongly affected by

the campus environment (Selby & Woods, 1966). Different campus environments can be

regarded as varying from welcoming to simply indifferent for international students (Althen,

1984). Similarly, universities can be perceived by students as ranging from providing many

services and accommodations all the way to blithely expecting international students to just fit in

and make their own way through their studies by utilizing the same services and support

structures available to other students (Althen, 1992). Even on the most welcoming and

accommodating campuses, however, there still is a high expectation that students almost

immediately fit into in the American educational culture by taking exams in English and

adapting to American classroom norms and standards very soon after arriving on campus

(Charles & Stewart, 1991; Smith, 1955). These sudden demands to perform and fit in can make

for a daunting challenge that presents a unique set of difficulties, depending on factors as varied

as country of origin, connections to the local community, sexual orientation, and career and

financial options (Singaravelu & Pope, 2007). This combination of factors leads to international

students necessarily having an increased need for contact with the host culture, as compared to other acculturating groups. The fact that these changes are called on to be quickly implemented is also a difference from other groups.

Another limitation with the bidimensional acculturation model is that it is based solely on two generalized cultures – home culture and the host American culture. International students do not have many options in whether or not to adapt to the academic culture of the United States. Almost immediately, professors and their fellow students expect that international students will fit in with the linguistic, interpersonal, administrative, and academic demands of the American classroom (Qin, 2009). These expectations make it extremely difficult, if not impossible, for an international student to pursue an acculturation orientation that does not include the incorporation of at least some aspects of American academic culture, which brings into question whether or not acculturation orientations such as Separation and Marginalization are implemented in the same way for different acculturating groups. Although it may be possible for an immigrant group to pursue a Separation orientation by virtue of having an extended network of family and home culture community supports (Berry, Kim, Power, Young, & Bujaki, 1989). If they are to be successful academically and professionally, international students have no choice but to be actively engaged in the American campus culture (Thomas & Althen, 1989).

In addition to the expectation to quickly conform to the American academic culture, research has shown that it is common for international students around the world to not have extensive contact with host country students (Greenland & Brown, 2005; Poyrazli et al., 2004; Schmitt, Spears, & Branscombe, 2003). This common experience of a lack of immediate contact with the host culture calls into question the level of exposure and the ability of international students to implement an Assimilation orientation in the absence of this contact. Because of its

emphasis solely on connection to home and host culture, the application of the Assimilation or

Integration orientations may likewise require a re-evaluation when taking into consideration the

research showing that international students have important social and recreational contacts with

other international students who are neither host country students nor co-national students from

the same country (Bochner et al., 1977; Furnham & Alibhai, 1985). Schmitt et al. (2003)

concluded that many international students create among themselves a new sense of cultural

identity founded not on shared similarities but on their basic differences from Americans. Unlike

cultures that are created through a common language, history, or customs, this international

student culture emerges through their shared experience of being different from the dominant

culture in the United States. With an identity as an international student that is not based

specifically on either the home or host culture, the presence of a third cultural identity is not

well-accounted for in the bidimensional model, which does not take into account any other

source of cultural identification.

Another limitation of the bidimensional model is the monolithic approach to national

cultures. By having only a single axis each for home and host culture, there is the implied

interpretation that there is a single culture in the United States with which international students

interact and interface. Instead, international students find that American college campuses can be

very culturally diverse places and that adapting to the local culture can involve an encounter with

a wide range of cultural differences and expectations (Sue & Sue, 1999). This can, of course,

similarly be considered a more general underlying shortcoming with the bidimensional

acculturation model as it applies to the United States, with its conceptualization of "American"

culture as being composed of a monolithic and singular entity (Pedersen, 1991b), instead of a

more realistic portrait of the United States as a vast array of different cultures. Although the

benefits of a spirit of openness to diversity can positively affect international students (Leung, Maddux, Galinsky, & Chiu, 2008; Stevens, Plaut, & Sanchez-Burks, 2008), there are also negative social aspects that affect international students, particularly as research has shown that international students do experience racism and discrimination, not only as a result of being from a foreign country but also as a result of being seen as a minority (Constantine, Anderson, Berkel, Caldwell, & Utsey, 2005; Frey & Roysircar, 2006; Sandhu & Asrabadi, 1994). Neither the difficulties involved in identifying a single "American" culture, nor the real possibility of rejection and oppression due to an assigned minority status are well accounted for in the bidimensional model.

In addition to these contextual considerations, a number of methodological and measurement issues have been raised as inherent limits of the bidimensional model. Similar to the critique above regarding the multicultural nature of the United States and the difficulties involved in identifying a single American culture, the bidimensional model has been criticized for being overly reductionistic by reducing the elements of interest to home culture and host culture while treating each as a single, easily defined element (Rudmin, 2006). Bhatia and Ram (2001) raised concerns with regard to the measurements being based on country of origin, which is frequently not entirely reflective of the culture of origin of an individual, particularly in multicultural and multiethnic countries. The bidimensional model also carries with it the assumption that all cultures are categorically different, without allowing for cultures that are closely related (Rudmin, 2006). Measuring each separately and assuming the two cultures are always different does not fit well or easily incorporate occasions when there is cultural overlap, such as when students go to study in countries that are culturally similar to their home.

Rudmin (2003) identified additional concerns with the specific items used in acculturation measures following the bidimensional framework, in particular noting the tendency to use double-barreled questions and not including "indifferent" as an answer option. A double barreled question like "I feel very comfortable around both Americans and Asians" from the *East Asian Acculturation Measure* (Barry, 2001) is used to test the respondent's endorsement of the Integration acculturation orientation. As Rudmin (2007) pointed out, any answer to this question is ambiguous and inconclusive: Does a low rating mean that the respondent only feels comfortable around Americans or Asians but not both, or does it mean that the respondent is uncomfortable around both equally? Does a high rating mean the respondent feels equally comfortable with both Americans and Asians or comfortable enough around one group that the other is also acceptable? The inconclusiveness in the answer set is magnified when conducting research with international students. Using the above item, what acculturation category pertains to those respondents who do not feel comfortable with Americans but do feel comfortable not only with Asian students but also other international students? These inherent difficulties associated with the psychometric limitations of using double-barreled questions led Rudmin to question why some bidimensional models continue using the double barreled item format when there is such a clear avoidance of these kind of items as a practice in general research methodology (e.g. Babbie & Benaquisto, 2010; Kumar, 2005).

Similarly, by not allowing for an "indifferent" or "other" option, there is the assumption that all measurement items are of equal importance and relevance to the respondents. For example, a religious identity based in the home culture may be an important aspect for some, while for others it may not. Rudmin (2003) pointed out how high ratings on items weighted to a Marginalization orientation like "I prefer beliefs other than Islam or Christianity" or "Cuisine is

better elsewhere than Turkey or the U.S." (p. 25-26) can lead to a variety of different conclusions, including: (a) the respondent is actually Marginalized, (b) a third option is preferred, Buddhism or Chinese food for example, or (c) the respondent is an agnostic or does not have strong opinions about food. The presence of this ambiguity does not allow for clear interpretation of the data and unnecessarily introduces error into the measures (Rudmin, 2003).

Whereas both unidimensional and bidimensional acculturation theories both treat acculturation as a characteristic of an individual's global approach to encountering a different culture, several researchers have questioned the use of context-free items in acculturation measures. Using the item mentioned above, "I feel very comfortable around both Americans and Asians" (Barry, 2001), the item does not specify if the Americans and Asians that are referred to are fellow students, faculty members, roommates, people back home, or just people that are randomly encountered. Arends-Toth, van de Vijver, and Poortinga (2006) questioned the assumption that it is possible to arrive at research conclusions on the basis of these kind of context-free questions considering the wide range of possibilities when interpreting the results.

Looking more specifically at the impact of locating measurement items in a specific context, Arends-Toth, et al. (2006) examined how items that are located in a public context, like public language use, general social contacts, and news sources, showed different acculturation orientations than when the items were located within a private context like child rearing, cultural habits or practices, and family celebrations. Their analysis found that allowing for these two separate factors accounted for 57% of the variance, thus underscoring the context specific nature of acculturation. Chen, Benet-Martinez, and Bond (2008) came upon similar results and found that individuals' scores can be interpreted to report different acculturation orientations depending on whether the measurement items are located in the public or private sphere. Birman, Trickett,

and Vinokurov (2002) addressed this challenge by concluding that acculturation should be considered to take place differently in the different public and private domains and that the public/private difference leads individuals to value different cultural characteristics differently depending on those contextual differences.

Lastly, there are shortcomings in the overall acculturation research literature with regard to research done with international students in the United States. Although extensive research has been conducted using the bidimensional acculturation model with a wide variety of immigrant groups (Berry, 2005), much less work has been done with the international student population. In the relatively small number of studies using a specific acculturation measure, rather than using the construct of "acculturation" as a description of the various possibilities for cultural contact and adaptation, it is frequently presented solely as the efforts that international students make in acquiring American cultural characteristics (Dao, Lee, & Chang, 2007; Frey & Roysircar, 2006; Liao, Rounds, & Klein, 2005; Shih & Brown, 2000; Wadsworth, Hecht, & Jung, 2008; Zhang & Dixon, 2003). In one study, Merta, Ponterotto, and Brown (1992) defined being highly "acculturated" simply as having spent more than two months in the United States and being comfortable in English. This is especially problematic considering the prevailing use of unidimensional measures in these studies that imply a replacement of home cultural characteristics that do not take into account the ongoing connection to the home culture.

There have, however, been an even smaller number of studies that have attempted to use the more comprehensive bidimensional model as a means to study cultural adaptation with international students in the United States. Barry (2001) developed the *East Asian Acculturation Measure* (EAAM), a specific bidimensional measure for East Asian international students ($n =$ 150) that demonstrated good alpha reliability on the four subscales measuring the four

acculturation orientations (assimilation 0.77, separation 0.76, integration 0.74, and

marginalization 0.85). Although the EAAM has been used in a number of different studies

(Ajrouch, 2007; Bennet, et al., 2008; Ruan, et al., 2008; Wolin, Colditz, Stoddard, Emmons, &

Sorenson, 2006), it has not been used with any other studies involving international student

populations other than Sullivan and Kashubeck-West (2010) ($n = 128$), who found Integration

and Separation to be the most common orientations (both 29%, $n = 37$) but also reported a much

higher prevalence of Marginalization (22%, $n = 31$) than any other study. Unexpectedly, Sullivan

and Kashubeck-West also found that Integration was characterized by high levels of social

support from both home country students as well as other international students with

comparatively little host country support. Bektas, Demir, and Bowden (2009) used a modified

version of Ataca and Berry's (2002) bidimensional measure with a sample of Turkish students in

the United States ($n = 135$) and found the Separation orientation to be the most typical

acculturation orientation ($p < .001$). Wang and Mallinckrodt (2006) used Ward and Rana-

Deuba's (1999) *Acculturation Index*, a bidimensional scale measuring both the home and host

culture axes to develop a regression equation to examine adjustment in a sample of Chinese and

Taiwanese students ($n = 104$). Needless to say, this lack of studies using the bidimensional

model suggests that further work is necessary to gather more information in order to gain a better

understanding of the acculturation orientation and adaptation patterns of international students in

the United States. Additional studies will also allow for greater confidence in determining

whether the conclusions arrived at with more widely studied groups like immigrants and

refugees also apply to the particular circumstances of international students.

Another shortcoming in the literature is the lack of studies examining whether or not

international student acculturation orientations are stable or instead change over time. A search

of the literature did not identify any longitudinal studies in an effort to determine whether or not acculturation orientations change as more time is spent in the United States. Extending this question, the ongoing issue of whether or not acculturation orientations are possibly related to personality traits and whether or not they have more trait or state characteristics also remain unexplored. While this is also a more general lacuna in the acculturation literature as well, with no identified studies examining this aspect with other groups either, this raises questions as to the applicability of the bidimensional model with this particular population. Unfortunately, due to the constraints and limits of the present research project, there will not be an opportunity to gather longitudinal data in the current study.

Although these concerns do present some challenges to the application of the bidimensional acculturation model, there is adequate evidence in the 30 year history of its utilization to merit ongoing investigation. Possibly more so than other acculturating groups, international students are most immediately confronted with the challenge of considering the impact of home culture and host culture connections as they progress through their studies in the United States. There are considerable challenges for these students and developing a better understanding of the mechanisms of adaptation will be important to assist international students during their transition to living and studying in the United States. The current study proposes to address some of these shortcomings and limitations in the research by gathering information about the utility of the bidimensional model with international students in the United States and its relevance in understanding their experiences of culture change and adaptation.

Acculturative Stress

A closely associated aspect to the process of adapting to a new culture is a consideration of the stressors accompanying these changes. This phenomenon, called "acculturative stress,"

has been defined as "one kind of stress, in which the stressors are identified as having their source in the process of acculturation; [with] a particular set of stress behaviors that occur during acculturation" (Berry, 1995, p. 479) and is "a phenomenon that may underlie a reduction in the health status of individuals (including physical, psychological, and social aspects)" (Berry, 1990, p. 246). Although these symptoms of distress are similar to other stress responses, acculturative stress has been identified as specifically resulting from and arising out of the act of moving to and living in a new culture (Berry, 2006a). As a result of this stress, as in other experiences of stress, individuals may experience a wide range of difficulties, including somatic manifestations, depression, anxiety, and decreased self-esteem (Crockett, et al., 2007).

As discussed above, the acculturation process was first described as a group phenomenon, with Graves (1967) to be among the first researchers to consider how the individual responds to changes in culture and how these experiences become stressors for each individual. Even before Graves, however, there was already widespread recognition of the many challenges and accompanying stressors involved in studying in the United States (Lysgaard, 1955; Schild, 1962; Smith, 1955). Lysgaard identified a U shaped curve where international students experience initial enthusiasm and excitement, followed by difficulties and distress, leading eventually to successful adaptation. Oberg (1960) called this process and corresponding set of difficulties as "culture shock" and theorized that international students in the United States go through these various stages as a new culture is encountered.

This line of investigation has been widely explored (Furnham & Bochner, 1986; Ward et al., 2001; Winkelman, 1994), but significant limitations have been identified with the stage model of culture shock, namely a lack of evidence regarding the existence of an initial stage of enthusiasm (Brown & Holloway, 2008), methodological concerns including overgeneralization

and a lack of control groups (Church, 1982), inconclusive efforts in identifying discrete stages (Selby & Woods, 1966; Zapf, 1991), and the regular use of cross sectional studies, rather than longitudinal data (Church, 1982). Berry (2006a) lastly pointed out that the term "culture shock" emerges from a psychopathology frame that implies an exclusively negative encounter resulting from exposure to a single, new culture. Instead, the term "acculturative stress" is a more inclusive concept that frames the phenomenon as placed in the context of a multiple culture encounter, as well as being located within the larger stress and coping theoretical framework (Berry, 2006; Zhou, Jindal-Snape, Topping, & Todman, 2008).

Regardless of the naming of the phenomenon as "culture shock" or "acculturative stress," researchers have developed two different perspectives in an effort to understand the process of adaption involved in moving from one culture to another. The first, the "culture learning" perspective (Furnham & Bochner, 1986), considers the necessary behavioral changes as the primary source of stress and identifies the need to acquire new behaviors in order to effectively adapt to a new cultural environment, while the "stress and coping" perspective (Berry, 2006) considers the emotional aspects and the individual's efforts to adapt to the new stressors that arise in a foreign environment as the most important part of the transition. More specifically, the culture learning perspective outlines how additional behaviors, such as new interpersonal interaction mores and expectations, need to be acquired, while emphasizing the acquisition of specific and concrete behaviors that are necessary to function in the new culture. The range of new behaviors include the development of new cross-cultural communication skills, the recognition of different interpersonal interaction styles and ways of managing conflict resolution, as well as acknowledging new and different verbal as well as non-verbal communication styles (Ward et al., 2001).

Unlike the culture learning perspective with its emphasis on the behavioral aspects of cultural adaptation, the stress and coping perspective considers how the process of moving to a new culture is a stressful process which requires the implementation of expanded individual coping mechanisms and strategies to deal with the increased stress (Berry, 2006a). Lazarus and Folkman's (1984) stress-appraisal model outlines how the level and severity of stress experienced by an individual is determined according to the environmental pressures and the individual's personal resources that are able to be brought to bear on those challenges. The individual's perspective on the perceived discrepancy between what the new environment seems to demand and the perceptions of what personal resources can be utilized to address the challenges thus determines the level of stress and discomfort that an individual experiences. Proponents of the stress and coping perspective thus underscore the importance of assisting newcomers with the development of expanded stress management and coping skills, as well as the need to consider the impact of socioeconomic and societal factors in identifying how to welcome new immigrant populations most effectively and efficiently (Williams & Berry, 1991).

In an effort to bridge the seeming divide between the culture learning and stress and coping perspectives, Searle and Ward (1990) posited that these two perspectives were simply two parts of the same phenomenon and that comprehensively, cultural adaptation involved both psychological as well as sociocultural aspects. Not only are they conceptually different, but Ward and Kennedy (1993) found that the psychological adaptation aspect of acculturative stress was most affected by individual emotional and psychological characteristics as well as social support, while successful sociocultural adaptation was found to be associated with the time spent in the new culture and positive contact with host nationals, who were used as local resources to

learn the new behaviors allowing the newcomers to fit in (Li & Gasser, 2005; Ward & Kennedy, 2001).

Applying these stress considerations directly to the bidimensional acculturation model, research with various acculturating groups has been consistent in identifying the Integration acculturation orientation as the least stressful, the Marginalization orientation as the most stressful, with Separation and Assimilation showing intermediate levels of stress (Berry, 1990; Dona & Berry, 1994; Zheng & Berry, 1991). As alluded to above, while these conclusions have been demonstrated with different acculturating groups, there is little or no research confirming whether or not this is also the case specifically with international students in the United States. Still with the stress and coping model's emphasis on both the psychological and sociological aspects of cultural adaptation (Berry & Annis, 1974), this continues to be an important avenue of investigation that has yet to be adequately explored.

Expanding on these societal aspects of cultural change, research has also examined how the host culture and culture of origin affect the acculturative stress of individuals. Depending on factors ranging from government policy to individual community attitudes, different societies can be characterized as being more or less open to cultural differences and the inclusion of new cultural characteristics and identities (Bourhis et al., 1997). These different considerations have been found to have a clear relationship with the level of acculturative stress newcomers to the society face (Berry, 2006a). Research has concluded that not only the receiving society culture has an important impact but also the individual's culture of origin is an important factor in determining what is stressful and how these stresses are managed (Misra & Castillo, 2004; Sumer et al., 2008; Ward & Chang, 1997). Expanding the stress and coping model to incorporate a more culturally relevant and sensitive perspective, Aldwin (2007) enumerated how culture can

affect the stress and coping process in four ways: (a) the cultural context shapes what is considered to be a stressor, (b) culture affects appraisal of stressfulness, (c) culture affects choice of coping strategies, and (d) culture provides different institutional mechanisms for coping.

On the individual level, Berry (1997) applied Lazarus and Folkman's (1984) stress-appraisal model to examine more directly the process of cultural change. Berry identified five aspects individuals need to address as they are confronted with change in a cultural context: (a) experience: the specific encounter of the difficulties involved in dealing with two cultures in contact, (b) meaning: the culturally bounded differences in the meaning of these experiences, which influences the appraisal and evaluation of the experiences, leading to behavioral shifts resulting in eventual adaptation, (c) coping: as the process of adaptation unfolds, the experience of culture change is dealt with by either using efforts to change the problem, change the emotion surrounding the difficulties, or by avoiding the difficulties (Endler & Parker, 1990), (d) stressors: the specific physiological and emotional reactions to cultural change, and (e) adaptation: resulting when the previous areas have been addressed and successfully incorporated into the new repertoire of behaviors, cognitions, and emotional responses to the new cultural environment.

Even though this range of theoretical frameworks is not based in empirical findings, it does serve to provide direction for further investigation into some of the factors involved in the stress and coping model as related to cultural adaptation. Moving forward, it will be helpful to test these models to determine if there is a best fit for incorporating an increased understanding of what assists with decreasing the impact of acculturative stress and the challenges resulting from moving to study in a new country.

Acculturative Stress and International Students

The specific difficulties international students encounter in their efforts to fit into a new cultural sphere have been widely discussed and recognized as an almost universal occurrence (e.g. Arthur, 2004; Furnham & Bochner, 1986; Pedersen, 1991a; Singaravelu & Pope, 2007; Ward & Rana-Deuba, 2000), while the adaptation and acculturative stress difficulties have been of particular interest in research with international students (e.g. Constantine et al., 2004; Olaniran, 1993; Poyrazli et al., 2004; Yeh & Insoe, 2003). Fitting in with Leong's (1984) early contention that, although international and American students are confronted with some similar challenges, international students are confronted with a unique set of challenges. Rajapaksa and Dundes (2002) found in a study of 182 international students and 100 American students that the international students were less content, more lonely, and more homesick than their American classmates (all $p < .000$), thus making apparent the qualitative differences in the demands of being an international student.

In an effort to identify the specifics of these difficulties in his summative article on the adjustment of sojourners, the broad term including international students and shorter term visitors, in the United States, Church (1982) identified language difficulties, financial problems, homesickness, a new educational system, and different social norms as all being major sources of distress. Later research has confirmed this initial conceptualization regarding the major sources of acculturative stress for international students. A number of studies have identified difficulties with English language as the most frequently identified source of difficulty (Dao, Lee, & Chang, 2007; Greenland & Brown, 2005; Kagan & Cohen, 1990; Li, Fox, & Almarza, 2007; Wang & Mallinckrodt, 2006; Yeh & Insoe, 2003). Ye (2005) found in a study of 115 East Asian students that as individual perceptions of English language skills increased, there was also an decrease in

culture shock ($r = -.30$, $p < .01$) and an increase in overall life satisfaction ($r = .18$, $p < .05$).

Similarly, Yang, Noels, and Saumure (2006) found that greater confidence with English

language skills in a sample of 81 international students was correlated with a decrease in socio-

cultural difficulties ($r = -.54$, $p < .05$).

In addition to difficulties with the English language, Ying (2005) found, in one of the few

longitudinal studies done on identifying specific acculturative stressors, that 216 Taiwanese

graduate students consistently identified academic challenges such as the demands involved in

performing well in classes and studying in English as the most difficult aspect of studying in the

United States over the entire course of the two year study. Misra et al. (2003) similarly identified

academic stress as an effective predictor of overall life stress ($\beta = 0.87$, $p < .05$) in their study

with 143 international students at two universities in the Midwest, while Wei, Heppner, Mallen,

Ku, Liao, and Wu (2007) examined how acculturative stress, maladaptive perfectionism, and

time spent in United States interacted to accounted for 49% of the variance in predicting

depression ($F (3, 182) = 57.46$, $p < .001$) in their study with 189 Chinese students at a large

public university in the Midwest.

A number of other individual characteristics have likewise been identified to be

associated with varying levels of difficulties and acculturative stress with international students.

Assertiveness training was identified by Tavakoli, Lumley, Hizaji, Slavin-Spenny, and Parris

(2009) as leading to higher positive affect ($n = 118$, $p\eta^2 = .077$), while Shupe (2007) found that

an inability to handle intercultural conflict was positively correlated with acculturative stress ($n = 151$, $r = .41$, $p < .05$). In addition to factors encountered after arriving in the United States, pre-

departure levels of neuroticism and depression were identified by Furukawa (1997) as being

predictive of depressive severity abroad ($\beta = 0.25$, $p = 0.001$ and $\beta = 0.26$, $p = 0.001$

respectively) with a sample of Japanese high school students studying in the United States ($n =$ 144).

In addition to identifying stressors, several studies have explored effective ways that international students deal with stress. Olaniran (1993) found that the number of host nationals in a social network predicted a decrease of culturally-based stress ($\beta = -0.35$, $p < .05$) in a sample of 102 international students in the Southwestern United States, and Watt and Badger (2009) found that the perception of the level of acceptance in the community was correlated with a decrease in homesickness ($r = -.36$, $p < .001$) with a sample of 161 international students at five Australian universities. Closely related to this, Ye (2006) concluded that social connectedness as measured by perceived support from interpersonal social networks predicted a reduction in overall social difficulties for a sample of 135 Chinese students attending university in the United States ($\beta = -0.31$, $p < .001$), and Yeh and Insoe (2003) found that English fluency ($r = -.30$, $p < .01$), social support satisfactions ($r = -.48$, $p < .01$), and social connectedness ($r = -.30$, $p < .01$) were all negatively correlated with the level of acculturative stress experienced in their sample of 359 international students located in the Northeastern United States.

In spite of the studies attempting to identify stressors and the corresponding sources of difficulty, measurement has also proven to be a challenge. In the initial efforts to measure the comprehensive effects of acculturative stress with immigrants and minority populations, general measures of mental health and well-being, like the *Cornell Medical Index* (Brodman, Erdmann, Lorge, Gershenson, & Wolff, 1952), were used, rather than using specifically developed instruments to look at specific cultural factors (Berry & Annis, 1974; Berry et al., 1987). The studies involving international students later evolved beyond using these general measures as more targeted and specific instruments were developed to examine the specific elements of

international students' acculturative stress (Crano & Crano, 1993; Sandhu & Asrabadi, 1998; Yang & Clum, 1994). Crano and Crano's scale examines the difficulties in: (a) educational challenges, (b) English language usage, (c) personal difficulties, and (d) social problems, while Sandhu and Asrabadi's scale examines specific aspects such as: (a) homesickness, (b) discrimination, (c) guilt after leaving family behind, and (d) intercultural adjustment concerns. Yang and Clum's scale consists of five factors or categories of acculturative stress: (a) concerns about finances and the desire to stay in the United States, (b) language difficulties, (c) interpersonal stress, (d) stress from the new culture and desire to return to one's own country, and (e) academic pressure. In the course of developing these instruments, it has become apparent that the unique situation of international students merit these separate measure as they incorporate the unique challenges specific to the difficulties associated with studying in the United States.

Even as these instruments have begun to be more widely used with broad-based samples of international students, many researchers have chosen to focus on specific groups of international students based on a specific national or regional origin in an effort to limit the difficulties involved in arriving at research conclusions with heterogeneous groups (Frey & Roysircar, 2006; Li & Gasser, 2005; Rahman & Rollock, 2004; Wei et al., 2008). Fritz, Chin, and DeMarinis (2008) concluded that, due to cultural differences, international students should not be considered as a single group due to the different adjustment challenges and efforts in developing support systems that are connected with being from different regions of the world. On the other hand, Schmitt et al. (2003) provided an interesting counter-argument that concerns about the wide variety of experiences and backgrounds should not be a barrier when taking into consideration how international students create a sense of identity based not on their similarities

but on the fact that they all differ from the majority culture in the United States. Consequently, international students create an identity emerging out of a new view of themselves and their shared differences from the dominant majority American culture.

Even as concerns are raised when conducting research with the wide range of cultural backgrounds international students bring to the United States, there are also benefits to consider on a broader scale the experiences international students as a group have during their stay in the United States. Bartram (2008) found in a qualitative study set in the United Kingdom that international students benefit each other in multinational groups by providing assistance with practical needs, emotional needs, and cultural and integrational needs. At the same time, in the case of studies involving broad categories of international students, it will continue to be important to keep in mind that individuals from different cultures and regions of the world are differentially affected by culture change, particularly with regards to both individual differences as well as larger scale cultural differences (Pedersen, 1991a).

One way of describing these larger cultural differences and similarities involves the concept of "cultural fit," which is a function of the closeness or level of similarity or difference between the home culture and new host culture (Ward & Chang, 1997). Cultural fit has been shown to be an important factor in the level of stress international travelers experience, as in the study Ward and Chang conducted with American expatriates in Singapore ($n = 139$). Ward and Chang conducted t-tests with large and small cultural discrepancy groups and found that the large discrepancy group, whose scores were most different from local Singaporean scores, had higher rates of depression symptoms and adjustment difficulties ($t = 137$, $p < .01$). In a later study, Ward and Kennedy (1993) found that cultural distance was similarly positively correlated with social difficulty ($r = .39$, $p < .01$) with Malaysian and Singaporean students ($n = 152$) in

New Zealand. Unfortunately, although this avenue of inquiry seems important in identifying a major consideration in clearly establishing a basis for culturally-based stress, little research has been done with international students in the United States.

In addition to the level of similarity or difference between the home and host culture, a number of relevant social factors in the United States, namely racism and prejudice, have also been identified as creating additional stressors for some international students in the United States. In Constantine, Kindaichi, Okazaki, Gainor, and Baden's (2005) qualitative study involving 15 Asian international college women, the research participants reported that they were regularly exposed to stereotypes and prejudicial behavior, particularly with regard to their English speaking skills and accents. Rahman and Rollock (2004) also found the experience of prejudice to be common as they examined the impact of perceived prejudice on scores from the *Center for Epidemiological Studies – Depression Scale* (CES-D) in students from India, Bangladesh, and Pakistan. They found that men ($n = 167$) and women ($n = 32$) both showed positive correlations between perceived prejudice scores and depressive symptoms, although there were statistically significant differences ($z = -2.69, p < .01$) between the men ($r = .23, p < .01$) and women ($r = .65, p < .01$), which suggested that women may be much more affected by racism and prejudice. In a larger study involving international students from China, India, Korea, Taiwan, and Hong Kong ($n = 354$), Wei et al. (2008) found that perceived discrimination was positively correlated with both the level of perceived general stress ($r = .20, p < .001$) as well as depressive symptoms ($r = .64, p < .001$). Although international students in the United States seem to be differentially affected by the level of racism and prejudice in the United States depending on their ethnic and cultural background, these results indicate that it is still a major consideration for many students. The reality of racism and prejudice in the United States is

particularly difficult for international students as they struggle to make sense of the new

environment and surroundings and are affected by it not only as they are perceived as a visible

minority in the United States, but also as people who come from other countries and non-native

speakers of English (Constantine et al., 2005).

Clearly there is a wide range of stressors that are characteristic of the difficulties

associated with living and studying in the United States. Although many of these challenges are

similar to those experienced by other travelers, the unique circumstances of international

students demand that both individual as well as contextual considerations be taken into

consideration in the ongoing efforts to understand the wide range and impact of the acculturative

stressors with which international students in the United States must deal.

Social Support

In spite of the challenge of attempting to arrive at research conclusions considering the

many different experiences students from around the world have in the United States, research

has shown that as a group international students are all confronted, albeit to varying degrees,

with the same challenge of needing to develop a network of social support to assist with the

various difficulties and strains related to living in a different culture (Arthur, 2004; Church,

1982; Pedersen, 1991a; Ward & Kennedy, 2001). Schmitt et al. (2003) concluded that the sense

many international students have of being different from the majority culture leads many

international students to look primarily to each other for support and assistance during their

studies in the United States.

In one of the earliest formulations outlining the benefits of belonging to a separate and

supportive community, Cobb (1976) developed a theory that social support provides a benefit in

moderating stress and difficulties by assisting people to deal more effectively with a wide range

of medical and health problems. Building off this initial formulation, Cohen and Willis (1985)

later developed the "stress buffering hypothesis," which posits that social support supplies a

buffer to counteract the negative effects of stressful events. Long recognized to have a major

benefit for coping and adaptation, the stress buffering effects of social support are clearly

important to consider with international students in the United States (Brown & Harris, 1978;

Leavey, 1983; Taylor, 2007).

Research has long demonstrated that perceived social support and actual support have

different roles (Ross, Lutz, & Lakey, 1999; Sarason, Shearin, Pierce, & Sarason, 1987). In one of

the earlier studies in the area, Wethington and Kessler (1986) found in a national survey (n =

1,269) that perceived support (β = -0.299, no p reported) was more effective in predicting

positive adjustment to stressful life events than received support (β = -0.173, no p reported). In a

study involving 702 university students, Buote et al. (2007) found that the quality of new

friendships was positively correlated with social adjustment (r = .51, p < .001), as well as being a

key predictor (β = .24, p < .001), along with the quantity of new friendships (β = .08, p = .02), in

overall adjustment to life and university studies. Adelman (1988) developed a theoretical model

that proposed that perceived support allows university students to better manage the changes and

deal with the difficulties involved in living and studying in a new setting. Lakey and Dickinson

(1994) similarly found that perceived support was negatively correlated with distress (r = -.37, p

< .01) as measured on the *Beck Depression Inventory* (BDI) (Beck, Ward, Mendelson, Mock, &

Erbaugh, 1961) in a sample of 118 American freshmen who had moved away from home to

attend college.

Looking specifically at research done regarding the benefits of social support for

international students, social support has been determined to be of fundamental importance for

international students' adaptation and is also an important factor in general well-being.

Mallinckrodt and Leong (1992) claimed that "social support provides a powerful coping resource

for persons experiencing stressful life changes, including the stress of adjusting to an unfamiliar

culture" (p. 71), and Hayes and Lin (1994) proposed that moving to the United States and the

accompanying isolation is responsible for a profound sense of loss that many international

students experience. Lee, Koeske, and Sales (2004) found in their study with 74 Korean students

that an interaction between stress and perceived social support was a statistically significant

predictor for psychological distress (β = -1.47, p = .02; r^2 increment = .05), which is consistent

with the stress buffering hypothesis. Similarly, in a study involving Chinese students (n = 64) in

Japan, Jou and Fukada (1995) found that the greater the difference between needed and actual

support from professors (r = -.55, p < .01) and host country students (r = -.52, p < .01), the lower

the level of adjustment to Japan.

Thus, the role of social support is a very important area of research with international

students and an important aspect in efforts to have a better understanding of how international

students cope with the transition to living and studying in the United States. Further emphasizing

this, the presence of social support has been shown to be associated with less emotional distress.

In a study with 242 Japanese high school exchange students in the United States, Furukawa,

Sarason, and Sarason (1998) found that 80% (n = 193) of the sample reported high levels of

emotional distress after six months of exposure to acculturative stressors, although a higher level

of social support and other assistance was associated with lowered levels of distress (paired t-test

t^a = 10.16, p < 0.001). Yang and Clum (1994) found that social support was negatively correlated

with overall life stress (r = -.38, p < .001) in a study involving 100 Asian international students

and social support was found to be a moderator between life stress and suicide ideation (life

stress alone β = -.27, p < .001 vs . including social support as a modifier β = -.38, p = .001). In a study involving 440 international students in the Eastern United States, Sumer, Poyrazli, and Grahame (2008) found that social support was negatively correlated with both depression (r = -.57, p < .01) and anxiety (r = -.59, p < .01), while Misra et al. (2003) found that social support was negatively correlated with academic stress (r = -.42, p < .01) in a study involving 143 international students.

Moving away from looking solely at the overall impact social support has on academic as well as on the general stress international students experience, there is a small, yet important, body of work that considers the source of social support as an important consideration. Among the earliest efforts to explore the role of different sources of social support, Bochner's Functional Model of Friendship (Bochner et al., 1977) proposed that there are three different social support networks that international students access during their studies: (a) a monocultural group of co-national students from the same country, who are the primary group of friends and assist with home culture identity maintenance, (b) a bicultural group of Americans, or host nationals, for academic and professional purposes, and (c) a multicultural group of international students from other countries who play an important role in recreational and entertainment activities. In a later study intended to test these conclusions, Furnham and Alibhai (1985) arrived at similar results with a sample of 140 students from around the world who were studying at several universities in London. In spite of the important role this line of research has revealed regarding the important role other international students play in providing support, the majority of research on international student support conducted since then has focused almost exclusively on the impact of co-national and host national support, with little or no effort expended on gaining a deeper understanding of the influence and impact of support of other international students. Although

Zane and Mak (2003) also identified this shortcoming in the literature, no further studies were identified or real progress made to examine how the presence and extent of social support from other international students affects psychological and sociocultural adjustment to the United States.

Of these three sources of social support, the co-national support system is the most widely studied. Kang (1972) was among the first to outline how Chinese students in the United States bonded together to create a self-sustaining social network to provide assistance and support to one another. In a later study, Sykes and Eden (1985) identified the important contribution of co-national support and classmates in dealing with stress in a study with a group of American students in Israel ($n = 45$), which showed a strong negative correlation between co-national perceived support and stress ($r = -.56$, p not reported). Bektas et al. (2009) came upon similar results with a sample of Turkish students in the United States (n = 124) that found support from other Turkish students to be a predictor of psychological adaptation ($\beta = 1.62$, $p < .05$). These studies seem to indicate that being around other culturally similar individuals encourages the use of culturally relevant ways of dealing with stress as well as allowing for a respite from the requirements of having to function in a different language and culture. On the other hand, in a study with 141 international students, Poyrazli et al. (2004) found that students who socialized primarily with non-Americans reported more acculturative stress as opposed to those who socialized primarily with Americans ($F(2, 136) = 7.22$, $p < .01$). This would seem to indicate that relying only on the co-national support system may at times play a part in increasing acculturative stress, presumably by impeding the development of host national ties and intercultural competencies.

A number of studies examining social support from host culture people have found the contact to be associated with a decrease in international student psychological problems and adaptation difficulties. Furnham and Li (1993) found in a study with Chinese immigrants in Britain (*n* = 70) that first generation immigrants who reported fewer English friends were more likely to report more symptoms of depression on the *Beck Depression Inventory* (Beck et al., 1961) (*r* = .28, *p* < .05). In two different studies involving Malaysian and Singaporean students in New Zealand, Searle and Ward (1990) found that an increase in the amount of contact with host nationals was correlated with a decrease (*r* = -.29, *p* < .05) in depressive symptoms on the *Zung Depression Scale* (Zung, 1965) (*n* = 105), while Ward and Kennedy (1993) found that social difficulties were negatively correlated with increased contacts with host nationals (*r* = -.45, *p* < .05) in a study involving Malaysian (*n* = 115) and Singaporean (*n* = 30) students. Chapedelaine and Alexitch (2004) similarly found a negative correlation between local contacts and distress during the transition in a sample of 156 male international students enrolled at a university in Canada. The study found that social interactions with host people was negatively correlated (*r* = -.44, *p* < .001) with difficulties in cross-cultural interactions. This was found to be the case even though there were no statistical correlations regarding the closeness of the contact with host nationals, suggesting that even relatively distant relationships with host students can prove to be beneficial as a source of invaluable information on the academic and campus culture.

In this vein, much of the international education policy of the United States is based on the idea that international students and American students learn and support each other, which in turn leads to an expanded worldview and provides mutual benefits for both groups (Bureau of Educational and Cultural Affairs, U.S. Department of State, 2010). This position is a direct offshoot of Amir's (1969) "contact hypothesis," which posits that simply being around culturally

different people leads to an increase in positive perceptions of and interactions with culturally

different groups. Although the contact hypothesis is based in the idea that being in close contact

allows for beneficial intercultural learning and increased acceptance to take place, Amir noted

that "the nature of this change is not necessarily in the anticipated direction: 'Favorable'

conditions do tend to reduce prejudice, but 'unfavorable' conditions may increase intergroup

tension and prejudice" (p. 319). Still, in one of the few studies directly addressing the contact

hypothesis with international students, Kamal and Maruyama (1990) found evidence of the

positive aspect of contact with host students in a study with Qatari students in the United States

($n = 223$) who reported an increase in positive perceptions of both the students' views of

Americans ($r = .32, p < .01$) as well as the Qatari students' view of American perceptions of

them ($r = .31, p < .01$). These relatively strong correlations were unexpected, particularly

considering that these results were independent of the level of substantive contact the Qatari

students actually had with Americans and seem to provide an argument for the benefits of

intercultural and international contact to increase tolerance and acceptance.

Contact with host students has not always been found to be beneficial, however, and there

is substantial evidence that host national support can be problematic. A number of studies have

shown that developing substantial contacts with host national students is difficult for

international students in general (Greenland & Brown, 2005; Poyrazli et al., 2004; Schmitt et al.,

2003). Spencer-Oatey and Xiong (2006) found that Chinese students ($n = 126$) in the United

Kingdom considered making friends with British people to be a considerable difficulty in their

studies and second only to language difficulties as a source of stress and problems. Similarly,

Cross (1995) found that the presence of local social support had no statistically significant

impact on coping and stress when comparing East Asian students ($n = 71$) and American

students (n = 79) at the University of Michigan, instead finding that effective coping for the international students was more related to identification with an interdependent and collectivist cultural orientation in a path analysis of perceived stress (b = .46 and b = .04 respectively, z = 2.5, p < .05) than any other characteristic.

Lastly, very little work has been done examining the importance of other international students. Although some studies seem to make the assumption that having a similar geographical origin is similar enough to consider a uniform and coherent sample for studying diverse groups of international students (Frey & Roysircar, 2006; Li & Gasser, 2005; Rahman & Rollock, 2004; Wei et al., 2008), no identified studies have specifically considered how multinational or multicultural social networks affect coping and adaptation. Even though Bochner's Functional Model of Friendship (Bochner et al., 1977) examined how international social networks include a variety of people from different cultures, no substantive efforts have been made since these studies to investigate the role these networks might play in specifically addressing the challenges of acculturation and acculturative stress. Adelman (1988) speculated that there are multiple benefits from having relationships with other international students, including: (a) increased access to additional knowledge based resources, (b) the sharing of information about coping, and (c) receiving emotional benefits, such as emotional catharsis and a release of frustration. In spite of this wide range of possible benefits, a comprehensive search of the literature failed to identify any empirical studies specifically examining whether or not this is the case.

Consequently, although the major emphasis on social support for international students has been on co-national and host national students, it is clear that additional information is also needed regarding the impact of social support originating from other international students. Considering the lack of investigation into the influence and importance of these different sources

of social support, as well as the connections between these different sources and acculturative stress, it will be important to examine the different sources of social support in order to gain a better understanding of how the source of social support interacts with acculturation orientation in predicting international student acculturative stress.

Summary

In the expanding research literature on the experiences of international students in the United States, it is clear that the bidimensional model for addressing culture change is an important and valuable starting point to examine the challenges international students face when moving to the United States. Although there is a considerable body of knowledge on the many facets of being an international student, there are a number of difficulties involved in applying the widely accepted acculturation models. Although international students are certainly faced with the challenge of dealing with a whole host of changes, including keeping cultural connections with home and forming new connections in the United States, there is also the matter of developing and expanding new social supports and mechanisms for dealing with these changes. It is similarly clear that being an international student in the United States is characterized by difficulties both adapting to the cultural differences, as well as negotiating the new interpersonal and social challenges. Taking these differences into consideration, the current study proposes to explore how different aspects of dealing with cultural change, as well as how the source of social support, affects the overall level of acculturative stress that international students report.

The variables in this study were selected due to the extensive research that has been reviewed here showing a relationship between acculturation orientation and acculturative stress. Similarly, there is a large body of work demonstrating that social support has a buffering effect

on the amount of stress. In spite of the work that has been done looking at the positive impact of social support on dealing with stress and difficulties, there has been little investigation of the influence of social support from other international students on the level of acculturative stress experienced by international students. Building on this large body of research involving international students in the United States, the current study intends to investigate further the impact of the source of social support and its relationship to acculturative stress, while taking into consideration different acculturation attitudes and orientations.

Chapter 3: Methodology

The current study attempted to integrate the many different threads of research on international students with regards to acculturative stress, acculturation orientation, and social support. Although a number of limitations of these areas were identified in Chapter 2, the current study incorporated many of these critiques in an effort to gather more information and a better understanding of international students' experiences in the United States, with the overarching goal of providing valuable information to improve counseling interventions and strategies with international students.

Research Design

The current study used elements of a correlational study, comparison of group means, and a hierarchical regression analysis in a quantitative descriptive research design. Data was gathered from currently enrolled international students at several universities in the United States.

Sampling and Data Collection Procedures

The focus of this study is on international students with F-1 student and J-1 exchange visitor temporary nonimmigrant visas in the United States. The specific sample for this research project were international students enrolled at three public universities in Missouri and three public universities in Iowa, Texas, and Oklahoma. In collaboration with the international student offices at these universities, each international student office sent out a message to currently enrolled international students using electronic mailing lists to distribute an invitation to participate in the research project. The email invitation (Appendix A) invited international students to take part in a study on the challenges confronting international students living and studying in the United States and the impact of friends and the support they provide. The

invitation included information on the purposes of the study and informed consent statements. After agreeing to the terms of the student, participants were directed to an online survey tool, hosted on www.surveymonkey.com, where the items regarding demographic information, acculturation orientation, acculturative stress, and source of social support were posted. study information and instruments were posted. Approximately two weeks later, reminder email invitations again with general information and a link to the online survey, were sent to the international student offices to be forwarded to enrolled international students. Again, after agreeing to the terms of the study, participants then had access to the study items. The informed consent is found below in Appendix B and copies of the instruments are included in Appendix C. As an incentive for participation, 10 $50 gift certificates were offered. To ensure the anonymity of the data from the survey, respondents were forwarded to a second web page to enter their contact information if they wished to be entered in the gift certificate drawing. After the conclusion of the study the recipients were randomly selected from the respondents.

Instrumentation

   Demographics. The following demographic information was collected: (a) gender, (b) age, (c) academic level (graduate or undergraduate), (d) academic program, (e) relationship status, (f) sexual orientation, (g) length of time in the United States, (h) length of time on current campus, (i) country and region of origin, (j) religion, (k) ethnicity, (l) race, (m) respondent's perception of the level of cultural fit, or similarity between their home culture and the host American culture as discussed above in Chapter 2, which was quantified using three questions using five point Likert-type scales:

   1. How similar is your home culture to American culture? (*not at all similar* to *very similar*);

2. How similar are academic expectations from your home country to American expectations? (*not at all similar* to *very similar*); and

3. How similar are social and recreational activities from your home country to American activities? (*not at all similar* to *very similar*), and (n) respondents' view of their level of comfort with the English language, which was quantified using three questions using five point Likert-type scales:

1. What is your present level of English? (*not proficient* to *very proficient*);

2. How comfortable are you communicating in English? (*not comfortable* to *very comfortable*); and

3. How often do you communicate in English? (*rarely to never* to *almost always to always*) (Yeh & Insoe, 2003).

Index of Life Stress. Acculturative stress was measured using a slightly modified version of the *Index of Life Stress* (ILS) (Yang & Clum, 1995). The ILS was developed to measure culturally-based stressors for international students in the United States and measures five areas of stress: (a) concern about finances and desire to stay in the United States, (b) language difficulties, (c) interpersonal stress, (d) stress from new culture and desire to return to one's own country, and (e) academic pressures. Two items from the ILS were modified: removal of an item on owing money that was not reported to load on any of the subscales (Yang & Clum, 1994); and changing the item that reads "It's hard for me to develop *opposite-sex* relationships here" (emphasis added) to "It's hard for me to develop *romantic* relationships here" (emphasis added). The modified ILS consists of 30 items scored on a four point Likert-type scale, ranging from *never* to *often*. Sample items include: "I worry about my academic performance", "My English makes it hard from me to read articles, books, etc", "I don't want to return to my home country,

but I may have to do so", and "I don't like the things people do for entertainment here". Test-retest reliability was $r = .87$ ($p < .0001$) in the initial study (Yang & Clum, 1995), while other studies have found Cronbach's alpha reliability to range from .83 to .94 (Chen et al., 2002; Misra et al., 2003). Kuder-Richardson 20 internal consistency in the initial study was .86. Evidence of concurrent validity was demonstrated with correlations with the *UCLA Depression Scale* ($r = .51$, $p < .001$), the *Zung Depression Scale* ($r = .41$, $p < .001$) and the *Beck Hopelessness Scale* ($r = .37$, $p < .001$) (Yang & Clum, 1995). The ILS has been used in studies in the United States with East Asian international students (Misra et al., 2003) and a general international student population (Chen et al.).

Because racism and prejudice have been shown to be important sources of distress for many international students (Constantine et al., 2005; Rahman & Rollock, 2004; Wei et al., 2008), the "Perceived Discrimination" subscale (PD) from *The Acculturative Stress Scale for International Students* (Sandhu & Asrabadi, 1998) was used to measure the level of distress associated with these factors. The Perceived Discrimination subscale consists of eight items scored on a five point Likert-type scale, ranging from *strongly disagree* to *strongly agree*. Cronbach's alpha reliability for the subscale has been found to range from .90 to .92 (Jung, Mecht, & Wadsworth, 2007; Wei et al., 2008). Sample items include: "Others are biased toward me", "I feel that I receive unequal treatment", and " "I feel that my peole are discriminated against". Construct validity was demonstrated in Jung, et al.'s study which found a correlation of $r = .29$ ($p < .01$) between depressive symptoms and perceived discrimination in their study with international students in the United States ($n = 218$), as well as in Wei, et al.'s study involving international students ($n = 354$) which found positive correlations between perceived

discrimination and general stress ($r = .20$, $p < .001$) and depressive symptoms ($r = .64$, $p < .001$) and a negative correlation with self-esteem ($r = -.43$, $p < .001$).

In addition to the ILS and subscale from the ASSIS, the *Mental Health Inventory-5* (MHI-5) (Berwick et al., 1991) was used in order to quantify the presence of general mental health issues, particularly mood and affective disorders, in an effort to determine if it was relevant in the measurement of acculturative stress. The MHI-5 consists of five items scored on a six point Likert-type scale, ranging from *all of the time* to *none of the time*, with scores calculated by summing the total of the responses. Cronbach's alpha reliability has been shown to range from .74 to .89 in samples of both inpatient and outpatient clinical participants (McHorney & Ware, 1995; Rumpf, Meyer, Hapke, & John, 2001). A cut-off score of 23 was identified by Mean-Christensen, Arnau, Tonidandel, Bramson, and Meagher (2005) using a receiver operating characteristic (ROC) curve analysis that showed the MHI-5 as yielding a sensitivity of 91% for predicting a provisional diagnosis of major depression or panic disorder. Rumpf et al. examined the validity of the MHI-5 using both ROC curve analysis as well as examining the sensitivity, or the ability to correctly identify individuals later diagnosed with a disorder, and specificity, or the ability to correctly identify individuals not having a disorder, and found an overall sensitivity of .83 and specificity of .78. Sample items include: "How much of the time, during the past month, have you been a very nervous person?" and "How much of the time, during the past month, have you felt downhearted and sad?" The MHI-5 has also been used effectively outside the United States, with studies demonstrating its utility in Germany (Rumpf et al.), Japan (Yamazaki, Fukuhara, & Green, 2005), and the United Kingdom (Kelly, Dunstan, Lloyd, & Fone, 2008).

Acculturation Index. Acculturation orientation was measured using the *Acculturation Index* (AI) (Ward & Kennedy, 1994; Ward & Rana-Deuba, 1999). The AI was developed to

assess the two dimensions of the bidimensional acculturation model for individuals living outside

their home culture: (a) relationship to culture of origin (AI-Home) and (b) relationship to host

culture (AI-Host). The two dimensions are measured separately and effectively function as

subscales. While the structure of the AI does allow for the categorization of the results into

Berry's (1980) four acculturation orientation categories (Assimilation, Integration, Separation,

and Marginalization), it can also be scored to have separate continuous levels measuring the

cultural identification of home and host culture, which provides the additional benefit of being

able to conduct a regression analysis with the resulting data (Ward & Rana-Deuba, 1999).

Evidence of validity was indicated in Ward and Kennedy's (1994) initial study involving

expatriate workers from New Zealand and their families ($n = 98$) by showing theoretically

consistent results with the bidimensional model. The subscales were found to be essentially

independent ($r = .23$), further underscoring that although the scales are related, they clearly

measure the two different components of the bidimensional acculturation model. Similarly,

results showed that the greatest amount of social difficulty in adjusting to the new host society

was associated with respondents endorsing a Separation orientation, followed by a

Marginalization orientation, while the least amount of social difficulty was associated with either

an Integration or Assimilation orientation (all $p < .05$). Another indicator of the utility of the

scale was shown by higher Cronbach's alpha reliability of the two subscales, co-national

identification (.93) and host country identification (.96), compared to other bidimensional scales,

which demonstrated Cronbach's alphas in the .68 to .87 range (Berry et al., 1989). The AI has

been used in research with international students in Australia (Jennings, Forbes, McDermott, &

Hulse, 2006), international aid workers in Nepal (Ward & Rana-Deuba, 2000), and international

students in the United States (Wang & Mallinckrodt, 2006).

The AI consists of 21 items on topics such as clothing, food, religious beliefs, language, and political ideology and is scored on a seven point Likert-type scale, ranging from *not at all similar* to *very similar*. The items are presented for participants to rate their level of cultural identification to the topic as compared to co-nationals on one scale and to Americans on the other, with scale scores being the sum of the items of the two subscales. Cronbach's alpha reliability estimates for the AI ranged from .85 to .95 for co-national identification and .89 to .92 for host national identification (Jennings et al., 2006; Ward & Rana-Deuba, 1999; Wang & Mallinckrodt, 2006; Zheng, Sang, & Wang, 2004).

Index of Sojourner Social Support. Source of social support was measured using a modified version of the *Index of Sojourner Social Support* (ISSS) (Ong & Ward, 2005). The ISSS was developed to identify the members of social networks for students, business people, and foreign service personnel living and working abroad (McGinley, 2008; Ong & Ward, 2005; Spiess & Stroppa, 2008), with Cronbach's alpha reliability estimates ranging from .89 to .96 (McGinley, 2008; Ong & Ward, 2005; Spiess & Stroppa, 2008). Validity was shown through positive correlations between social support and perceived socioemotional support ($r = .72, p < .001$) and perceived instrumental support ($r = .61, p < .001$), both from the *Inventory of Socially Supportive Behaviors* (Barrera, Sandler, & Ramsay, 1981) and negative correlations with interpersonal distrust ($r = -.18, p < .05$) from the *Doubt about the Trustworthiness of People Scale* of *The Social Life Feeling Scale 2* (Scheussler, 1982), and depression ($r = -.18, p < .05$) from the *Zung Self-Rating Depression Scale* (Zung, 1965).

The ISSS consists of 18 items scored on a five point Likert-type scale, ranging from *no one would do this* to *many would do this*, with scores resulting as the mean of the items for each category of support. Sample items include topics such as assistance with understanding local

culture and food, sharing good times and bad, spending time chatting, and giving assistance with difficulties. Respondents are asked to consider each item and evaluate how likely it would be for someone to perform the helpful behavior. The answer set was then modified so respondents answered each question with regards to co-nationals (ISSS-Home), Americans (ISSS-Host), and other international students (ISSS- Other International Students). This provided data regarding the participants' overall social support network for these three groups, as well as information regarding the levels of overall social support relevant to this study.

Description of Study Instruments

See Table 3 for a summary of the instrument data. The mean ILS score was 2.16 (*SD* = .02), with a Cronbach's alpha reliability estimate of .86. Using a five point Likert-type scale, the mean PD score was 2.38 (SD = .85) with a Cronbach's alpha reliability estimate of .91. The mean total MHI-5 score was 13.64 (*SD* = 4.33), with a Cronbach's alpha reliability estimate of .84. The AI-Home had a mean of 4.64 (*SD* = 1.17) with a Cronbach's alpha reliabilty estimate of .94. The AI-Host had a mean of 3.50 (*SD* = .90) and a Cronbach's alpha reliability estimate of .89. The ISSS-Home had a mean of 3.42 (*SD* = .75) with a Cronbach's alpha reliability estimate of .95. ISSS-Other International Students had a mean of 2.85 (*SD* = .78) and a Cronbach's alpha reliability estimate of .95. ISSS-Host had a mean of 2.92 (*SD* = .74) and a Cronbach's alpha reliability estimate of .94. These reliability estimates all indicated strong evidence of reliability (Anastasi & Urbina, 1997).

Table 3

Instrument Results Summary

Instrument	Mean	SD	Cronbach's alpha
ILS	2.16	.02	.86
PD	2.38	.85	.91
MHI-5	13.64	4.33	.84
AI-Home	4.64	1.17	.95
AI-Host	3.50	.90	.89
ISSS-Home	3.42	.75	.95
ISSS-Other international students	2.85	.78	.95
ISSS-Host	2.92	.74	.94

Description of Study Participants

In the demographic summary, it is important to note that the totals will not always be of equal size due to skipped questions and unreported data on the part of some study participants. See Table 4 at the conclusion of this chapter for a summary of the study participants demographic data. The sample was almost evenly divided between by sex, with slightly more males ($n = 341$, 52%) than females ($n = 312$, 48%). Ages ranged from 17 to 52 with a mean age of 25.06 ($SD = 5.069$). The participants were from 71 countries, which were divided into the following regional categories: Asia 69.4% ($n = 450$), Europe 11.4% ($n = 75$), Middle East 7.7% ($n = 50$), Latin America 6.2% ($n = 40$), and Africa 3.4% ($n = 22$). Although the demographic questions did include two items on the participants' racial and ethnic identity, the responses

varied too greatly for any categories or groups to be formed. The questions seemed to confuse many of the participants. For the item inquiring about the respondent's race, 88 (13.4%) participants skipped the question, while answers varied greatly and included responses such as skin color, country or continent of citizenship, and religion. Similarly, "Ethnicity" was skipped by 196 (29.8%) participants and also included a wide range of similarly un-categorizable responses. Many of the participants gave the same response to both questions. The participants reported being predominantly single (63.3%, $n = 410$), followed by married or partnered 15.3% ($n = 99$), in a relationship 18.5% ($n = 120$), living together 2% ($n = 13$), and divorced or separated .6% ($n = 4$). A large majority of the sample reported being heterosexual (93.2%, $n = 604$), with bisexual participants at 2.5% ($n = 16$), and gay/lesbian 1.5% ($n = 10$). The participants reported the following religious identity: Atheist or none 34.3% ($n = 222$), Christian 23% ($n = 149$), Hindu/Jain 16.7% ($n = 108$), Muslim 10% ($n = 65$), Buddhist 5.7% ($n = 37$), spiritual but not religious 1.4% ($n = 9$), and Jewish .3% ($n = 2$). The participants reported having spent from two weeks to 9 years in the United States with a mean of 1.86 years ($SD = 1.92$) and having spent from two weeks to 9 years on their current campus with a mean of 1.28 years ($SD = 1.43$).

As indicated above, participants came from three public universities in Missouri, which comprised 9.9% ($n = 65$), 13.2% ($n = 87$), and 23.9% ($n = 157$) of the sample, with participants indicating attendance at a public university in Oklahoma at 24.5% ($n = 161$), Texas at 16.7% ($n = 110$), and Iowa 10% ($n = 66$). Students were roughly evenly divided between undergraduate (33.3%, $n = 219$), Master's (35.3%, $n = 232$), and Doctoral (31.1%, $n = 204$). Students identified roughly 85 majors or programs of study, although a lack of consistency in program names across different universities made it hard to determine the actual number of different academic programs. By category, participants ($n = 642$) reported the following academic programs:

engineering and technology 41.8% (n = 271), business 15.9% (n = 103), natural sciences 13.4%

(n = 87), social sciences 10.2% (n = 66), humanities 5.7% (n = 37), education 4.5% (n = 29),

media studies and journalism 4.2% (n = 27), health 3.1% (n = 20), and undeclared .3% (n = 2).

Two final variables were calculated from the demographic questions. The mean score

was used to measure both cultural fit, or the participants' perception of the similarity of their

home culture with American culture, as well as the participants' perception of their English

language abilities. Using a 1 to 5 ("*not at all similar*" to "*very similar*") Likert-type scale, mean

cultural fit was 2.36 (*SD* = .66). The mean English score was higher at 4.01 (*SD* = .75) on a 1 to

5 ("*not at all comfortable*" to "*very comfortable*") Likert-type scale, reflecting the overall

samples' high level of comfort and confidence in English language abilities.

Summary

The current study brought together a number of measures to arrive at research

conclusions regarding international students' acculturative stress and the impact of acculturation

orientation and source of social support. The involved instruments have all been shown to be

valid and reliable measures and contribute to the understanding of the stressors involved in

studying in the United States.

Table 4

Demographic Data Summary

	N	**Percentage**
Gender		
Male	341	52%
Female	312	48%
Regional Origin		
Asia	450	69.4%
Europe	75	11.4%
Middle East	50	7.7%
Latin America	40	6.2%
Africa	22	3.4%
Relationship Status		
Single	410	63.3%
Married/partnered	99	15.3%
In a relationship	120	18.5%
Living together	13	2%
Divorced or separated	4	.6%
Sexual orientation		
Heterosexual	604	93.2%
Bisexual	16	2.5%
Gay/lesbian	10	1.5%

Religion

Atheist or none	222	34.3%
Christian	149	23%
Hindu/Jain	108	16.7%
Muslim	65	10%
Buddhist	37	5.7%
Spiritual but not religious	9	1.4%
Jewish	2	.3%

University Attended

Missouri 1	65	9.9%
Missouri 2	87	13.2%
Missouri 3	157	23.9%
Oklahoma	161	24.5%
Texas	110	16.7%
Iowa	66	10%

Educational level

Bachelor's	219	33.3%
Master's	232	35.3%
Doctoral	204	31.1%

Program of Study

Engineering and Technology	271	41.8%
Business	103	15.9%
Natural Sciences	87	13.4%

Social Sciences	66	10.2%
Humanities	37	5.7%
Education	29	4.5%
Media Studies and Journalism	27	4.2%
Health	20	3.1%
Undeclared	2	.3%

Chapter 4: Results

This chapter presents the data that were collected and is divided into several sections: (a) study hypotheses, (b) an overview of the data analysis procedures, (c) a descriptive statistical analysis of the study sample and the study instruments, and (d) the analyses utilized to investigate the study hypotheses.

Study Hypotheses

Hypothesis 1 - There will be a negative or inverse relationship between perceived social support and acculturative stress, that is, as perceived social support increases, acculturative stress will decrease and vice versa.

Hypothesis 2 - Acculturative stress will be associated with acculturation orientation in the following ways:

Hypothesis 2a. International students with positive home and host country culture identifications will show the lowest acculturative stress.

Hypothesis 2b. International students with either positive home or host country culture identifications will show intermediate acculturative stress.

Hypothesis 2c. International students with negative home and host country culture identifications will show the highest acculturative stress.

Hypothesis 3 – Acculturative stress can be predicted using measures of acculturation orientation and sources of social support in the following ways:

Hypothesis 3a. Acculturative stress will be lowest with international students who: (a) have positive levels of acculturation identification to both home and host culture, and (b) receive social support from all three sources (home, host, and other international students), and;

Hypothesis 3b. There will be an interaction between acculturation orientation and

source of social support that contributes to the prediction model and the level of

acculturative stress will be less with international students who: (a) have positive

levels of acculturation identification to home and host cultures, and (b) perceive a

positive level of social support from home and host source.

Data Analysis Procedures

Data were collected via an online survey. After the study collection period was closed,

the data were downloaded as an Microsoft Excel formatted data file and then imported into

Statistical Package for the Social Sciences (SPSS) 18.0 for analysis. Two items for the Mental

Health Inventory-5 (MHI-5) were reverse coded, with no other preparatory data coding

necessary. Data analysis required the use of three different analyses to evaluate the study's three

hypotheses.

To test hypothesis 1, Pearson correlations were calculated using acculturative stress and

perceived social support scores to determine if there was a relationship. The source of social

support was examined according to three categories: home country, other international students,

and host country.

To test hypothesis 2, group comparisons were performed using a one-way between-

groups analysis of variance (ANOVA) with planned contrasts to determine if there were

differences between the groups with regards to the level of acculturative stress. Groups were

formed according to participants' scores being above or below the mean of the home and host

culture identification scores as measured by the Acculturation Index (AI). This was done by

using the standardized Z scores. Thus, participants who had culture identification scores above

the mean had a positive score, while those below the mean had negative scores. The three groups

were formed using these standardized scores from the Acculturation Index (AI) home and host culture measures: (a) positive Z scores on home and host culture identifications, (b) positive Z scores for either home or host culture identification, and (c) negative Z scores for both home and host culture identification.

To test hypothesis 3, a hierarchical multiple regression analysis was conducted to develop a model for predicting the criterion variable, acculturative stress. The first step of the regression analysis was to enter in specific demographic data which were theorized by the researcher to have an important contribution to the prediction model. These demographic data were: (a) self-reported English language skills, (b) perceived discrimination, and (c) the total score on the MHI-5. These specific elements were chosen because they were theorized to have the most immediate and direct impact on the skills and personal qualities necessary to build interpersonal relations relevant to social support, while taking into account mood or anxiety disturbances and the effect of prejudice as a societal pressure exerting pressure on their presence in the United States. The second step of the analysis added the five main effects variables: identification with home culture, identification with American culture, level of perceived support from co-nationals, level of perceived support from host nationals, and level of perceived support from other international students. The third step of the analysis extended the model by adding the two interaction effects of source of social support with acculturation orientation: (a) home culture identification by home culture social support, and (b) host culture identification by host culture social support.

Power Analysis and Sample Requirements

Minimum sample size estimate calculations were completed with G*Power, an electronic power analysis application (Faul, Erdfelder, Buchner, & Lang, 2009). The minimum sample size

to test hypothesis 1 was determined to be 314. This sample size calculation is based on an a

priori power analysis for correlations, with an anticipated small effect size of .2 and an alpha

level of .05. The minimum sample size to test hypothesis 2 was determined to be 390. This

sample size calculation is based on an a priori power analysis for a one-way ANOVA omnibus F

test. The effect size is anticipated to be small at .2, with an alpha level of .05 and a power of

80%. The minimum sample size to test hypothesis 3 was determined to be 89. This sample size

was based on an a priori power analysis for a two-tailed linear multiple regression. The effect

size is anticipated to be .15, with an alpha level of .05, a power of 95%, and 11 predictors (three

demographic variables, two acculturation orientation variables, three social support variables,

and two interactions).

A total of approximately 9,800 international students at the six universities received an

invitation to participate in the study, with 1,092 (11.1%) students responding, although this may

be an overestimation of the actual number of students who received the invitation due to bad or

missing email addresses. Of this number, 435 (40%) individuals were eliminated for failing to

complete at least 90% of the items on the instruments involved in the main analyses, of which

279 (25.5%) failed to correctly answer the validity item (e.g. "Please mark this question

'Often.'"). For example, many of the respondents who did not respond correctly to the validity

question scored all the items with the same rating. Validity items are increasingly being used to

identify participants who submit response sets that appear inattentive or stereotyped (Wang &

Mallinckrodt, 2006). Among the remaining respondents, missing data appeared not to have a

pattern and thus was characterized as MCAR (missing completely at random) (McKnight,

McKnight, Sidani, & Figueredo, 2007). For this reason, for those participants who had less than

10% of the data missing, missing values were replaced by the mean of the individual's responses

on the respective instrument. For example, a participant who did not submit answers to three of

the 30 items on the Index of Life Stress (ILS), the three missing items were replaced with the

mean score of that individual participants' response to the ILS. Mean substitution is generally

discouraged as a means for dealing with missing data; however, the limited amount of missing

data and the random nature of the missing data made this procedure less problematic

(Tabachnick & Fiddell, 2007). A further 9 participants were identified as outliers on key

variables such as time spent in the United States or markedly elevated scores on the MHI-5 or

ILS. Two considerations were made before determining participants were outliers: (a)

standardized scores in excess of 3.29 (Tabachnick & Fiddell); and (b) a score value that was

clearly set apart and beyond the responses of the rest of the sample. After this elimination

process, the sample size for the study was reduced to 648 participants.

Preliminary Analyses

All variables were checked for normality of distribution by examining skewness and

kurtosis values for each of the instrument results. As expected with a sample of this size

(Tabachnick & Fiddell, 2007), skewness and kurtosis values were found to differ from 0;

however, all skewness and kurtosis values were between .5 and -.5. While there is concern about

the impact of these values differing from 0, an examination of the expected normal probability

plots and the detrended expected normal probability plots led the researcher to conclude that the

variables had a normal distribution and transformation of the data was not indicated.

Subsequently, in order to determine whether demographic categories such as gender,

university, program of study, academic level, or regional origin influenced the results, ANOVA

tests were computed for each instrument score. The findings revealed no statistically significant

differences between levels of acculturative stress according to sex ($p = .06$), relationship status (p

= .24), sexual orientation (p = .77), university (p = .27), academic level (p = .05), or academic

program (p = .56). A one-way ANOVA revealed a statistically significant difference only

between acculturative stress scores on the ILS for Europeans (M = 1.99, SD = .32) and Asians

(M = 2.20, SD = .42) (F(5, 646) = 3.87, p = .00), with an eta squared effect size of .03, which is a

small effect size (Cohen, 1988). Similarly, a one-way ANOVA revealed a statistically significant

difference only between perceived discrimination scores for Europeans (M = 2.02, SD = .78) and

Asians (M = 2.43, SD = .81) (F (5, 646) = 3.54, p = .00), which also showed a small eta squared

effect size of .03. These differences, however, are not emphasized in part due to the difference in

group size, as well as the relatively small difference in mean. Consequently, acculturative stress

did not seem to be greatly influenced across the demographic variables, thus allowing for the

data to be analyzed as a single group without necessitating further divisions into groups

according to demographic characteristics such as university, program of study, regional origin,

etc.

  Additionally, Pearson correlations were calculated to identify other demographic

variables and their association with acculturative stress. Please see Table 9 for a summary.

Acculturative stress was found to have a positive relationship with a number of demographic

characteristics: (a) age (r = .10, p =.01); (b) time spent in the United States (r = .08, p = .03); (c)

score on MHI-5 (r = .46, p = .00); and (d) perceived discrimination (r = .56, p =.00).

Acculturative stress was found to be negatively correlated with participant perceptions of both

their English language ability (r = -.29, p = .00) as well as cultural fit, or the level of cultural

similarity between home and host culture (r = -.14, p = .00).

  These results indicate that acculturative stress was higher for those individuals who were

older, had spent more time in the United States, and had higher levels of mood and anxiety

disturbances. Similarly, this indicates that acculturative stress was lower for those individuals who had more confidence in their English language abilities, viewed their home culture as being more similar to the United States, had positive cultural identifications with both their home culture as well as the host American culture, and had broad based social support from people from their home country, other international students, and Americans. It is important to note, however, that a number of these associations, particularly age and time spent in the United States, were very small and thus likely of little practical significance.

Major Analyses

Pearson correlations were calculated to test hypothesis 1. Acculturative stress was found to have a negative relationship with positive cultural identifications: home ($r = -.09$, $p = .03$) and host ($r = -.26$, $p = .00$). Acculturative stress was similarly found to be negatively correlated with all three sources of social support: home ($r = -.15$, $p = .00$), other international students ($r = -.18$, $p = .00$), and host ($r = -.34$, $p = .00$). Consequently, lower levels of acculturative stress was found to be associated with both positive cultural associations as well as higher levels of social support from all three sources.

In order to test hypothesis 2, concerning the association between group differences and acculturative stress, a one-way ANOVA with planned contrasts was performed to explore the potential group differences across acculturation orientation in levels of acculturative stress. Participants were divided into three groups by using the standardized Z scores on the two acculturation orientations according to the resulting positive and negative standardized values: (a) Group 1 – positive home and host cultural identification; (b) Group 2 – positive home or host (but not both) cultural identification; and (c) Group 3 – negative home and host cultural identification. Homogeneity of variance was assumed due to a nonsignificant Levene's Test for

Equality of Variance value (F_{Levene} = .45). There was a statistically significant difference at the *p*

= .00 level in ILS scores for the three groups: (F (2, 654) = 14.12, *p* = .00). The eta squared

effect size was .04, which is generally determined to be a small effect size (Cohen, 1988). Post-

hoc comparisons using the Tukey HSD test indicated that the mean score for Group 1 (M = 2.03,

SD = .41) was significantly different from both Group 2 (M = 2.18, SD = .40, *p* = .00) and Group

3 (M = 2.26, SD = .42, *p* = .00) but that Groups 2 and 3 did not differ significantly. Thus,

students who reported positive home and host cultural identifications had lower levels of

acculturative stress compared to students who had negative cultural identifications with either the

home or host culture. See Table 5.

Table 5

Descriptive Statistics of Level of Acculturative Stress and Acculturation Orientation

Acculturation Orientation	N	Mean	SD
Group 1 - Positive home and host	184	2.03	.40
Group 2 - Positive home or host (not both)	316	2.18	.40
Group 3 - Negative home and host	148	2.26	.41

Another one-way ANOVA was then conducted to compare acculturative stress scores for

the participants in Groups 2 and 3 between: (a) Group 2a - those who had positive home cultural

identification and negative host cultural identification; (b) Group 2b - those who had negative

home cultural identification and positive host cultural identification; and (c) Group 3 - those who

had negative home and host cultural identifications. There was a statistically significant

difference in ILS scores for the three groups: (*F* (2, 460) = 5.85, *p* = .00). Post-hoc comparisons

using the Tukey HSD test indicated that the mean score for Group 2b (*M* = 2.11, *SD* = .43) was

significantly different from both Group 2a (*M* = 2.25, *SD* = .36, *p* = .01) and Group 3 (*M* = 2.26,

SD = .42, *p* = .01) but that Groups 2a and 3 did not differ significantly. Thus, students who

reported positive host cultural identifications had lower levels of acculturative stress compared to

students who had negative cultural identifications with the host culture. See Table 6.

Table 6

Descriptive Statistics of Level of Acculturative Stress and Acculturation Orientation –
Positive and Negative Host Acculturation Orientation

Acculturation Orientation	N	Mean	SD
Group 2a - Positive home and negative host	172	2.25	.36
Group 2b - Negative home and positive host	143	2.11	.43
Group 3 - Negative home and host	148	2.26	.41

A independent-samples t-test was then conducted to compare acculturative stress scores

between (a) Group 1 – the participants who had positive home and host cultural identification,

and (b) Group 2b – the participants who had negative home and positive host cultural

identification. There was no significant difference in scores for Group 1 (M = 2.03, SD = .40)

and Group 2b (M = 2.11, SD = .43), t (325) = 1.77, p = .08 (two-tailed). The magnitude of the

differences in the means (mean difference = .08, 95% CI: -.17 to .01) was very small (eta

squared = .01). This indicated that students who reported positive host cultural identifications did

not differ significantly on their level of acculturative stress between students who had positive or

negative home cultural identifications.

A one-way ANOVA was performed to explore the impact of sources of social support on

levels of acculturative stress, as measured by the ILS. Participants were divided into four groups

using the Z scores with different sources of social support according to the positive and negative

standardized values: (a) Group 1 – positive home, international students, and host culture social

support; (b) Group 2 – positive home and host social support with negative international student

support; (c) Group 3 - positive home or host (but not both) social support; and (c) Group 4 –

negative home, international student, and host social support. Homogeneity of variance was

assumed due to a nonsignificant Levene's Test for Equality of Variance value (F_{Levene} = .23).

There was a statistically significant difference at the p = .00 level in ILS scores for the four

groups: (F (3, 653) = 21.10, p = .00).The eta squared effect size was .09, which is a medium

effect size (Cohen, 1988). Post-hoc comparisons using the Tukey HSD test indicated that the

mean score for Group 1 (M = 1.97, SD = .41) was significantly different from Group 3 (M =

2.21, SD = .37, p = .00) and Group 4 (M = 2.27, SD = .41, p = .00) and that Group 2 (M = 2.06,

SD = .40) and Group 4 were also different at a statistically significant level (p = .02). These

results indicate that students with social support from all three groups have the lowest levels of

acculturative stress, followed by those students who have social support from home and host

sources.

Table 7

Descriptive Statistics of Level of Acculturative Stress and Source of Social Support

Source of Social Support	N	Mean	SD
Group 1 - Positive home, other international students, and host	173	1.97	.41
Group 2 - Positive home and host, negative international students	33	2.06	.40
Group 3 - Positive home or host (not both)	250	2.21	.37
Group 4 - Negative home, other international students, host	192	2.27	.41

Subsequently, a two-way ANOVA was performed using both the three acculturation orientation groups and the four source of social support groups to determine if there was an interaction effect associated with the level of acculturative stress, in order to test hypothesis 2b which posited that sources of social support that promoted certain acculturation orientations would be associated with lower acculturative stress. Homogeneity of variance was assumed due to a nonsignificant Levene's Test for Equality of Variance value ($F_{Levene} = .65$). The interaction effect between acculturation orientation and source of social support was not statistically significant, ($F (6, 645) = 1.54$, $p = .16$).

In order to test hypothesis 3, to determine whether or not a prediction model could be developed for acculturative stress, hierarchical multiple regression (HRM) analysis was used to assess the ability of acculturation orientation (home and host), source of social support (home, other international students, host), and interactions (interaction (a) acculturation orientation-home and source of social support-home and interaction (b) acculturation orientation-host and sources of social support-host) to predict levels of acculturative stress (ILS), after controlling for the influence of perceived English language ability, perceived discrimination (PD), and general level of mood and anxiety as indicated by the MHI-5. As suggested by Anastasi and Urbina (1997), standardized scores were calculated and subsequently used for analysis in the regression model. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity, and homoscedasticity, which are necessary assumptions for HRM. Centering of the predictor and moderator variables is generally recommended when using a regression model with interactions to limit the problems associated with multicollinearity (Tabachnick & Fidell, 2007), but with the use of standardized scores, the nature of the scores being standardized, and the reported score being a mean deviation value, there is less need for

the centering calculation (Meyers, Gamst, & Guarino, 2006). One participant's acculturative

stress score was identified as an outlier by a Mahalonobis distance above the critical chi-square

value but the data was retained due to the limited impact one respondent has on the overall

analysis with a sample of this size (Meyers, et al.).

Perceived English language ability, perceived discrimination, and general level of mood

and anxiety were entered at Step 1 as control variables, explaining 45.7% of the variance in

acculturative stress (F (3, 653) = 183.40, p = .00). After entry of the acculturation orientations

and sources of social support at step 2 as main effects, the total variance explained by the model

was 46.4% (F (8, 648) = 72.12, p = .00). The incorporation of the acculturation orientations and

sources of social support thus explained an additional 1.4% of the variance in acculturative stress

(R^2 change = .01, F change (5, 648) = 3.36, p = .01). Interactions between (a) acculturation

orientation – home and home social support, and (b) acculturation orientation – host and host

social support were entered at Step 3, which did not contribute to an increase in the explanation

of the variance in acculturative stress (R^2 change = .00, F change (2, 646) = 1.14, p = .32). In the

model incorporating all three steps, only perceived English language ability, perceived

discrimination, and general level of mood and anxiety were statistically significant, with

perceived discrimination recording a higher beta value (beta = .44, p = .00) than mood and

anxiety levels (beta = .28, p = .00) or perceived English ability (beta = -.18, p = .00). These

results indicate that a large portion of the variance with acculturative stress can be predicted

using perceived English language ability, perceived discrimination, and general level of mood

and anxiety, while a small predictive contribution can be made by positive levels of host culture

identification and host culture social support.

Table 8

Summary of Hierarchical Regression Analysis for Variables Predicting Acculturative Stress (n = 657)

	Variable	β	SE B
Step 1	Perceived English ability	-.20*	.03
	Perceived discrimination	.47*	.03
	MHI-5	.30*	.03
Step 2	Perceived English ability	-.18*	.03
	Perceived discrimination	.44*	.03
	MHI-5	.28*	.03
	AI Home	.01*	.03
	AI Host	-.07*	.03
	ISSS Home	-.06	.04
	ISSS Other International Students	.04	.04
	ISSS Host	-.08*	.04
Step 3	Perceived English ability	-.18*	.03
	Perceived discrimination	.44*	.03
	MHI-5	.28*	.03
	AI Home	.13	.13
	AI Host	.03	.11
	ISSS Home	.05	.11
	Social Support Intl	.04	.04
	ISSS Host	.21	.11
	AI Home and ISSS Home interaction	-.20	.19
	AI Host and ISSS Host interaction	-.17	.17

Note. R^2 = .457 for Step 1 ($p < .01$); ΔR^2 = .014 for Step 2 ($p < .01$); ΔR^2 = .00 for Step 3
* ($p < .01$)

Summary

Correlational analysis identified a statistically significant relationship between acculturative stress and a number of demographic variables. An increase in acculturative stress was associated with higher levels of mood and anxiety measures, age, and time spent in the United States. A decrease in acculturative stress was identified with positive home and host cultural identifications and social support that comes from home country, other international students, and the host country.

Group differences were identified regarding acculturative stress according to the different acculturation orientations and sources of social support. The group of participants who had positive home and host cultural identifications were found to have lower levels of acculturative stress than the group of participants who had either positive home or host cultural identification, as well as the group of participants who showed negative home and host cultural identification.

Group differences were also identified with regards to levels of acculturative stress according to the source of social support. The group of participants who had positive levels of social support from home country, other international students, and host nationals were found to have statistically significant lower levels of stress than the group that had negative home or host support as well as the group that had negative levels of support from all three sources. The group of participants that had positive levels of support from home and host sources only were also found to have lower levels of stress than the group with negative levels of support from all three sources. The hypothesized interaction effect between cultural identification and source of social support did not reach statistical significance.

A hierarchical regression analysis was used to develop an acculturative stress prediction model. A model was developed using acculturation orientations, sources of social support, and

interactions to account for 46.4% of the variance. Perceived English ability, perceived

discrimination, level of mood and anxiety disorder, positive host culture identification, and

positive levels of host culture social support were the only statistically significant predictors.

Interaction terms were not found to contribute to the model.

Table 9
Correlational Analysis: Acculturative Stress and Variables

	ILS	MHI-5	PD	AI Home	AI Host	ISSS Home	ISSS Intl Stu	ISSS Host	Age	English	Cultural Fit	Time in US
ILS	-											
MHI-5	.45**	-										
PD	.56**	.26**	-									
AI Home	-.09*	-.09*	-.09*	-								
AI Host	-.26**	-.16**	-.21*	.18**	-							
ISSS Home	-.14**	-.09*	-.08*	.36**	.07	-						
ISSS Intl Stu	-.18**	-.15**	-.11**	.15**	.26**	.54**	-					
ISSS Host	-.34**	-.27**	-.28**	.03	.36**	.29**	.57**	-				
Age	.10**	.08*	.13**	-.03	-.04	-.06	-.09*	-.14**	-			
English	-.29**	-.15**	-.09*	-.03	.15**	.10**	.20**	.24**	.04	-		
Cultural Fit	-.13**	-.12**	-.06	.22**	.40**	.12**	.20**	.16**	.04	.07	-	
Time in US	.084*	-.02	.19**	-.02	.08	.10*	.09*	.10*	.33**	.26**	.02	-
Time on campus	.07	-.009	.15**	.03	.019	.027	.04	.041	.39**	.25**	.03	.67**

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Chapter 5: Discussion

It is widely acknowledged that university level study is difficult on a number of levels –

academically, personally, socially, and developmentally (Kaczmarek, et al., 1994; Pett &

Johnson, 2005; Sharkin, 2006). The demands on university students include gaining

independence, dealing with academic pressure and stress, and increased responsibilities

(Lefkowitz, 2005). Although these are challenges for all university students, they are but a part

of the many difficulties international students in the United States need to confront. As the

United States has become a magnet for students from around the world in the pursuit of higher

education, the number of international students in the United States has grown immensely in the

60 years following World War II (Glazier & Kenschaft, 2002). Consequently, it is increasingly

recognized that it is important to understand the specific difficulties and challenges involved in

studying in the United States to assist these students both academically as well as personally

(Arthur, 2004; Furnham & Bochner, 1986; Pedersen, 1991a; Singaravelu & Pope, 2007).

Among the many changes involved in going to another country for university-level study,

international students are almost always confronted with a new and unfamiliar academic system

and the need to learn and study in a foreign language (Lin & Yi, 1997; Swagler & Ellis, 2003).

These challenges are compounded by the loss of the support provided by family and friends from

home, as well as the wide range of cultural differences in areas as varied as food, weather, social

customs, religious practices, and social and recreational activities (Pedersen, 1991a). The sum

total of these stressors that are specifically associated with living and studying in a new country

and culture are referred to as "acculturative stress" (Berry, 1980).

One of the major challenges international students are confronted with as they pursue

studies away from home is the question of how they are affected by the difficulty of maintaining

a home culture identity while still needing to incorporate at least some aspects of the new host culture (Pedersen, 1991a). This process of formulating a way to balance these two identities is referred to as an "acculturation orientation" (Berry, 1980). Numerous studies have identified the close connection between acculturative stress and an individual's acculturation orientation (Dona & Berry, 1994; Zheng & Berry, 1991). Another important challenge international students face is the development of new social contacts and other supports, or "social support," which has likewise been identified as an important consideration in coping with stress and difficulties (Cohen & Willis, 1985; Hayes & Lin, 1994).

Although acculturation has become a widely studied phenomenon (Rudmin, 2009), less emphasis has been placed on determining whether or not the acculturative processes international students go through are similar or different to other acculturating groups. Similarly, although social support has long been shown to be a buffer against stress in general, with numerous studies examining the importance of international student social support in dealing with acculturative stress (Bektas, et al. 2009; Chen, at al., 2002; Spiess & Stroppa, 2008), no previously identified studies have attempted to examine the interplay between acculturative stress and social support in an effort to develop a more comprehensive understanding of the experiences of international students in the United States. A more complete view of the role these factors play can provide additional information and a better understanding of how they might be associated with acculturative stress, which can in turn contribute to international students having more productive and fruitful stays in the United States over the course of their programs of study.

With these considerations in mind, the present study was designed to assist counselors in their work with international students in the United States. The current research project is

intended to provide information about the relationship between acculturative stress and: (a)

levels of cultural identification with both country of origin as well as the American host culture;

and (b) social support from students from the same country, other international students, and host

Americans are related. By examining these relationships, counselors will have additional

information at their disposal to guide interventions and increase the effectiveness of their

therapeutic work with international students.

Discussion of the Findings

This study presented three hypotheses regarding the relationships between acculturative

stress, acculturation orientation, and source of social support. Although there is some overlap

regarding the conclusions, due to the slightly different focus of the three different hypotheses the

current section will provide analysis and interpretation of the results for each hypothesis, with a

more comprehensive interpretation following at the end in an effort to synthesize the results.

Hypothesis 1 - There will be a negative or inverse relationship between perceived social

support and acculturative stress, that is, as perceived social support increases, acculturative stress

will decrease and vice versa.

Hypothesis 1 was supported by the data. Pearson product-moment correlations identified

statistically significant negative correlations between acculturative stress and all three sources of

social support (home country, other international students, and host country). This suggests that

students with higher levels of social support experience lower levels of acculturative stress. The

correlation levels varied and accounted for 1%-9% of the variance of the level of acculturative

stress. Further investigation revealed that levels of mood and anxiety disturbance and perceived

discrimination together were associated with over 53% of the variance, indicating that these

factors played a much more important role in understanding the relationship between acculturative stress and its sources of influence.

Hypothesis 2 - Acculturative stress will be associated with acculturation orientation in the following ways:

Hypothesis 2a. International students with positive home and host country culture identifications will show the lowest acculturative stress.

Hypothesis 2b. International students with either positive home or host country culture identifications will show intermediate acculturative stress.

Hypothesis 2c. International students with negative home and host country culture identifications will show the highest acculturative stress.

Overall Hypothesis 2 was partially supported. Results indicated that the three groups did have different group means according to the hypothesis; however, only the group with both positive home and host cultural identifications was found to have a statistically different level of acculturative stress compared to the other two groups. Results did not indicate that there was a statistically significant difference in the level of acculturative stress between the group of students who had either a negative home or host cultural identifications and those who had both negative home and host cultural identifications. Hence, only Hypothesis 2a was supported.

Hypothesis 3 – Acculturative stress can be predicted using measures of acculturation orientation and sources of social support in the following ways:

Hypothesis 3a. Acculturative stress will be lowest with international students who: (a) have positive levels of acculturation identification to both home and host culture, and (b) receive social support from all three sources (home, host, and other international students), and;

Hypothesis 3b. There will be an interaction between acculturation orientation and source of social support that contributes to the prediction model and the level of acculturative stress will be less with international students who: (a) have positive levels of acculturation identification to home and host cultures, and (b) perceive a positive level of social support from home and host source.

Hypothesis 3 was also only partially supported. The results suggest that perceived English language ability, perceived discrimination, and general mental health characteristics are far greater predictors of acculturative stress than acculturation orientation or source of social support. Higher levels of perceived discrimination and mood and anxiety disturbances predicted greater acculturative stress, while increased English language abilities predicted a decrease in acculturative stress. These three factors were found to account for 45.7% of the variance of the level of acculturative stress. The addition of considerations of cultural identification and social support contributed only a modest 1.4% to the overall prediction model and the interactions between them contributed nothing to the prediction model. After removing the interactions from the model, the only statistically significant predictors from among the different acculturation orientations and sources of social support were positive host culture identification and host social support, which were both found to be associated with predicting a lower level of acculturative stress. Hypothesis 3a was thus supported and Hypothesis 3b was not.

Taken as a whole, the results suggest that there are clear relationships between acculturative stress and a wide range of factors. Although there were some demographic characteristics were found to have statistically significant relationships with acculturative stress, the low correlation values would lead these relationships to be most readily interpreted as a consequence of the large sample size, as opposed to identifying important statistical

relationships. There were, however, interesting findings with regards to the relationship between acculturative stress and international students' acculturation orientation and source of social support.

As is consistent with previous research findings (Dona & Berry, 1994; Zheng & Berry, 1991), positive cultural identifications with both home and host culture were found to be correlated with a lower level of acculturative stress. Taken as a group, however, unlike previous research in the area, the key aspect of cultural identification was identified as the presence of a positive cultural identification with the host culture. No statistically significant difference on the level of acculturative stress was found between the groups of students with a positive host culture orientation, regardless of whether there was a positive or negative home culture orientation. This would imply that the incorporation of at least some aspects of the host culture are related to minimizing the harmful effects of acculturative stress. Although this is contrary to previous research studies, where the combination of both positive home as well as host cultural identification was associated with lower levels of acculturative stress, it may be the case that international students are more sensitive to incorporating host culture characteristics in order to adapt to the local culture than other groups involved in intercultural encounters. This would be consistent with the point raised in Chapter 2 that the international student experience is different from other acculturating groups due to the need to incorporate at least some host culture characteristics to be successful on university campuses in the United States. Additional relevant factors for this result may include the absence of a more substantial monocultural immigrant community and the presence of family members. Lacking these cultural influences may make it more pressing for international students to incorporate host culture aspects.

It is also important to take into consideration the voluntary and intentional nature of choosing to study in the United States. International students may be initially drawn to study in the United States due to personal interests or an affinity with the host culture. While this may be true also of some other acculturating groups, like tourists or other temporary visitors, it may be the case that this factor is markedly different with international students as compared to other groups driven more by safety or economic considerations, such as refugees and migrant workers. This difference may also be associated with a greater willingness on the part of university age students to immerse themselves in the host culture and be more likely to take on some of the cultural characteristics assumed to be necessary for success in the academic environment in the United States.

Similarly, the presence of social support, regardless of the provenance, was also found to be associated with lower levels of acculturative stress. An implication of the findings is that the reduction of acculturative stress may be facilitated by the development of wide social support networks, which, in turn, may prove to be a means to promote a cultural adaptation pattern that is associated with lower acculturative stress. As is consistent with previous studies (Hayes & Lin, 1994; Olaniran, 1993), social support from any source was found to assist international students in dealing with the challenges and stress of living and studying in the United States. Although the majority of the research has focused on home and host sources of support (Bektas, et al., 2009; Chen, et al., 2002; Spiess & Stroppa, 2008), the current study implies that encouraging international students to expand their social network beyond these two groups to include other international students is a useful suggestion in efforts to limit the negative impact of acculturative stress. Including other international students in a social support network allows for a different perspective and may include an even wider rage of approaches with regards to

strategies and considerations in how to deal with adapting to living and studying in the United States. Expanding social contacts outside the home country network may also lessen cultural isolation by encouraging the development of English language skills and may also make it easier to shift between cultural spheres thus encouraging the development of greater intercultural skills and confidence that comes as a result of being able to build positive relationships with culturally different people.

In spite of the correlational relationships that were identified between acculturation orientation and source of social support, it is interesting to note that in the prediction model that was developed, only social support from host nationals was associated with a statistically significant decrease in acculturative stress. This would imply that as important as widely based social support is in general, social support from host nationals may provide an especially important role in dealing with the difficulties involved in adapting to life and culture in the United States. Just as support from other international students is important, it is reasonable to assume this is even more so the case with support from host nationals. Increased social support from host nationals likely results in greater facility with the English language, increased information and insight into the changes in academic expectations in the United States, as well as additional exposure to information and understanding of the local and campus community. These factors would certainly benefit adapting and understanding a new culture and way of life, while making the challenges of studying in a new country more manageable and easier to address.

In spite of the connections between acculturative stress and acculturation orientations and the presence of social support, the results clearly identified the dramatic impact of three factors that seemed to form the core of acculturative stress as examined in this study: perceived English language ability, mood and anxiety disturbance, and perceived discrimination. Although cultural

identification and source of social support were identified as being associated with acculturative stress, these three factors were shown to be much larger aspects of international student acculturative stress.

Difficulties with English language ability has been consistently demonstrated in the literature as a source of acculturative stress and difficulty for international students (Dao, et al., 2007; Greenland & Brown, 2005; Kagan & Cohen, 1990; Li, et al., 2007; Wang & Mallinckrodt, 2006; Yeh & Insoe, 2003). Less research, however, has been done examining how positive perception of English language skills can contribute to a lessening of acculturative stress. This study indicated that a positive view of English language skills can be a source of strength and is associated with a decrease in acculturative stress, which is a similar conclusion arrived at by Yang et al. (2006). Just as Yang et al. considered how confidence with the English language was associated with an overall decrease in sociocultural difficulties, it is likely that confidence in language skills implies less stress overall and results in a greater sense of fitting in with the host culture and the resulting experience of experiencing less social isolation. Being confident in one's ability to communicate and express one's self with other people is an important part of building a new network of social support and being able to function effectively in a new environment. From this perspective, confidence in English language skills can thus be seen as an important part of successful adaptation to the United States.

Unlike the benefit of English language confidence, perceived racism and prejudice were found to be associated with an increase in acculturative stress. These clearly negative societal forces have also been explored previously and, when taken into consideration, found to be an important component of acculturative stress (Constantine, et al., 2005; Rahman & Rollock, 2004). This study again demonstrated that racism and prejudice are powerful sources of distress

and contribute to the difficulties international students experience on moving to the United States. The presence of these negative aspects of life in the United States may be especially difficult as international students likely find themselves in the role of a minority or part of a lesser privileged group for the first time in their lives. The experience of being stigmatized and marginalized is a difficult experience and not having these experiences previously may leave international students especially ill-equipped and ill-prepared to deal with being the object of racism and prejudice. This is particularly the case due to the fact that international students do not have the social and family support that are so important in dealing with these painful societal issues. This lack of community support, in addition to the isolating nature of racism and prejudice, combine to create especially difficult circumstances for these newcomers to the United States.

Another important consideration of these damaging societal characteristics could be the surprise and shock to many international students upon encountering racism and prejudice. Considering the widespread portrayals of the United States as the land of opportunity and the land of the free, it is possible that international students do not expect and are thus not prepared for the social reality of needing to cope with and adapt to the presence of the negative societal attributes of racism and prejudice. Confronted with the realities of being seen and labeled as an oppressed outsider, these unexpected negative characteristics may make the adaptation process much more challenging and difficult due to the unexpected nature of these challenges. It clearly will be necessary for international student offices, in collaboration with counselors, to identify these issues and the resulting societal characteristics with international students as part of the orientation program for newly arrived students and provide ongoing assistance and support as

international students are confronted with the harsh reality of racism and prejudice in the United States.

Limitations

As with any research study, there are questions regarding the applicability and validity of the findings. The following section attempts to outline some of the threats to validity, other limitations of the study, and the impact they might have regarding the study results and conclusions.

A number of characteristics that are inherent to research using a descriptive field design raises concerns about the internal validity of the study. First among these limitations is the reliance on self-report instruments for data gathering. A number of problems have been identified with self-report measures, particularly as they relate to the vulnerability to distortion and questions about the level of participants' insight with regards to the topics being investigated (Heppner, Wampold, & Kivlighan, 2008). Ponterotto and Casas (1991) raised additional concerns when conducting research with culturally and linguistically diverse groups, particularly (a) whether or not participants understand the questions the way the researchers intend, (b) whether any of the items are potentially offensive to participants, and (c) whether participants understand how to respond to the items' response format. Lefever, Dal, and Matthiasdottir (2007) similarly identified a number of concerns when using electronic survey instruments with student samples, namely (a) unreliability of the mailing list, (b) nonrandom sampling, (c) an unwillingness on the part of some students to respond to email invitations, and (d) the presence of fraudulent or inattentive responses. All of these considerations can be seen to have possibly affected which students participated in this study and how they responded to the different items.

Yet another limitation of survey and correlation research designs is that no causal inferences may be made. Without random selection of participants, there may be unidentified confounding factors or additional considerations that impact the results. This is a particular shortcoming with a study of this type, where the intention of the project is to identify general and overarching information on the perspectives and characteristics of international students in order to gain a better understanding of the acculturative stress they experience.

Language considerations also need to be taken into account with this research project. Although the study instruments were intentionally chosen because they were specifically designed for use with non-native English speaking research subjects, it is possible that the participants' language skills affected the data that were collected. The perception of social support could have been affected by those participants who do not feel their language skills are adequate to initiate and maintain significant interpersonal relationships using the English language. Alternatively, the sample could have been skewed toward those individuals who were more comfortable with English in general and thus more inclined to participate in a study of this kind. In either case, this could skew the distribution of acculturation orientations toward either the home or host cultural identification and away from the other. It is also possible that some students will not seek out social interactions with either host nationals or other international students due to national or regional identity characteristics, which could take the form of seeking out only others who share a common cultural, religious, or familial background, thereby limiting the amount of contact with both other international students as well as host culture students.

The current study also involves a number of limitations when considering the generalizability of the research conclusions to the population of international students in the United States as a whole. The most obvious limit is that the current study only involved six

public universities located in the central part of the United States out of the total 701 institutions that enroll international students in the United States (Bhandari & Chow, 2009). Of the six institutions, the current sample was also limited due to a low response rate, which is frequently a difficulty with research involving international students (Constantine et al., 2004; Kagan & Cohen, 1990; Poyzrali et al., 2004). Of the approximately 9,800 students who received the email invitation to participate in the study, only 1,092 (11.1%) responded, with only 657 (6.7%) included in the final data analysis. These response rates are even lower than the normally modest sample return rate of 15% to 35% that are typical of studies involving international students in the United States (Bevis & Lucas, 2007; Li & Gasser, 2005; Rahman & Rollock, 2004). It is important to note, however, that these may be underestimates of the true response rate considering that the researcher did not have access to the actual participant lists that were used to distribute the invitations. It is likely that at least some of the contact addresses were invalid or returned as undeliverable. In addition to these concerns, the final analysis was also affected by the large number of participants ($n = 419$, 38%) who did not complete the study instruments and thus were not included in the analysis. Although it is impossible to know the reasons for such a high rate of non-completion, possibilities for this include the length of the survey, the amount of time required to complete it, a lack of interest in the study, or simply ignored and unread email.

At the same time, it does seem that in some respects the current sample does resemble national characteristics of the international student population, as reported in the 2009 Institute of International Education (IIE) Open Doors report (Bhandari & Chow, 2009). Demographic characteristics were similar between the study and the IIE national statistics with regards to gender, geographic origin, and field of study.

Table 10

Sample Demographics and Nationwide Demographics

	Current study sample	IIE Open Doors
Gender		
Male	52%	55%
Female	48%	45%
Geographic origin		
Asia	69%	60%
Europe	13%	11%
Latin America	10%	7%
Middle East	4%	8%
Africa	3%	3%
Field of Study		
Engineering and technology	42%	25%
Business	16%	20%
Natural sciences	14%	9%
Social sciences	10%	9%
Health	3%	5%
Education	4%	3%
Humanities	6%	8%
Undeclared	.3%	3%

In addition to these design and sampling concerns, several other issues arose that need to be taken into consideration. Several of the items used in the survey may have been confusing to participants. Although the researcher had the intention of gathering information on the participants' racial and ethnic identity, the wide range of responses did not allow for this. These items clearly were not understood and would seem to reflect an expectation of an understanding of these aspects of identity as they are based in the United States (McAuliffe, 2008). The validity item ("Please check this item *'often'"*) seems to have also been a source for confusion for some of the participants. Although validity items are increasingly used to identify research participants who are not reading the items closely (e.g. Wang & Mallinckrodt, 2006), it is possible that some participants simply did not understand the item or thought it was a mistake. The demographic question on sexual orientation was also a cause for concern with some respondents. Several participants provided answers indicating that the item was irrelevant, too personal, or simply not information they were willing to provide. Consequently, the presence of these particular items could have been distractions or led some participants to have questions regarding the overall study, thereby influencing their responses and the data that was collected.

Future Directions

In spite of these limitations and the additional questions that are raised, this is the only study that has proposed to examine the interplay of acculturation orientation along with a wider view of social support and their relationship to international students' level of acculturative stress. Rather than proposing many clear-cut answers, the current study raises several more questions and indicates that more research will be necessary to understand the difficulties international students have as they pursue their studies in the United States.

Future studies can expand upon these results with regards to the specifics of the acculturation process for international students. The study of acculturation and the constructs that have emerged as conceptualized in the bidimensional framework are part of the ongoing scholarly dialogue about the difficulties involved in measuring acculturation orientations, particularly the monolithic approach to national culture identification and the context-free nature of many of the items (Rudmin, 2003). This study suggests that the experience of international students is different from other acculturating groups with regards to the importance of contact with host nationals while needing to quickly and effectively function in the new cultural environment. Further research can examine to what extent this is the case and to possibly develop more a more comprehensive model to understand the acculturation process of international students in the United States.

Although the current study chose to undertake the study of acculturation using the generic categories of home and host culture orientation, previous research has clearly identified a need to incorporate how the public-private context affects these models and conclusions (Arends-Toth, et al., 2006; Chen, et al., 2008; Birman, et al., 2002). With regards to this specific population, the public-private context may be incorporated by looking at how international students may consider their cultural orientation when they are in situations only with other students from the same country, as compared to how this might be different when they interact with professors from the United States or in classes where the majority of the students are from the United States, or when they are involved in international student activities on campus involving a variety of people from many different countries. Further research can take into consideration these aspects by having items be specific to a particular context.

The relative insensitivity of the analysis of the measures on acculturation orientations and social support and their relationship with acculturative stress similarly indicates a need to develop additional measures and an examination of how these constructs are applicable to the specific case of international students. None of the measures that were used provided data indicating that the instruments had great sensitivity or showed large effect sizes. The small amount of overall variance that was attributed to these factors leads to the obvious question of whether or not this is due to these factors simply not being particularly important in the overall experience of acculturative stress for international students, or whether it is a problem of how they are measured. To complicate this matter, when taken individually, the different acculturation orientations and sources of social support were found to be associated with acculturative stress, yet when used in combination or as interactions they were not found to be significant statistically. Although this can be partially explained due to the variance that are clearly shared between acculturative stress and perceived English language ability, perceived discrimination, and general mood and anxiety levels, it is likely that the overall limits of the instruments examining the acculturation orientations and social support are not yet able to clearly identify and measure these constructs as they apply to acculturative stress.

Extending this consideration, ongoing research efforts to more clearly understand the composition of acculturative stress will need to further explore the role of negative social and individual factors. The study's clear identification of the important relationships between acculturative stress, mood and anxiety disorders, and perceived discrimination raises questions about the independence of these three constructs. Although these last two components provided the clearest association, there is also the question of the impact of the implied overlap between them. Rather than looking at mood and anxiety and perceived discrimination as separate

predictors of acculturative stress, it may be more helpful in future investigation of acculturative stress to conceptualize acculturative stress as also including these additional components.

Just as prejudice and racism have been identified as an important consideration for many international students in the United States (Constantine, et al., 2005; Frey & Roysircar, 2006; Sandhu & Asrabadi, 1994), it is clear that the cultural and sociopolitical context of American life and their negative consequences for international students are important considerations. Although previous research has begun to provide a clearer picture of the many difficulties international students face, these challenges have been primarily presented as individual concerns that are best addressed as needing change in individual international students' psychological and sociocultural skills and values (Ward & Kennedy, 2001; Ward & Rana-Deuba, 2000). Instead, the current study suggests that the presence of racism and prejudice are equally powerful forces to be considered in the process of adapting to life in the United States and deserve further exploration of international students' perception of how they are affected by these powerful factors.

Associated with this, the current study also identified some possible indications of relationships between acculturative stress and demographic considerations, such as age and amount of time spent in the United States. Although these correlations were low and likely at least partly the result of a large sample size, there may be some demographic considerations that merit further investigation. In the present study, a statistically significant difference was found between European and Asian students on both the acculturative stress measure as well as on perceived discrimination and prejudice. These results suggest that national origin may be an important aspect to consider and further investigate.

It will be important to further explore how individual qualities like age or personality characteristics may be associated with the challenge of studying in a new country with a different language and culture. Likewise, it will be important to explore if additional time in the United States involves greater exposure to societal difficulties like racism and prejudice, if being far from the home culture, family, and friends for an extended period of time is an important consideration, and how acculturation may be related to individual cultural identity development. Likewise, there may be relevant personality characteristics that influence the ability to live and adapt to a new cultural environment. Further research can begin to explore how intercultural travelers are affected by these longer term changes and adaptations.

Similarly, further exploration of the concept of "cultural fit" is clearly indicated. Just as the further exploration of the cultural and societal context is merited, the incorporation of larger considerations regarding the ways in which international students see their home culture as being similar to or different from the host society can provide helpful information on the impact of cultural distance and its impact on cultural adaptation. Although the current study attempted to incorporate these considerations, unfortunately no previously validated and demonstrably reliable instruments have been developed to evaluate the perception of cultural fit as it applies to international students. It will be necessary for future studies to identify how aspects of the perception of cultural fit are related to the experience of acculturative stress.

Lastly, the research on international students is for the most part an investigation of the challenges, problems, and difficulties involved in studying in the United States. Although this study does suggest the widespread and positive benefits of social support on the coping and adapting that international students do to live in the United States, there is a great need to extend these results to gain a better understanding of what are the positive qualities that allow for

successful adaptation to life in the United States. For as much effort as has been placed on identifying areas of difficulty, it is necessary that we gain a much better understanding of the individual and group characteristics that allow so many international students to succeed. Clearly, further explorations of the benefits of positive views of English language skills is but one example of this. It goes without saying that courage, resiliency, and commitment to overcome challenges are all part of the experiences of the many international students who do thrive and excel in their studies. These areas could prove to be an important starting point and a valuable contribution to a more sophisticated view of the experiences of international students in the United States.

Counseling Implications

Even though the current study did not provide clear and unambiguous answers to the study questions and hypotheses, there are still a number of considerations that are of relevance to counselors working with international students in the United States. The research has shown that international students constitute an underserved population who do not generally take advantage of available counseling services (Frey & Roysircar, 2006; Komiya & Eels, 2001; Liao, et al., 2005; Zhang & Dixon, 2003). The struggle of maintaining connections to the home culture, while also developing ties to the host culture, is an important aspect of studying in the United States that counselors need to take into consideration. This is further complicated by the experience of the presence of societal factors like prejudice and racism in the host society. Counselors can provide an important opportunity to explore and address this in a supportive and caring environment by assisting international students to work through these difficult societal characteristics. This is especially important considering that many international students may not have had to deal with these factors in their home countries.

Closely associated with this, counselors can assist international students with exploring intercultural avenues of commonality in an effort to improve the perception of their level of cultural fit. By working to identify areas of the host society that are similar to their home culture. By emphasizing and exploring these areas of similarity, international student may become more comfortable in the new society by seeing it as less foreign and alien than it might initially appear.

Lastly, and in all likelihood most importantly, an implication of these findings is that the reduction of acculturative stress may be facilitated by development of wider social support networks. Although there is both an intuitive understanding, as well as a research base supporting this conclusion, it is important that counselors are aware of the loss of social support involved in moving to a new country to study. An awareness on the part of the counselor of both the importance of this aspect of coping, as well as the almost universal need to quickly develop a network of social support, is an important consideration in understanding the difficulties involved in being an international newcomer on the college campus.

Similarly, although many international students are inclined to develop friendships and supports based primarily on the basis of national, regional, and cultural origins, the present study suggests the importance of wide ranging networks to assist in the process of transition. Counselors can promote this when counseling international students who are dealing with acculturative stress by developing interventions to not only develop social contacts with Americans but also other international students. As counselors we are called to be agents of social change and advocacy for our clients when they are confronted with powerful societal and environmental forces (Ratts, Toporek, & Lewis, 2010). Counselors can become active agents of this change by working with college and university student affairs personnel and international

student advisors to assist with this process by developing programs that allow for added opportunities for cross-cultural contact.

Summary

The current study is the only study that examines the relationship between acculturative stress and the different ways that international students in the United States adapt to the changes in culture and the impact of different sources of social support. The participants in this study, international students at six public universities in Missouri, Oklahoma, Texas, and Iowa, completed measures on demographic information, acculturative stress, acculturation orientation, and sources of social support. Lower acculturative stress was found to be associated with: (a) higher levels of the participants' perceptions of their English language ability; (b) a positive view of both the home and host culture; and (c) a widespread network of social support incorporating not only home and host country students, but also other international students. Increasing levels of acculturative stress were found to be associated with higher levels of perceived prejudice in the host society, as well as mood and anxiety disruptions. Group differences were identified showing that those students with positive levels of cultural identification to the host culture had lower acculturative stress than groups with negative cultural identification. Similarly, group differences reflecting positive and widespread sources of social support showed lower levels of acculturative stress than groups with less social support.

In an effort to combine the analyses regarding the association of acculturation orientation and social support with acculturative stress, a prediction model was developed, but it failed to identify that acculturation orientation and source of social support were responsible for other than a minor part of the variance with regards to acculturative stress. Instead, perception of

English language ability, perceived discrimination, and overall mood and anxiety levels were found to be much more important elements of the prediction of acculturative stress.

A number of limitations were identified, which prevent results from the study being able to be too widely generalized. Low response rates from a small number of participating universities, along with a large number of incomplete responses, non-random groups, and an inability to make causal statements are all important considerations limiting the study conclusions. Future studies could benefit by including a more explicit description of relevant societal factors such as racism and prejudice that affect international students, as well as an examination of how public and private spheres of behaviors and values affect international students' process of acculturation. Future work on identifying the resources and strengths international students implement in their efforts to be productive, successful students would also be beneficial.

The study provides several implications for counselors in their work with international students in the United States. Counselors can be more effective in their work with international students if they are aware of the range of challenges confronting students who leave their home country for university study. Counselors can assist international student clients by helping them to recognize and cope with the range of difficult societal issues, like racism and prejudice that may be new and troubling for international students. Lastly, counselors can help international students to develop a wide range of social support in their efforts to have a more meaningful, productive, and positive experience studying in the United States.

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Appendix A: Participant Invitation

You are invited to participate in a dissertation research study approved by the University of Missouri-St. Louis Institutional Review Board. The aim of the study is to gather information about the stress international students experience after moving to the United States and how international students adapt. This study is conducted by Christopher Sullivan, doctoral candidate at the University of Missouri-St. Louis. Your participation will involve completing an online survey that will take approximately 20-45 minutes to complete. After completing the survey, you will have the opportunity to enter your name into a drawing for one of ten $50 Target gift cards. Entering the drawing is voluntary and your name will not be in any way connected to your answers on the survey.

To qualify to take part in this research, you must meet the following criteria:

- You are currently enrolled in an American university

- You have an F-1 or J-1 nonimmigrant visa

Please cut and paste the following link into your address bar to be directed to the survey.

https://www.surveymonkey.com/

All responses will remain confidential.

Thank you for your willingness to participate in this research.

Christopher Sullivan

Appendix B: Participant Consent Form

Predictors for Acculturative Stress for International Students in the United States

INFORMED CONSENT – PLEASE READ CAREFULLY

You are cordially invited to participate in a research study about the stress international students experience after moving to the U.S. This study is conducted by Christopher Sullivan, who is a doctoral candidate at the University of Missouri-St. Louis. You have been asked to participate because you are an international student. Please read this information and ask any questions you may have before proceeding.

Your participation in this research is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University. If you decide to participate, you are free to withdraw at any time.

Continuing with this survey implies informed and free consent to be a participant in the study.

Frequently Asked Questions:

What procedures are involved?

If you agree to be in this research, you will be asked to complete an on-line survey. The survey normally takes about 30 minutes to complete. Again, your participation is completely voluntary, you may decline to answer any question(s), and you are free to withdraw at any time.

What about privacy and confidentiality?

The surveys are anonymous. Any comments with personal references or school names will be changed or edited out of final documents. Access to raw data is limited to the co-researchers.

What is the purpose of this research?

The purpose of this research is to explore the questions:

1. How are international students affected by cultural change after moving to the US?
2. How does social support assist with the transition to life in the US?

Your impressions and opinions will help guide the future support and programming for international students in the US.

What are the potential risks and/or benefits to taking part in this research?

The sole purpose of the surveys is to solicit your opinions and impressions of your experience and impressions of moving to the US. There are no anticipated risks; however, a question may cause you to recollect an unpleasant incident that occurred to you. No other risks are expected.

By participating, you may help improve the quality of support services on campus for international students.

There will be no financial compensation or academic credit offered for participation in this research. After completing the survey, you will have the opportunity to enter your name into a drawing for a chance to win one of 10 $50 gift certificates. Entering the drawing is voluntary and your name will not be in any way connected to your answers on the survey.

Can I withdraw from the study?

You can choose whether to participate in this research study or not. You may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you do not want to answer.

What if I have other questions?

You may contact Christopher Sullivan by e-mail at sullivan@umsl.edu. You may also contact Dr. Carl Bassi, the Chair of the university's Institutional Review Board (IRB), at (314) 516-5897.

Remember:

Your participation in this research is voluntary. Your decision whether or not to participate will not affect your relationship to the university you are enrolled in. If you choose to participate, you may rescind the decision at any time.

Continuing with this survey implies informed and free consent to be a participant in the study.

Appendix C: Survey

Demographic Questions

1. Gender (female, male, other)
2. Age (in years)
3. Enrolled institution
4. academic level (grad or undergrad)
5. academic program
6. relationship status (Single, Married/Partnered, In a relationship, Divorced, Cohabitating, Other)
7. sexual orientation (Heterosexual, Bisexual, Gay/Lesbian, Other)
8. amount of time spent in United States (in months)
9. amount of time spent on current campus (in months)
10. country (region) of origin
11. Religion (Atheist, Buddhist, Christian, Confucianism, Hindu, Judaism, Muslim, Shinto, Taoism, Spiritual but not religious, other)
12. ethnicity
13. race
14. How similar is your home culture to American culture? (1=not at all similar – 5=very similar)
15. How similar are academic expectations from your home country to American expectations? (1=not at all similar – 5=very similar)
16. How similar are social and recreational activities from your home country to American activities? (1=not at all similar – 5=very similar)
17. What is your present level of English? (1=very low – 5=very good)
18. How comfortable are you communicating in English? (1=not comfortable – 5=very comfortable)
19. How often do you communicate in English? (1=never – 5=always)

Scale 1 – Mental Health Inventory-5

For each question, please select the one answer that comes closest to the way you have been feeling within the past month.

None of the time   1----------2----------3----------4----------5----------6   All of the time

1. How much of the time, during the past month, have you been a very nervous person?
2. How much of the time, during the past month, have you felt calm and peaceful?
3. How much of the time, during the past month, have you felt downhearted and sad?
4. How much of the time, during the past month, have you been a happy person?
5. How much of the time, during the past month, have you felt so sad and unhappy that nothing could cheer you up?

Scale 2 – Index of Life Stress

Please answer how often you feel the way described in each of the statements which most closely represents your own personal experience living in the United States.

Never	Rarely	Sometimes	Often
1	2	3	4

1. My English embarrasses me when I talk to people.
2. I don't like the religions in the United States.
3. I worry about my academic performance.
4. I worry about my future career in my home country.
5. I can feel racial discrimination toward me from other students.
6. I'm not doing as good as I want to in school.
7. My English makes it hard for me to read articles, books, etc.
8. It's hard for me to develop romantic relationships here.
9. I don't like the ways people treat each other here.
10. I don't like American food.
11. People treat me badly just because I am a foreigner.
12. I think that people are very selfish here.
13. I don't like the things people do for their entertainment here.
14. I can feel racial discrimination toward me in stores.
15. I worry about whether I will have my future career in the United States.
16. Americans' way of being too direct is uncomfortable to me.
17. I study very hard in order not to disappoint my family.
18. I can feel racial discrimination toward me from professors.
19. I can't express myself well in English.
20. It would be the biggest shame for me if I fail in school.
21. I worry about my financial situation.
22. I don't like American music.
23. I can feel racial discrimination toward me in restaurants.
24. My financial situation influences my academic study.
25. I worry about my future: will I return to my home country or stay in the United States.
26. I haven't become used to enjoying the American holidays.
27. I don't want to return to my home country, but I may have to do so.
28. My English makes it hard for me to understand lectures.
29. I want to go back to my home country in the future, but I may not be able to do so.
30. My financial situation makes my life here very hard.

Scale 3 – Perceived Discrimination subscale from the Acculturative Stress Scale for

International Students

Please answer how often you feel the way described in each of the statements which most closely represents your own personal experience living in the United States.

1= Strongly disagree, 2= disagree, 3= not sure, 4 = agree, 5 = strongly agree

1. I am treated differently in social situations.
2. Others are biased toward me.
3. Many opportunities are denied to me.
4. I feel that I receive unequal treatment.
5. I am denied what I deserve.
6. I feel that my people are discriminated against.
7. I am treated differently because of my race.
8. I am treated differently because of my color.

Scale 4 – Acculturation Index

This section is concerned with how you see yourself in relation to other people from your home country and Americans. You are asked to consider two questions about your current life style. Are your experiences and behaviors similar to other people from your home country? Are your experiences and behaviors similar to Americans?

not at all similar   neutral   very similar
    1----------2----------3----------4----------5----------6----------7

Enter your response (1,2,3,4,5,6, or 7) in the parentheses. Please respond to all items.

	People from your home country	Americans
Clothing		
Pace of life		
General knowledge		
Food		
Religious beliefs		
Materials comfort (standard of living)		
Recreational activities		
Self-identity		
Family life		
Accommodation/residence		
Values		
Friendships		
Communication styles		
Cultural activities		

Language		
Perceptions of people from my country		
Perceptions of Americans		
Political ideology		
World view		
Social customs		
Employment activities		

Scale 5 – Index of Sojourner Social Support

The following questions ask about people in your environment who provide you with help or support. Each question has three parts. Answer each question thinking about how people from that group provide you with help or support.

No one would do this   Some would do this   Almost everyone would do this
     1------------------2------------------3------------------4------------------5

	People from your home country	Other international students	Americans
Comfort you whenever you feel homesick.			
Listen and talk with you whenever you feel lonely or depressed.			
Share your good and bad times.			
Spend some quiet time with you whenever you do not feel like going out.			
Spend time chatting with you whenever you are bored.			
Accompany you to do things whenever you need someone for company.			
Visit you to see how you are doing.			
Accompany you somewhere even if he or she doesn't have to.			
Reassure you that you are loved, supported, and cared for.			
Provide necessary			

information to help orient you to your new surroundings.			
Help you deal with some local institutions' official rules and regulations.			
Show you how to do something that you didn't know how to do.			
Explain things to make your situation clearer and easier to understand.			
Tell you what can and cannot be done in the US.			
Help you interpret things that you don't really understand.			
Give you some tangible assistance in dealing with any communication or language problems that you might face.			
Explain and help you understand the local culture and language.			
Tell you about available choices and options.			

Appendix D: Campus IRB Authorization

OFFICE OF RESEARCH ADMINISTRATION

Interdepartmental Correspondence

Name: Christopher Sullivan

Title: Acculturative Stress International Students in the United States

The chairperson of the Human Subjects Committee for UM-St. Louis has reviewed the above mentioned protocol for research involving human subjects and determined that the project qualifies for exemption from full committee review under Title 45 Code of Federal Regulations Part 46.101b. The time period for this approval expires one year from the date listed below. You must notify the Human Subjects Committee in advance of any proposed major changes in your approved protocol, e.g., addition of research sites or research instruments.

You must file an annual report with the committee. This report must indicate the starting date of the project and the number of subjects to date from start of project, or since last annual report, whichever is more recent.

Any consent or assent forms must be signed in duplicate and a copy provided to the subject. The principal investigator must retain the other copy of the signed consent form for at least three years following the completion of the research activity and they must be available for inspection if there is an official review of the UM-St. Louis human subjects research proceedings by the U.S. Department of Health and Human Services Office for Protection from Research Risks.

This action is officially recorded in the minutes of the committee.

Protocol Number	Date	Signature - Chair
100713S	7/21/10	