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International Students' Communication Effectiveness with U.S. Faculty Members: A Further Exploration of Anxiety/Uncertainty Management (AUM) Theory

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International Students' Communication Effectiveness
with U.S. Faculty Members: A Further Exploration of
Anxiety/Uncertainty Management (AUM) Theory

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Dedication

I would like to dedicate my master's thesis
to my father, Dengquan Chen, to my mother, Qionghua Cai,
and to my husband, Yong Wang.

My father has taught me to never give up as long as there is a slim chance of hope.
The persistence that I inherited from him has carried me throughout the tough times in the past.

My mother has taught me to be optimistic and easy-going with life even if it is harsh.
I know she will always welcome me with her warmest hug no matter I succeed or fail.

My husband has given up the comfortable life and the promising career in China,
and joined me in the U.S., a completely different world from where he used to be.

I admire his talents for solving technological problems and
the hardworking spirit he has had all along,
and I wish him all the best in his future endeavors.

Despite all the difficulties and frustration of the moment,
I still believe in a good future for us.

Like one of the earliest Chinese poems says,
“Holding your hand, living to an old age together.”

International Students' Communication Effectiveness
with U.S. Faculty Members: A Further Exploration of
Anxiety/Uncertainty Management (AUM) Theory

by

YIXIN CHEN, B.S.

THESIS

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Abstract

This study established a theoretical model based on anxiety/uncertainty management (AUM) theory with English proficiency and knowledge of U.S. culture as indirect factors. A total of 180 international students at a mid-sized Southwestern university participated in surveys regarding the communication process with U.S. faculty. The results revealed that uncertainty and anxiety are positively related, and anxiety negatively predicts communication effectiveness while uncertainty does not. English proficiency is a negative predictor of both uncertainty and anxiety, while knowledge of U.S. culture is not a predictor of either uncertainty or anxiety. The results also indicated that English proficiency and knowledge of U.S. culture are positively correlated, and they are both positive predictors of communication effectiveness. This study offers partial support for AUM theory and suggests strategies for students, faculty and university administrators to increase the communication effectiveness of international students studying at U.S. universities.

Keywords: International Students, Anxiety/Uncertainty Management (AUM) theory, Anxiety, Uncertainty, Communication Effectiveness, Host Language Competence, Knowledge of Host Culture

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Chapter 1: Introduction

The United States is a world leader in hosting international students with nearly a quarter of all international students worldwide enrolling in U.S. universities (American Council on Education [ACE], 2006). According to the Open Doors report, as early as the 1959-1960 academic year, there were 48,486 international students in the U.S., constituting 1.4% of the total U.S. enrollment (Institute of International Education [IIE], 2007a). The number of international students in the U.S. had increased steadily every year and reached the peak number of 586,323 in the 2002-2003 academic year (IIE, 2007a). Thereafter a decline in the enrollment of international students occurred from the 2003-2004 to the 2005-2006 academic year (IIE, 2007a) due to the tightened visa procedures enacted after the September 11 terrorist attacks (CNN, 2003). However, in the 2006-2007 academic year, the total number of international students studying in colleges and universities in the United States had the first significant increase since the 2002-2003 academic year, rising 3.2 % from the previous year to a total of 582,984, which constitutes 3.9% of the total U.S. enrollment (IIE, 2007a).

1.1 BENEFITS TO THE U.S. FROM THE PRESENCE OF INTERNATIONAL STUDENTS

International students benefit the United States in terms of development of its national economy, maintenance of its leading position in science and technology, and assurance of national security. International students in the U.S. contribute about \$14.5 billion dollars to the country's economy through their tuition payments and living expenses, such as room and board, books and supplies, transportation, health insurance, accompanying family members' expenditures, etc. (IIE, 2007b). A total of two thirds (66%) of all international students' primary funding comes from sources outside of the United States, such as funds from personal and family sources and assistance from their home country governments or universities (IIE, 2007b). The enrollment of international students is a great investment

in U.S higher education, which is described by the Department of Commerce as the country's fifth largest service sector export (IIE, 2007b).

In addition, international students have played an important role in maintaining and advancing the United States' global research competitiveness in the disciplines of science, technology, and engineering (Pandit, 2007). The first-choice careers of international students from countries such as China and India are often in engineering and sciences, rather than in business and law, which are the favorite of the best U.S.-born students (Pandit, 2007). Of all the doctoral degrees in technical majors awarded by U.S. institutions, approximately one-third are earned by international students (Taras & Rowney, 2007). An American Council on Education (ACE) Issue Brief, published in October 2006, argued that drops of the number of international students, particularly in the science and engineering fields, will “affect the ability of higher education, business, and government to engage in research and development” (ACE, 2006, p. 15).

Another important benefit that the U.S. has obtained from international students is in the realms of foreign policy and national security (Johnson, 2003). Educating international students is part of America's long-term investment in foreign policy (Johnson, 2003). International students, who have lived and studied in the U.S. for a period of time, “often become excellent ambassadors of American culture when they return to their home countries” (Pandit, 2007, p.156). They often serve as bridges of communication between their home countries and the U.S, enhancing the image of the U.S. abroad, and in the long run, the U.S. security (Pandit, 2007).

1.2 BENEFITS TO U.S. UNIVERSITIES OF ENROLLING INTERNATIONAL STUDENTS

Enrolling international students also benefits host universities in terms of teaching and research support (Klomegah, 2006), cultural diversification of the student body (Taras & Rowney, 2007), and the cultivation of “global competency” (Pandit, 2007, p. 156). First, international students provide crucial support for teaching and research in American colleges and universities, particularly in the science and engineering fields (Klomegah, 2006). American students often choose profitable jobs in industry rather

than advanced studies (Peterson, Briggs, Dreasher, Horner, & Nelson, 1999). Without international teaching assistants, many courses required by American students would be in short supply (Peterson et al., 1999). International students also help academic departments fill research assistant vacancies (Trice, 2003).

Second, international students increase the cultural diversification of the student body (Taras & Rowney, 2007). Diversity brought by international students facilitates the generation of more ideas and exchange of more opinions in the classroom (Taras & Rowney, 2007). Having international students enriches in-class discussions as American-born students and international students can share their experiences and perspectives from different cultures (Pandit, 2007). Oftentimes it is international students who provide American students the gift of a different perspective (Barber, 2003).

Finally, the presence of international students helps prepare all students for work in global environments (Taras & Rowney, 2007). Many U.S. colleges and universities have recognized the importance of educating their students to become global citizens with “global competency” (Pandit, 2007, p. 156). This quality requires the graduates to be capable of and comfortable in working with people from different parts of the world with distinct cultures (Pandit, 2007). Having classmates from different countries and cultures offers an opportunity to obtain first-hand experience of work in multicultural settings (Taras & Rowney, 2007).

1.3 JUSTIFICATION OF THE PROPOSED STUDY

Despite the benefits that international students bring to the U.S. and host universities, the life of international students in the U.S. is not without difficulties and merits academic consideration. Problems facing international students in the U.S. may include “insufficient linguistic and cultural skills, prejudice, discrimination, homesickness and loneliness” (Ward, Bochner, & Furnham, 2001, p. 153). These problems impinge on the international students’ adaptation or adjustment to the U.S. cultural environment including “academic success” (Ward et al., 2001, p. 156) and level of satisfaction with their academic experiences in the U.S. (Wadsworth, Hecht & Jung, 2008).

Effective communication with host nationals therefore is central to the adaptation processes of international students (Zimmerman, 1995). Effective communication with U.S. faculty members is perhaps even more important, because student-faculty interaction has been recognized as one of the five benchmarks of effective educational practice (National Survey of Student Engagement [NSSE], 2007). However, language and cultural barriers often cause many international students' problematic experiences in effective communication with people from the U.S., including faculty members (Wadsworth, et al., 2008). Additionally, little has been studied about international students' communicative experiences (Urban & Orbe, 2007).

Among theories to study intercultural communication effectiveness and its causal factors, anxiety/uncertainty management (AUM) theory (Gudykunst, 1988, 1993, 1995, 2005a) has been found to be an applicable theoretic framework. AUM theory's outcome predicts a correlation to either communication effectiveness or intercultural adaptation, but the two basic independent variables remain the same: uncertainty management and anxiety management (Gudykunst, 2005a, 2005b). Specifically, in this study, AUM theory hereinafter refers to communication effectiveness as its outcome. AUM theory suggests that communication effectiveness is the outcome of two basic causes, uncertainty management (uncertainty reduction) and anxiety management (anxiety reduction) (Gudykunst, 1988, 1993, 1995, 2005a). The effects of other factors on communication effectiveness are mediated through uncertainty management and anxiety management (Gudykunst, 1988, 1993, 1995, 2005a).

This study argues that AUM theory (Gudykunst, 1988, 1993, 1995, 2005a) should be applicable to international students' communication experience with U.S. faculty members. During the communication process, language and cultural barriers may produce an increase in international students' anxiety and a decrease in their "attributional confidence" (the inverse of uncertainty) (Gudykunst & Nishida, 2001, p. 55) to accurately predict and explain the attitudes, feelings, and behaviors of faculty members from the U.S. Increased anxiety and increased uncertainty held by

international students will in turn affect their effectiveness of communication with faculty members from the U.S.

The purpose of this study, then, is to utilize the AUM theoretic model to investigate international students' communication effectiveness with U.S. faculty members and to examine the causal factors affecting that outcome. Specifically, this study will survey international students regarding a "most recent" communication experience with U.S. faculty members. The relationship between each of the three major components of the AUM model, namely uncertainty management, anxiety management, and communication effectiveness, will be further tested, and the effects of two indirect factors, host language competence and knowledge of host culture, will also be explored.

Chapter 2: Literature Review

The literature review section first provides an overview of AUM theory outlining its theoretical assumptions and studies involving AUM theory and their major findings. Next, AUM theory is applied to the perspective of international students as “strangers” in the U.S. Then, three key components of the AUM model, uncertainty, anxiety, and communication effectiveness, are each stated, and their relationships are explained afterwards. After that, definitions and possible effects of two indirect factors, host language competence and knowledge of host culture, are each explicated. Finally, a theoretic model used in this study is presented.

2.1 AN OVERVIEW OF AUM THEORY

The development of AUM theory experienced several stages. In 1985, Gudykunst combined uncertainty reduction theory (Berger & Calabrese, 1975) and social identity theory (Tajfel, 1978) and proposed a model of intergroup communication (Gudykunst, 1985). Next, Gudykunst and Hammer (1988) developed a version of the theory that explained intercultural adaptation using uncertainty reduction and anxiety reduction. At about the same time, by integrating Stephan and Stephan’s (1985) work on anxiety, Gudykunst developed a theory of effective interpersonal and intergroup communication and intercultural adaptation that also concentrated on anxiety and uncertainty reduction (Gudykunst, 1988). None of the versions of the theory mentioned above were named AUM. In 1993, Gudykunst stated the meta-theoretical assumptions of the theory and changed the focus from anxiety and uncertainty reduction to anxiety and uncertainty management (Gudykunst, 1993). The 1993 version of the theory focused on interpersonal and intergroup communication competence, and was the first version of the theory labeled AUM (Gudykunst, 2005a). AUM theory regarding interpersonal and intergroup communication was updated in 1995 and then in 2005 (Gudykunst, 2005a).

AUM theory’s predicted outcome can be either communication effectiveness or intercultural adaptation, but the two basic causes remain the same: uncertainty management and anxiety management

(Gudykunst, 2005a, 2005b). AUM theory with communication effectiveness as outcome seeks to explain interpersonal (intragroup) and intergroup communication (Gudykunst, 1985, 1988, 1993, 1995, 2005a). It suggests that uncertainty management and anxiety management are two “basic causes” (Gudykunst, 2005a, p. 291) that directly influence the effectiveness of communication. Other variables, such as second language competence and knowledge of host culture, are considered “superficial causes” (p. 291) of effective communication (Gudykunst, 2005a). Superficial causes indirectly affect communication effectiveness through their direct influence on anxiety management and uncertainty management (Gudykunst, 2005a).

AUM theory with intercultural adaptation as an outcome assumes that the combination of uncertainty management and anxiety management provides both necessary and sufficient conditions for intercultural adaptation (Gudykunst, 1998, 2005b; Gudykunst & Hammer, 1988). Stated differently, managing uncertainty and anxiety are basic causes influencing the intercultural adjustment of individuals who travel to another culture to reside for a period of time (Gudykunst, 1998, 2005b; Gudykunst & Hammer, 1988). Other variables are treated as intercultural adjustment’s superficial causes, which only affect uncertainty management and anxiety management but are not directly related to intercultural adjustment (Gudykunst, 1998, 2005b; Gudykunst & Hammer, 1988).

Although AUM theory regarding effectiveness of communication was proposed more than a decade ago, only a small number of studies were found applying this theoretic model to test variable relationships in intragroup and intergroup communication. For example, Gudykunst and Nishida (2001) tested the effect of anxiety and uncertainty on perceived effectiveness of communication in two different relationships (strangers and close friends) in two cultures (U.S. and Japan). Their results indicated a moderate, positive relationship between anxiety and uncertainty across relationships and cultures (Gudykunst & Nishida, 2001). Furthermore, they also found that both anxiety and uncertainty negatively predicted perceived effectiveness of communication across relationships and cultures (Gudykunst & Nishida, 2001). Duronto, Nishida and Nakayama (2005) explored the effect of anxiety and uncertainty

on avoidance through communication between strangers of the same and different cultures in Japan. Their findings suggested anxiety and uncertainty could be good predictors of avoidance, and anxiety and uncertainty were associated with one another in the communication between strangers of a different culture (Duronto et al., 2005). These studies supported the major axioms of AUM theory.

A few qualitative studies use AUM theory as their theoretical framework to study intercultural encounters. For example, Jaasma (2002) identified and described sixth-grade students' negative and positive interethnic experiences and discussed developing friendship as a means of managing uncertainty and anxiety in interethnic encounters. Love and Powers (2002) used AUM theory's assumptions that individuals will seek information from others to reduce uncertainty while enacting communication strategies that reduce the anxiety felt when interacting with people in an unfamiliar culture to frame their research directions, and examined communication between female university students in the United Arab Emirates and first year Western faculty members new to Arab society. Their study identified cultural messages affecting faculty communication and students' four communication strategies, which offered insight into the interaction situations that caused uncertainty and anxiety for Westerners teaching in the Middle-Eastern setting (Love & Powers, 2002). The preceding qualitative studies have expanded our understanding of uncertainty and anxiety in intragroup and intergroup communication.

Thus, Gudykunst and Nishida's (2001) study centered on effectiveness of communication, but their study only involved samples from two cultures (U.S. and Japan). Love and Powers (2002) argued that "the value of AUM for communication research in cultures outside of the United States continues to remain largely unexplored" (p. 219). To date, little scholarship has filled this gap. Clearly, more research needs to be done to further test this theoretical model's power in explaining communication effectiveness. In addition, research needs to extend to individuals from diverse cultures, such as international students.

2.2 APPLICATION OF AUM THEORY TO INTERNATIONAL STUDENTS' PERSPECTIVE

International students are one category of *sojourners*, “visitors who travel to another culture to reside for a period of time, but do not intend to reside permanently in the host culture” (Gudykunst, 2005b, p. 420). Gudykunst (2005b) argued that all sojourners are *strangers* in the host culture. *Strangers* are physically present and participating in the host culture, but simultaneously, are outside the host culture because they stem from a different culture (Simmel, 1950, as cited in Gudykunst & Hammer, 1988). Strangers often try to be accepted or at least partially tolerated by members of the host culture they access (Schuetz, 1944, as cited in Gudykunst & Hammer, 1988). Gudykunst and Hammer (1988) suggested that strangers have uncertainty, represented by not knowing how to behave, and anxiety, represented by the feeling of a lack of security, in the host culture.

International students' cultures can vary substantially from the U.S. culture. As strangers, they try to be accepted or at least tolerated by host nationals, such as faculty, students and any person from the U.S. whom they might encounter. U.S. faculty members are among the most important host nationals with whom international students must have daily interaction. Such interaction is critical to international students' academic success in U.S. colleges, for “students learn firsthand how experts think about and solve problems by interacting with faculty members inside and outside the classroom” (NSSE, 2007, p. 45).

This study suggests that the AUM theory of effective interpersonal and intergroup communication is applicable from both the perspective of ingroup members being approached by strangers and the perspective of strangers approaching ingroup members (Gudykunst, 2005a). This study uses the perspective of strangers accessing a host culture different from their own. In this perspective, international students' effectiveness of communication with host nationals is affected by the international students' two central processes: managing uncertainty and managing anxiety (Gudykunst, 2005a). In terms of the perspective of international students, their uncertainty management and anxiety

management processes, in combination, are necessary conditions for effective communication with U.S. faculty members.

2.3 UNCERTAINTY

Uncertainty is defined as “a cognitive phenomenon” (Gudykunst & Nishida, 2001, p. 57) composed of “at least two distinct types of uncertainty: predictive and explanatory” (Duronto et al., 2005, p. 551). From the perspective of strangers, *predictive uncertainty* involves strangers’ inability to predict host nationals’ attitudes, feelings, beliefs, values, and behaviors (Berger & Calabrese, 1975); *Explanatory uncertainty* refers to strangers’ inability to explain host nationals’ behavior, attitudes, feelings, thoughts, and beliefs (e.g., making casual attributions) (Gudykunst, 2005a).

2.4 ANXIETY

Anxiety is uncertainty’s “affective (emotional) equivalent” (Gudykunst & Nishida, 2001, p. 59). Anxiety is a “generalized or unspecified sense of disequilibrium” (Turner, 1988, p. 61). It stems from feeling uncomfortable, nervous, anxious, or apprehensive about what might happen (Gudykunst & Nishida, 2001). It is based on an expectation of negative consequences (Stephan & Stephan, 1985).

2.5 COMMUNICATION EFFECTIVENESS

Communication is a process that involves exchanging messages and creating meanings (Barnlund, 1962). When strangers communicate with host nationals, stated from the perspective of strangers, they attach meanings to messages they construct and transmit, and they interpret the messages they receive (Gudykunst & Nishida, 2001). In this phenomenon, communication is effective under the condition “that the person interpreting the message attaches a meaning to the message that is relatively similar to what was intended by the person transmitting it” (Gudykunst & Nishida, 2001, p. 60). In other words, communication is effective to the extent that persons engaging in communication are able to maximize understandings and minimize misunderstandings (Gudykunst, 1993, 1995, 2005a). In terms of

international students' communication with host nationals, their communication is effective to the extent that both parties are able to maximize understandings and minimize misunderstandings during the interaction.

2.6 UNCERTAINTY, ANXIETY, AND COMMUNICATION EFFECTIVENESS

According to AUM theory, the uncertainty and anxiety that an individual experiences when communicating with others are related to each other (Gudykunst & Nishida, 2001). Previous studies have provided empirical support for the positive relationship between uncertainty and anxiety (Gudykunst & Nishida, 2001; Gudykunst & Shapiro, 1996; Hubbert, Gudykunst, & Guerrero, 1999). For example, Gudykunst and Nishida (2001) found that there was a positive association between anxiety and uncertainty across relationships and across cultures. Duronto et al. (2005) found that while anxiety and uncertainty were not related to each other in communication between strangers of the same culture, anxiety and uncertainty were associated with one another in communication between strangers of a different culture.

International students' communication with U.S. faculty members often involves communication between two parties of different cultures. International students represent their home country's culture, and U.S. faculty members represent the U.S. culture. Based on Duronto et al.'s (2005) findings, it is expected that international students' uncertainty and anxiety are positively associated when they communicate with U.S. faculty members.

AUM theory (Gudykunst, 1993, 1995, 2005a) posits that uncertainty management and anxiety management directly influences the effectiveness of communication. Previous research is consistent with such assumptions (Gudykunst & Nishida, 2001; Gudykunst, Nishida, & Chua, 1986; Gudykunst & Shapiro, 1996; Hubbert et al., 1999). For example, Gudykunst, Nishida, and Chua (1986) found a negative relationship between uncertainty and perceived effectiveness of communication in Japanese/North American dyads. Gudykunst and Shapiro (1996) observed associations between uncertainty and anxiety and perceived quality of communication (e.g., the level to which communication

is relaxed and smooth, which involves understanding and attentiveness), a concept closely connected to effectiveness of communication, in interpersonal relationships and in intergroup relationships. Hubbert et al. (1999) also found correlations between uncertainty and perceived effectiveness and correlations between anxiety and perceived effectiveness. Similarly, Gudykunst and Nishida's (2001) results indicated that both uncertainty and anxiety negatively predicts perceived effectiveness of communication across relationships and cultures.

Results from the preceding studies suggest there are clear relationships among uncertainty, anxiety, and effectiveness of communication in intragroup and intergroup relationships. Stranger-host national interaction, such as communication between international students and U.S. faculty members, belong to intergroup relationships. Therefore, it is expected that international students' uncertainty, anxiety, and communication effectiveness are correlated during their communication with U.S. faculty members.

In this study, uncertainty is operationalized as international students' self-perceived uncertainty (Hullett & Witte, 2001), anxiety is operationalized as international students' self-perceived anxiety (Hullett & Witte, 2001), and effectiveness of communication is operationalized as international students' self-perceived effectiveness of communication (Gudykunst & Nishida, 2001) during their interaction with U.S. faculty members. Based on the preceding discussion, the following three hypotheses are proposed:

- RH1: There is a positive association between international students' self-perceived uncertainty and their self-perceived anxiety when they communicate with U.S. faculty members.
- RH2: International students' self-perceived uncertainty negatively predicts their self-perceived communication effectiveness when they communicate with U.S. faculty members.
- RH3: International students' self-perceived anxiety negatively predicts their self-perceived communication effectiveness when they communicate with U.S. faculty members.

2.7 HOST LANGUAGE COMPETENCE

Host language competence means the ability to listen, speak, read, write, and understand the language used by host nationals (Redmond, 2000). Strangers' competence in the host language will likely assure minimum loss of information transfer and less misunderstandings in their interactions with host nationals (Redmond & Bunyi, 1993). Strangers' understandings of host nationals' languages or dialects facilitate anxiety and uncertainty management, in large part, because these factors help them understand host nationals' perspectives (Gudykunst, 2005a). AUM theory assumes that an increase in the host language competence of strangers will produce a decrease in their anxiety and an increase in their ability to accurately predict host nationals' behavior during the process of stranger-host national communication (Gudykunst, 2005a). To date, little scholarship has tested this hypothesis.

However, host language competence has been observed in a few studies applying AUM theory with intercultural adaptation rather than communication effectiveness as outcome. For example, Hammer, Wiseman, Rasmussen and Bruschke's (1998) study of international students' adaptation to the U.S. culture considered second language proficiency one of the variables constituting communication message, one of the four factors that was hypothesized to directly influence uncertainty reduction and anxiety reduction. They assumed that "increased language proficiency is related to uncertainty reduction and anxiety reduction" among strangers (Hammer et al., 1998, p. 315). Contrary to their expectation, they found that there was no significant relationship between language proficiency and either uncertainty reduction or anxiety reduction (Hammer et al., 1998), which was inconsistent with assumptions of AUM theory with intercultural adjustment as outcome.

In addition, host language competence has been identified as one of the six overriding qualities or components of intercultural communication competence (Redmond, 2000; Redmond & Bunyi, 1993). Redmond and Bunyi's (1993) study did not involve uncertainty and anxiety, but focused on intercultural communication competence and stress. Nevertheless, they observed that there was a direct and strong

relationship between host language competence and communication effectiveness. This finding indicated that host language competence might be a strong predictor of communication effectiveness.

Due to a paucity of data, it remains unclear as to the effect of host language competence in the AUM model. In terms of international students' communication with U.S. faculty members, further research is needed to explore whether international students' host language competence predicts their uncertainty and anxiety during such interaction. In this study, host language competence is operationalized as international students' self-perceived English proficiency (Hammer et al., 1998). The following two research questions are proposed:

RQ1: Does international students' self-perceived English proficiency predict their self-perceived uncertainty when they communicate with U.S. faculty members?

RQ2: Does international students' self-perceived English proficiency predict their self-perceived anxiety when they communicate with U.S. faculty members?

2.8 KNOWLEDGE OF HOST CULTURE

Host language competence alone may not be enough to ensure that strangers' communication with host nationals will be effective (Gudykunst, 1991). Strangers' misunderstandings in intercultural communication often stem from their not knowing the norms and rules guiding the communication of host nationals (Gudykunst, 1991). *Knowledge of host culture* stands for "familiarity and understanding with a culture's history, traditions, values, and customs" (Redmond, 2000, p. 153). AUM theory assumes that an increase in strangers' knowledge of host culture will produce a decrease in their anxiety and an increase in the accuracy of their predictions and explanations of the behavior of host nationals during the process of stranger-host national communication (Gudykunst & Hammer, 1988). To date, little scholarship has tested this assumption.

However, knowledge of host culture has been examined in a few studies using AUM theory to study intercultural adaptation. For example, Gao and Gudykunst (1990) found that the effect of knowledge of host culture on intercultural adjustment is mediated through the reduction of uncertainty

and anxiety, which supported the assumptions of AUM theory focusing on adaptation (Gudykunst & Hammer, 1988). Hammer et al.'s (1998) study of international students' adaptation to the U.S. culture treated knowledge of host culture as one of the variables forming intergroup salencies, one of the four factors that were hypothesized to directly influence uncertainty reduction and anxiety reduction. They assumed that "higher levels of knowledge about the host culture is related to uncertainty reduction and anxiety reduction" among strangers (Hammer et al., 1998, p. 315). However, they found knowledge of host culture was only an important aspect of uncertainty reduction, but was not significantly associated to one's ability to reduce felt anxiety in a host culture (Hammer et al., 1998). This result was not completely in line with the assumptions of AUM theory with intercultural adjustment as an outcome.

In addition, knowledge of host culture has been identified as one of the skills constituting intercultural communication competence (Redmond, 2000; Redmond & Bunyi, 1993). Although Redmond and Bunyi's (1993) study did not examine uncertainty and anxiety, they found that knowledge of host culture positively correlated with communication effectiveness. This result indicated that knowledge of host culture might also be a strong predictor of communication effectiveness.

Similar to host language competence, it remains unclear as to the effect of knowledge of host culture in the AUM model due to a lack of data. In terms of international students' communication with U.S. faculty members, further research is necessary to examine whether international students' knowledge of host culture predicts their uncertainty and anxiety during such interaction. In this study, knowledge of host culture is operationalized as international students' self-perceived knowledge of U.S. culture (Gao & Gudykunst, 1990; Hammer et al., 1998). The following two research questions are proposed:

- RQ3: Does international students' self-perceived knowledge of U.S. culture predict their self-perceived uncertainty when they communicate with U.S. faculty members?
- RQ4: Does international students' self-perceived knowledge of U.S. culture predict their self-perceived anxiety when they communicate with U.S. faculty members?

2.9 THEORETIC MODEL

Based on the review of each of the variables and their relationships, a theoretic model based on AUM theory was constructed, which was shown in Figure 2.1. Five major constructs and their relationships were identified in the theoretical model. As illustrated by the model, this study assumed that uncertainty and anxiety are correlated, and they are both predictors of communication effectiveness. English proficiency and knowledge of U.S. culture are both predictors of uncertainty and predictors of anxiety as well.

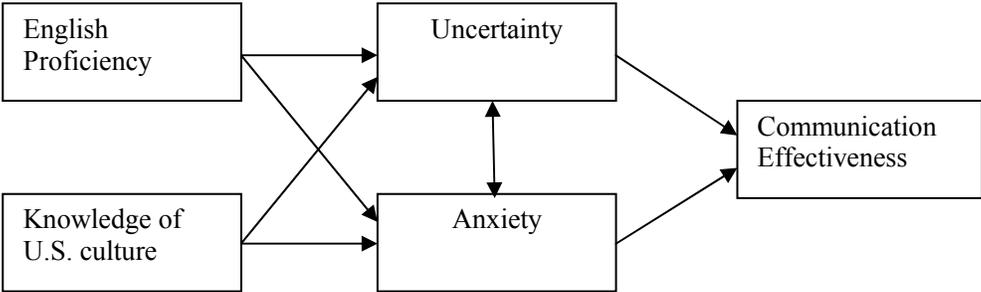


Figure 2.1: Theoretical Model

Chapter 3: Methodology

3.1 SELECTION OF RESEARCH METHODS

A survey method was used in this study to gather data to test the three hypotheses and answer the four research questions. Using the survey method has certain advantages. For example, surveys are relatively low-cost. Standardized questions in the questionnaire make reporting more accurate by implementing uniform definitions on the participants (Barribeau et al., 2005). Standardization also makes sure that similar data can be gathered from groups, then interpreted comparatively (Barribeau et al., 2005). However, the survey method also has its limitations because it depends on participants' self-reports. Inaccuracies in the collected data can be caused by intentional deception, poor memory or misunderstanding of the questions (Czaja & Blair, 2005).

The survey method used in this study was carried out in two forms, one is the traditional paper-and-pencil survey, and the other is an email survey. The traditional paper-and-pencil survey has been widely used in the communication research (e.g., Duronto et al., 2005; Gudykunst & Nishida, 2001; Hammer et al., 1998). Compared to the paper-and-pencil survey, internet-based research, such as the email survey, is less expensive and is able to provide a potential pool of a large number of participants (Ahern, 2005). However, a number of studies have reported lower response rates for internet-based survey compared to traditional mail methods (Crawford, Couper, & Lamias, 2001). The response rate of an email survey can be increased by sending one to two follow-up memos (Kittleson, 1997).

3.2 SAMPLING PLAN AND SAMPLING CHARACTERISTICS

The paper survey method and the email survey method were administered from January 21, 2009 to February 20, 2009 respectively to collect data. The researcher waited outside the Office of International Programs every day from 2:00 pm to 4:00 pm and distributed paper surveys to international students who visited the office. When approaching a potential respondent, the researcher

first asked the student whether he/she was an international student. If the answer was “yes,” the researcher inquired whether the student had an interest in participating in a research study about international students’ communication experience. If the student agreed to participate, a copy of the paper survey was given and then the student filled out the paper survey in the presence of the researcher. The researcher answered questions and concerns raised by the student during the process of completing the survey. Seventy-nine surveys were collected during one month. Two incomplete paper surveys were eliminated, and 77 paper surveys were valid.

A complete list of 2,073 international students’ names and email addresses was obtained through the Center for Institutional Evaluation, Research and Planning at a medium-sized university in the Southwestern U. S. Those students on the list were enrolled at that university for Fall 2008. An email distribution list (isdl@xx.edu) targeting all international students on the list was created for the researcher by the Information Security Office. The researcher then constructed an email addressed to the distribution list. A brief letter from the researcher was written inside the email body describing the survey purpose and giving instructions (refer to Appendix A). Literature has documented that no significant differences were found in the response rate between an e-mail survey and an e-mail-recruited, web pages-based survey (Kittleson & Brown, 2005). Therefore SurveyMonkey.com Website was not used. Instead, a complete copy of the survey document in MS Word (97-2003 version) format was attached to the email.

The first email was sent out on January 24, 2009. A second email was sent after one week and then a third email was sent after another week. Each time 13 emails were immediately returned because those email addresses were invalid. The first email returned with 61 responses, the second email returned with 28, and the third email returned with 18. This totaled 107 email surveys that were received within one month. The email survey’s response rate is 5.2%. Four responsive surveys were excluded due to a lot of incomplete items or because the respondent indicated that the answers were not related to a U.S. faculty; 103 email surveys were valid.

Many researchers across disciplines have found no difference between the internet-based survey data and the paper-and-pencil survey data (Ahern, 2005). Thus the 77 paper surveys and the 103 email survey were grouped together. Finally 180 surveys were included in the statistical analysis.

The final sample of the study consisted of 180 international students. Most of the participants were from Mexico, others were from different countries: India, China, Columbia, etc. Table 3.1 shows the citizenship of the sample. Most of the participants' first language is Spanish, and other first languages include Chinese, different Indian dialects, Arabic, French, Hindi, Portuguese, etc. Table 3.2 shows the first languages of the sample.

Table 3.1: Citizenship of the Sample

Citizenship	Frequency	Percent (%)
Mexico	127	70.6
India	14	7.8
China	7	3.9
Columbia	5	2.8
Brazil	3	1.7
France	3	1.7
Taiwan	3	1.7
Russia	2	1.1
Argentina	1	0.6
Australia	1	0.6
Egypt	1	0.6
Peru	1	0.6
Slovakia	1	0.6
South Korea	1	0.6
Thailand	1	0.6
Iran	1	0.6
Germany	1	0.6
Morocco	1	0.6
Kenya	1	0.6

Libya	1	0.6
Malaysia	1	0.6
Saint Lucia	1	0.6
El Salvador	1	0.6
Switzerland	1	0.6
Total	180	100

Table 3.2: First Languages of the Sample

First Language	Frequency	Percent
Spanish	135	75
Other Indian Language	11	6.1
Chinese	10	5.6
Arabic	3	1.7
French	3	1.7
Hindi	3	1.7
Portuguese	3	1.7
English	2	1.1
Russian	2	1.1
German	2	1.1
Korean	1	0.6
Slovakian	1	0.6
Persian	1	0.6
Kiswahili	1	0.6
Malay	1	0.6
Thai	1	0.6
Total	180	100

Among the 180 participants, 100 (55.6%) were male, and 80 (44.4%) were female. Their average age was 24.80 years with a range of 18 to 52 years ($SD = 6.72$). The participants' length of study in the U.S. ranged from one month to 180 months ($M = 41.07$, $SD = 34.65$). 65 respondents (36.1%) indicated

that TOEFL was not applicable for them, and 15 respondents (8.3%) replied that they did not remember their TOEFL scores. Therefore, the average TOEFL score of the participants cannot be obtained. 104 participants (57.8%) were science and engineering students, 73 (40.6%) were liberal arts, social sciences and business students, and 3 students (1.7%) indicated that a major was not applicable to them. 107 participants (59.4%) were undergraduate students, 52 (28.9%) were master's students, and 21 (11.7%) were Ph.D. students. 157 participants (87.2%) were single, 22 (12.2%) were married, and one student did not answer the marital status.

3.3 INSTRUMENTATION

3.3.1 Instrument Development

The survey questionnaire consisted of three parts. The first part is an Informed Consent form. The form presented the intention of the study, and explained the risks, benefits, costs, and confidentiality of the participants. This section also provided the contact information of the principal investigator and of the Institutional Review Board (IRB) administrator as well.

On top of the second part is the purpose of the survey. Following that is a screening question: Are you an international student and over age 18? (An international student refers to a student who is not a U.S. citizen). After that, demographic information was gathered, including citizenship, gender, age, length of study in the U.S., TOEFL¹ score, major, class level and marital status.

In the third part, participants were instructed to think about their spoken communication experience with any professor who is originally from the U.S. Then they answered questions regarding that spoken communication experience. Items in the third part were designed to measure each of the variables in the theoretic model of this study.

Measurement

Uncertainty.

Uncertainty was assessed using a modified version of Gudykunst and Nishida's (1986) low and high-context measure of attributional confidence, which integrates Clatterbuck's (1979) attributional confidence scale. Gudykunst and Nishida's (1986) attributional confidence scale had been used in previous studies and had been confirmed to be a reliable scale (Duronto et al., 2005; Gao & Gudykunst, 1990; Gudykunst & Nishida, 2001; Hammer & Martin, 1992; Hullett & Witte, 2001).

Low-context attributional confidence is based on low-context communication (Hall, 1976; e.g., direct, precise). The low-context attributional confidence items used in this study were presented as follows: "The last time I talked with this professor, I was confident in my ability to predict his/her _____." The predictions were about the faculty member's behavior, attitude, feelings, values, willingness to communicate, feeling about himself/herself, and what he/she meant.

High-context attributional confidence is based on uncertainty reduction during high context communication (Hall, 1976; e.g., indirect, ambiguous). The high-context attributional confidence items used in this study were presented as follows: "The last time I talked with this professor, I was confident that _____." "He/she would make allowances for me," "He/she could understand my feelings," and "He/she would like me."

The response scale ranged from 1 = strongly disagree to 5 = strongly agree. The higher the score on this measure, the greater the attributional confidence (the lower the uncertainty).

Anxiety.

Anxiety was assessed with 10 items adapted from Stephan and Stephan's (1985) intergroup anxiety measure, which had been used in earlier studies and had been found to have acceptable reliability (Duronto et al., 2005; Gao & Gudykunst, 1990; Gudykunst & Nishida, 2001; Hammer & Martin, 1992; Hammer et al., 1998; Hullett & Witte, 2001).

The items used for anxiety measurement took the general form: "The last time I talked with this professor, I felt _____." The adjectives used were calm*, frustrated, confused, worried, anxious, relaxed*, irritated, impatient, comfortable*, and awkward. The response scale was the same as that for

uncertainty. The higher the score, the greater the anxiety. The items marked (*) were reversed for scoring.

Effectiveness of communication.

Effectiveness of communication was assessed by modifying five items in Gudykunst & Nishida's (2001) measure of perceived effectiveness of communication. The combination of the five items was found to yield a reliable scale (Gudykunst & Nishida, 2001). The items used for this measurement took the general form: "The last time I talked with this professor, ____." The statements used were presented as follows: "I communicated effectively with him/her," "my communication with him/her was not successful (*)," "I felt competent when I communicated with him/her," "I communicated appropriately with him/her," and "my communication with him/her was a failure (*)." The response scale was the same as that for uncertainty. The items marked (*) were reversed for scoring. The higher the score, the greater the effectiveness of communication.

English proficiency.

Hammer et al. (1998) measured English proficiency through participants' self-evaluations of their English proficiency on four items: speaking, reading, listening comprehension, and writing. They found the inter-item reliability for these four items was very high (Hammer et al., 1998). Since this study focuses on oral communication, only two dimensions were used for measurement, which were presented as follows: "How good do you think your English listening ability is?", and "How good do you think your English speaking ability is?" The response scale ranged from 1 = very poor to 5 = very good. The higher the score on this scale, the greater the perceived English proficiency.

Knowledge of U.S. culture.

Gao and Gudykunst (1990) measured knowledge of U.S. culture by asking participants the extent to which they understand the norms, values, customs, and language of the U.S. culture with a seven-point scale (1 = none of them; 7 = all of them). They found the combination of the four items yielded a reliable scale. Three items of Gao and Gudykunst's (1990) measurement were used in this study for

assessing knowledge of host culture, which were presented as follows: “How many U.S. values do you think you understand?”, “How many U.S. customs do you think you understand?”, and “How many U.S. norms do you think you understand?” The response scale ranged from 1 = none of them to 5 = all of them. The higher the score, the greater the perceived knowledge of host culture.

3.3.2 Pretesting of the Instrument

The purpose of a pretest is to discover if there is confusion or misunderstanding of the instrument. A pretest of the email survey was first conducted in December 2008 among a group of 13 international students, who were part of the International Representative program at a university in the southwestern United States. The researcher sent out the email survey four times. Each time’s gap was about one week. Seven responses were received from the pretest of the email survey. No problem was found from the received email surveys.

A pretest of the paper survey was then conducted on two days in the middle of January 2009. The researcher distributed surveys to 18 international students outside the Office of International Programs. 16 collected paper surveys were valid. Some problems were found in the pretest of the paper survey and revisions were made accordingly.

3.3.3 Revision of the Instrument

Seven changes were made to the instrument. The first change was moving the screening question from the questionnaire to the first page of the Informed Consent. The reason for this change is that if a participant is not an international student, he/she could stop immediately when reading the Informed Consent form. This change saved both the researcher and the participants’ time and avoided the waste of printed copies of surveys.

The second change was deleting the sentence under the heading of “What about confidentiality:” “The study is anonymous. Your name will not be recorded during and after the study.” A participant

commented during the process of filling out the survey that when he printed and signed his name, his name actually would be recorded. Thus this sentence was deleted to avoid any disputes.

The third revision was changing “How long have you studied at ××university” to “How long have you studied in the U.S.?” This change was made because some international students at ××university might have studied at other U.S. universities before coming to ××university.

The fourth change was adding “Test Type: _____” after “TOEFL score” because there are three types of TOEFL tests: paper-based, computer-based, and internet-based. The fifth change was adding “IELTS score: _____” because some international students did not take TOEFL, instead, they took IELTS test. The sixth change was adding “I was exempt from taking TOEFL/IELTS before I enrolled in a U.S. university, because _____.” This change was made because some international students did not need to take TOEFL/IELTS for various reasons.

The last revision was changing “please think about your most recent spoken communication experience with a particular professor who is originally from the U.S.” to “please think about your spoken communication experience with any professor who is originally from the U.S. that happened the last time before participating in this survey.” The reason for this change is to make the survey target at the last time of all the spoken communication experience with all U.S. professors. The final survey instrument consisted of an informed consent form of three pages and a questionnaire of three pages as well. A sample instrument used in this study is attached in the Appendix B.

3.3.4 Reliability Coefficients of Constructs in the Instrument

As a measure of internal consistency, Cronbach's alpha determines the extent to which all the items are measuring the same construct (Cronk, 2006). It shows whether a measurement is reliable. Cronbach's alphas close to 0.00 represent poor internal consistency, while numbers close to 1.00 stand

for good internal consistency (Cronk, 2006). Cronbach's alphas of 0.60 or greater serve as an indicator of the instrument's reliability (Nunnally, 1976).

Cronbach's alphas were run to find out the reliability of each measurement in the instrument. Table 3.3 shows Cronbach's alphas and number of scales for each measuring construct. As shown in Table 3.3, Cronbach's alphas of all constructs except English Proficiency are above 0.8, which shows high reliabilities of those constructs. Cronbach's alpha of English Proficiency, 0.771, is also considered good reliability. Thus all constructs are considered reliable for measuring what they intend to measure.

Table 3.3: Cronbach's alphas of Constructs in the Theoretical Model

Construct	Cronbach's Alpha	Number of Items
Uncertainty	0.891	10
Anxiety	0.899	10
Communication Effectiveness	0.835	5
English Proficiency	0.771	2
Knowledge of U.S. culture	0.893	3

Chapter 4: Findings

4.1 DESCRIPTIVE STATISTICS

As shown in the theoretic model (Figure 2.1), this study measured the following constructs: uncertainty, anxiety, communication effectiveness, English proficiency, and knowledge of U.S. culture. To find out how participants self-perceived their uncertainty, anxiety, communication effectiveness, English proficiency, and knowledge of U.S. culture when they communicate with U.S. faculty members, descriptive statistics of all constructs were performed.

4.1.1 Descriptive Statistics of Uncertainty

Uncertainty is the inverse of attributional confidence (Hullett & Witte, 2001). In this study, uncertainty was assessed by the scales for measuring attributional confidence (Gudykunst & Nishida, 1986; Clatterbuck, 1979). The descriptive statistics of both attributional confidence and uncertainty were presented in this section.

Ten items were used to measure attributional confidence. As shown in Table 4.1, participants' self-perceived attributional confidence is between a neutral position and an agreement position ($M = 3.65$, $SD = 0.67$). They showed attributional confidence the last time they talked with a U.S. professor, but the confidence level was not very high. Participants agreed that they were confident in their abilities to predict U.S. faculty members' willingness to communicate ($M = 4.01$, $SD = 0.85$) and what U.S. faculty members meant ($M = 4.04$, $SD = 0.91$). Other measuring items all showed positions between being neutral and agreed.

Table 4.1: Descriptive Statistics of Attributional Confidence

	Mean	Std. Deviation
Attributional Confidence	3.65	0.67
The last time I talked with this professor, I was confident in my ability to predict his/her _____.		
behavior	3.73	0.97
attitude	3.87	0.91
feelings	3.36	0.99
values	3.58	0.93
willingness to communicate	4.01	0.85
feeling about himself/herself	3.41	1.05
what he/she meant	4.04	0.91
The last time I talked with this professor, I was confident that _____.		
he/she would make allowances for me	3.47	0.91
he/she could understand my feelings	3.56	0.99
he/she would like me	3.43	0.92

Uncertainty was computed by the mean score of each reversely-coded item used for measuring attributional confidence. Table 4.2 shows the descriptive statistics of uncertainty. Overall, participants' self-perceived uncertainty the last time they talked with a U.S. professor is low, close to a disagreement position ($M = 2.35$, $SD = 0.67$).

Table 4.2: Descriptive Statistics of Uncertainty

	Mean	Std. Deviation
Uncertainty	2.35	0.67
The last time I talked with this professor, I was confident in my ability to predict his/her _____.		
behavior*	2.27	0.97
attitude*	2.13	0.91
feelings*	2.64	0.99
values*	2.42	0.93
willingness to communicate*	1.99	0.85
feeling about himself/herself*	2.59	1.05
what he/she meant*	1.96	0.91

The last time I talked with this professor, I was confident that _____.		
he/she would make allowances for me*	2.53	0.91
he/she could understand my feelings*	2.44	0.99
he/she would like me*	2.57	0.92

Note. The items marked (*) were reversed for scoring.

4.1.2 Descriptive Statistics of Anxiety

Anxiety was measured by 10 items. Descriptive statistics of anxiety were illustrated in Table 4.3. Overall, participants' self-perceived anxiety the last time they talked with a U.S. professor is low, close to a disagreement position ($M = 2.22$, $SD = 0.74$). They disagreed that they felt irritated ($M = 1.84$, $SD = 0.94$), that they felt frustrated ($M = 2.13$, $SD = 1.07$), and that they felt impatient ($M = 2.14$, $SD = 1.08$). Other measuring items all showed positions close to disagreement.

Table 4.3: Descriptive Statistics of Anxiety

	Mean	Std. Deviation
Anxiety	2.22	0.74
The last time I talked with this professor, I felt _____.		
calm*	2.18	0.89
frustrated	2.13	1.07
confused	2.26	1.11
worried	2.37	1.13
anxious	2.37	1.14
relaxed*	2.48	0.99
irritated	1.84	0.94
impatient	2.14	1.08
comfortable*	2.22	0.88
awkward	2.22	0.99

Note. The items marked (*) were reversed for scoring.

4.1.3 Descriptive Statistics of Communication Effectiveness

Communication effectiveness was assessed by five items. Table 4.4 illustrated the descriptive

statistics of communication effectiveness. Overall, participants perceived that their communication with a U.S. professor was effective the last time ($M = 4.06$, $SD = 0.65$). They disagreed that their communication with the U.S. professor was a failure ($M = 4.43$, $SD = 0.76$). They also disagreed that their communication with the U.S. professor was NOT successful ($M = 4.14$, $SD = 0.90$).

Table 4.4: Descriptive Statistics of Communication Effectiveness

	Mean	Std. Deviation
Communication Effectiveness	4.06	0.65
The last time I talked with this professor, _____.		
I communicated effectively with him/her.	4.01	0.81
my communication with him/her was NOT successful*	4.14	0.90
I felt competent when I communicated with him/her.	3.70	0.93
I communicated appropriately with him/her.	4.01	0.79
my communication with him/her was a failure*	4.43	0.76

Note. The items marked (*) were reversed for scoring.

4.1.4 Descriptive Statistics of English Proficiency

English proficiency was evaluated by two items. Descriptive statistics of English proficiency was illustrated in Table 4.5. Generally, participants' self-perceived English proficiency is good ($M = 4.04$, $SD = 0.74$). However, they perceived that their listening ability ($M = 4.28$, $SD = 0.78$) is better than their speaking ability ($M = 3.81$, $SD = 0.86$).

Table 4.5: Descriptive Statistics of English proficiency

	Mean	Std. Deviation
English Proficiency	4.04	0.74
How good DO YOU THINK your English _____ is?		
listening ability	4.28	0.78
speaking ability	3.81	0.86

4.1.5 Descriptive Statistics of Knowledge of U.S. culture

Three items were used to measure knowledge of U.S. culture. Table 4.6 illustrated descriptive statistics of knowledge of U.S. culture. Generally, participants perceived that their knowledge of U.S. culture is in a position between “Not So Few, and Not So Many” and “Many of Them” ($M = 3.53$, $SD = 0.76$). Their self-perceived understanding of the U.S. values, of the U.S. customs, and of the U.S. norms are all in similar positions.

Table 4.6: Descriptive Statistics of Knowledge of U.S. culture

	Mean	Std. Deviation
Knowledge of U.S. culture	3.53	0.76
How many U.S. _____ DO YOU THINK you understand?		
values	3.58	0.81
customs	3.49	0.83
norms	3.52	0.86

4.2. INFERENCE STATISTICS

This study proposed three research hypotheses and four research questions as follows:

RH1: There is a positive association between international students’ self-perceived uncertainty and their self-perceived anxiety when they communicate with U.S. faculty members.

RH2: International students’ self-perceived uncertainty negatively predicts their self-perceived communication effectiveness when they communicate with U.S. faculty members.

RH3: International students’ self-perceived anxiety negatively predicts their self-perceived communication effectiveness when they communicate with U.S. faculty members.

RQ1: Does international students’ self-perceived English proficiency predict their self-perceived uncertainty when they communicate with U.S. faculty members?

- RQ2: Does international students' self-perceived English proficiency predict their self-perceived anxiety when they communicate with U.S. faculty members?
- RQ3: Does international students' self-perceived knowledge of U.S. culture predict their self-perceived uncertainty when they communicate with U.S. faculty members?
- RQ4: Does international students' self-perceived knowledge of U.S. culture predict their self-perceived anxiety when they communicate with U.S. faculty members?

4.2.1 Relationship between Uncertainty and Anxiety

To test RH1, a bivariate correlation analysis method among the inferential statistics was selected to perform this task. The Pearson correlation coefficient (the Pearson r) obtained through the bivariate correlation analysis determines the strength of the linear relationship between two variables (Cronk, 2006). The Pearson correlation coefficient close to 1.0 or -1.0 represents a strong relationship between two variables, while the value close to 0 represents a weak or no relationship (Cronk, 2006). Cohen (1988) suggested that correlations of 0.1, 0.3, and 0.5 corresponded to small, moderate, and large relationships for the behavioral sciences.

A Pearson correlation coefficient was calculated for the relationship between participants' uncertainty and anxiety. As shown in Table 4.8, a positive and moderate correlation that was significant was found ($r(178) = .440, p < .001$). Participants who have higher uncertainty tend to have higher anxiety. The correlation coefficient value supports H1: There is a positive and moderate association between international students' self-perceived uncertainty and their self-perceived anxiety when they communicate with U.S. faculty members. The coefficient of determination (r^2) equals .193, which means that 19.3% of the variation in anxiety can be explained by differences in uncertainty, and 19.3% of the variation in uncertainty can be explained by differences in anxiety.

Table 4.7: Bivariate Correlation Between Uncertainty and Anxiety

		Uncertainty	Anxiety
Uncertainty	Pearson Correlation	1	.440**
	Sig. (2-tailed)		.000
	N	180	180
Anxiety	Pearson Correlation	.440**	1
	Sig. (2-tailed)	.000	
	N	180	180

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

4.2.2 Correlations between Constructs in the Theoretic Model

To better understand the relationship between each construct in the theoretic model, an inter-correlation between each construct was calculated. Table 4.8 provides a five-variable bivariate correlation matrix. As shown in Table 4.8, there is a significant and negative relationship between uncertainty and communication effectiveness ($r(178) = -.342, p < .001$), and there is a significant and negative relationship between anxiety and communication effectiveness ($r(178) = -.536, p < .001$). There is a significant and positive relationship between English proficiency and communication effectiveness ($r(178) = .510, p < .001$), and there is a significant and positive relationship between knowledge of U.S. culture and communication effectiveness ($r(178) = .414, p < .001$).

Table 4.8 also shows the relationship between each of the two predictors. English proficiency is significantly and negatively related to uncertainty ($r(178) = -.254, p < .01$) and to anxiety ($r(178) = -.316, p < .001$). Knowledge of U.S. culture is significantly and negatively related to uncertainty ($r(178) = -.158, p < .05$) but not related to anxiety ($r(178) = -.127, p = .089 > .05$). In addition, there is a significant and positive relationship between English proficiency and knowledge of U.S. culture ($r(178) = .432, p < .001$).

Examining correlations between predictors can find out if there is a problem of multicollinearity. “A correlation between predictors as low as .58 prevented accurate identification of the influence of both predictors” (Dizney & Gromen, 1967, cited in Reinard, 2006, p. 353). As shown in table 4.8, the largest

correlation between predictors exists in the correlation between uncertainty and anxiety ($r(178) = .440$, $p < .001$) which is less than .58. Therefore, no multicollinearity problems are claimed.

Table 4.8: Pearson Correlation Matrix between Each Construct in the Theoretic Model

		Uncertainty	Anxiety	Communication Effectiveness	English proficiency	Knowledge of U.S. culture
Uncertainty	Pearson Correlation	1	.440**	-.342**	-.254**	-.158*
	Sig. (2-tailed)		0	0	0.001	0.034
	N	180	180	180	180	180
Anxiety	Pearson Correlation	.440**	1	-.536**	-.316**	-0.127
	Sig. (2-tailed)	0		0	0	0.089
	N	180	180	180	180	180
Communication Effectiveness	Pearson Correlation	-.342**	-.536**	1	.510**	.414**
	Sig. (2-tailed)	0	0		0	0
	N	180	180	180	180	180
English proficiency	Pearson Correlation	-.254**	-.316**	.510**	1	.432**
	Sig. (2-tailed)	0.001	0	0		0
	N	180	180	180	180	180
Knowledge of U.S. culture	Pearson Correlation	-.158*	-0.127	.414**	.432**	1
	Sig. (2-tailed)	0.034	0.089	0	0	
	N	180	180	180	180	180

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

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

4.2.3 Predicting Effects of Uncertainty, Anxiety, English Proficiency and

Knowledge of U.S. Culture on Communication Effectiveness

To test RH2 and RH3, a multiple regression analysis was performed with uncertainty, anxiety, English proficiency and knowledge of U.S. culture as independent variables and communication effectiveness as a dependent variable. The multiple regression analysis is a statistical technique for describing and analyzing relationships between a dependent variable, also known as the predicted variable, and two or more independent variables, the predictors (Johnson, 2000). If the significance level obtained from the ANOVA table is less than .05, a significant linear regression is found (Cronk, 2006).

As discussed in 4.2.2, English proficiency and knowledge of U.S. culture both significantly

correlated with communication effectiveness. Therefore the model of this multiple regression analysis included these two variables as predictors in addition to uncertainty and anxiety. The purpose of this multiple regression analysis was to find out the contribution of each of the four predictors on communication effectiveness.

Tables 4.9, 4.10 and 4.11 show the output of the multiple regression analysis. A significant regression equation was found ($F(4, 175) = 38.499, p < .001$), with an R^2 of .468. Participants' self-perceived uncertainty, self-perceived anxiety, self-perceived English proficiency and self-perceived knowledge of U.S. culture were found to account for 46.8% of variances in their self-perceived communication effectiveness. Anxiety ($\beta = -.394, p < .001$), English proficiency ($\beta = .267, p < .001$), and knowledge of U.S. culture ($\beta = .239, p < .001$) all have significant predicting effects on communication effectiveness. However, uncertainty does not have a significant predicting effect on communication effectiveness ($\beta = -.064, p = .306$). A comparison of the β 's suggests that self-perceived anxiety has the largest predicting effect on self-perceived communication effectiveness, self-perceived English proficiency ranks second in the predicting effect, and self-perceived knowledge of U.S. culture ranks third in the predicting effect.

The output of the multiple regression analysis does not support RH2, but supports RH3. International students' self-perceived uncertainty does not predict their self-perceived communication effectiveness when they communicate with U.S. faculty members. However, international students' self-perceived anxiety negatively predicts their self-perceived communication effectiveness when they communicate with U.S. faculty members.

Table 4.9: Model Summary for the Multiple Regression, Anxiety, Uncertainty, English proficiency, and Knowledge of U.S. culture Predict Communication Effectiveness

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.684	0.468	0.456	0.48202

Table 4.10: ANOVA for the Multiple Regression, Anxiety, Uncertainty, English proficiency, and Knowledge of U.S. culture Predict Communication Effectiveness

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.779	4	8.945	38.499	.000 ^a
	Residual	40.660	175	.232		
	Total	76.439	179			

Table 4.11: Coefficients for the Multiple Regression, Anxiety, Uncertainty, English proficiency, and Knowledge of U.S. culture Predict Communication Effectiveness

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.300	0.310		10.639	.000
	English proficiency	0.234	0.056	0.267	4.150	.000
	Knowledge of U.S. culture	0.206	0.053	0.239	3.899	.000
	Uncertainty	-0.062	0.061	-0.064	-1.028	.306
	Anxiety	-0.347	0.056	-0.394	-6.230	.000

4.2.4 Predicting Effects of English Proficiency and Knowledge of U.S.

Culture on Uncertainty

To answer RQ1 and RQ3, a multiple regression analysis was performed with English proficiency and knowledge of U.S. culture as two independent variables and uncertainty as a dependent variable.

Tables 4.12, 4.13 and 4.14 show the output of the multiple regression analysis. A significant regression equation was found ($F(2, 177) = 6.373, p = .002 < .01$), with an R^2 of .067. Participants' self-perceived English proficiency and self-perceived knowledge of U.S. culture were found to account for 6.7% of

variances in their self-perceived uncertainty.

English proficiency ($\beta = -0.228, p = .005 < .01$) has a significant and negative predicting effect on uncertainty. However, knowledge of U.S. culture does not have a significant predicting effect on uncertainty ($\beta = -0.059, p = 0.463 > .05$). The output of the multiple regression analysis confirms RQ1, but denies RQ3. International students' self-perceived English proficiency negatively predicts their self-perceived uncertainty, while their self-perceived knowledge of U.S. culture does not predict their self-perceived uncertainty, when they communicate with U.S. faculty members.

Table 4.12: Model Summary for the Multiple Regression, English proficiency and Knowledge of U.S. culture Predict Uncertainty

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.259	0.067	0.057	0.65033

Table 4.13: ANOVA for the Multiple Regression, English proficiency and Knowledge of U.S. culture Predict Uncertainty

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.391	2	2.695	6.373	0.002
	Residual	74.858	177	0.423		
	Total	80.249	179			

Table 4.14: Coefficients for the Multiple Regression, English proficiency and Knowledge of U.S. Culture Predict Uncertainty

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

	(Constant)	3.367	0.296		11.370	0.000
1	English proficiency	-0.205	0.072	-0.228	-2.833	0.005
	Knowledge of the U.S. culture	-0.052	0.071	-0.059	-0.736	0.463

4.2.5 Predicting Effects of English Proficiency and Knowledge of U.S.

Culture on Anxiety

To answer RQ2 and RQ4, a multiple regression analysis was performed with English proficiency and knowledge of U.S. culture as two independent variables and anxiety as a dependent variable. Tables 4.15, 4.16 and 4.17 show the output of the multiple regression analysis. A significant regression equation was found ($F(2, 177) = 9.846, p < .001$), with an R^2 of .100. Participants' self-perceived English proficiency and self-perceived knowledge of U.S. culture were found to account for 10% of variances in their self-perceived anxiety.

English proficiency ($\beta = -0.321, p < .001$) has a significant and negative predicting effect on anxiety. However, knowledge of U.S. culture does not have a significant predicting effect on anxiety ($\beta = 0.012, p = 0.880 > .05$). The output of the multiple regression analysis confirms RQ2, but denies RQ4. International students' self-perceived English proficiency negatively predicts their self-perceived anxiety, while their self-perceived knowledge of U.S. culture does not predict their self-perceived anxiety, when they communicate with U.S. faculty members.

Table 4.15: Model Summary for the Multiple Regression, English proficiency and Knowledge of U.S. culture Predict Anxiety

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.316	0.100	0.090	0.70818

Table 4.16: ANOVA for the Multiple Regression, English proficiency and Knowledge of U.S. culture

Predict Anxiety

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.876	2	4.938	9.846	0.000
	Residual	88.770	177	0.502		
	Total	98.646	179			

Table 4.17: Coefficients for the Multiple Regression, English proficiency and Knowledge of U.S.

Culture Predict Anxiety

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.477	0.323		10.781	0.000
	English proficiency	-0.321	0.079	-0.321	-4.065	0.000
	Knowledge of the U.S. culture	0.012	0.078	0.012	0.151	0.880

Chapter 5: Discussion

This study measured five major constructs, namely uncertainty, anxiety, communication effectiveness, English proficiency, and knowledge of U.S. culture in a theoretical model based on AUM theory. Bivariate correlations between each major construct and multiple regression analyses revealed the following results: The first and third hypotheses were supported, while the second was not. When international students communicate with U.S. faculty members, their self-perceived uncertainty and self-perceived anxiety are significantly associated. Their self-perceived anxiety negatively predicts their self-perceived communication effectiveness, while their self-perceived uncertainty is not a predictor of communication effectiveness during the communication processes.

The first and second questions have positive outcomes, while the third and fourth have negative outcomes. When international students communicate with U.S. faculty members, their self-perceived English proficiency negatively predicts their self-perceived uncertainty and their self-perceived anxiety. However, their self-perceived knowledge of U.S. culture is not a predictor of either their self-perceived uncertainty or their self-perceived anxiety. The following sections will discuss findings obtained through the statistical analysis in this study and compare them with those in the existing scholarship.

5.1 UNCERTAINTY AND ANXIETY

This study found a significant and positive relationship between uncertainty and anxiety in strangers' communication with host nationals. This finding contradicts results obtained by Gao and Gudykunst (1990), who suggested that uncertainty and anxiety are independent. This study's finding is consistent with Hammer et al.'s (1998) study, which found that uncertainty and anxiety were interdependent dimensions. Hammer et al. (1998) also found the correlation coefficient between uncertainty and anxiety was 0.2, which was smaller than the one of this study, 0.44. This difference may be due to the fact that the items used for measuring uncertainty and anxiety in Hammer et al.'s (1998) study were different from those used in the present study. For example, items used for measuring

anxiety in Hammer et al.'s (1998, p. 317) study included "accepted, defensive, suspicious, self-conscious, happy, and careful," which did not appear in the instrumentation of this study.

The significant relationship between uncertainty and anxiety found in this study is also in line with Gudykunst and Nishida's (2001) study, which suggested that there was a positive relationship between anxiety and uncertainty across cultures. Gudykunst and Nishida (2001) found that the relationship between uncertainty and anxiety was moderate, with the correlation coefficient ranging from 0.38 to 0.41 when participants communicated with strangers of the same sex. Their correlation coefficient is close to the one in this study, 0.44. The participants in Gudykunst and Nishida's (2001) study, consisting of U.S. students and Japanese students, involved two different cultures, while this study's participants, consisting of international students, involved diversified cultures. The similar value in the uncertainty-anxiety correlation coefficient between the present study and Gudykunst and Nishida's (2001) study may suggest that uncertainty and anxiety are moderately correlated, despite the sample's different cultures.

In addition, the significant relationship between uncertainty and anxiety found in this study is consistent with Duronto et al.'s (2005) result that uncertainty and anxiety were associated when studying communication between strangers from two different cultures. In this study, international students, one party of the communication, represent diversified cultures from all over the world. U.S. faculty members, the other party of the communication, represent U.S. culture. Therefore, the communication process between international students and U.S. faculty members falls into the category of communication between strangers from two different cultures. The uncertainty-anxiety correlation coefficient found in this study, 0.44, is congruent with the one in Duronto et al.'s (2005) study, 0.45.

5.2 PREDICTING EFFECTS OF UNCERTAINTY AND ANXIETY ON COMMUNICATION

EFFECTIVENESS

An unexpected finding of this study is that when uncertainty, anxiety, English proficiency, and knowledge of U.S. culture are all considered as predictors, anxiety has a significant predicting effect on communication effectiveness, but uncertainty does not. This finding is inconsistent with one of the major assumptions of AUM theory. AUM theory (Gudykunst, 1988, 1993, 1995, 2005a) suggests that uncertainty management and anxiety management directly influence communication effectiveness in interpersonal and intergroup encounters, which indicates that uncertainty and anxiety should both be significant predictors of communication effectiveness.

This unexpected finding is also different from Gudykunst and Nishida's (2001) results. They found that both uncertainty and anxiety have a significant effect on perceived effectiveness of communication in all of the four different cases: U.S. students communicating with same-sex strangers, U.S. students communicating with same-sex close friends, Japanese students communicating with same-sex strangers, and Japanese students communicating with same-sex close friends. Although Gudykunst and Nishida (2001) found that uncertainty and anxiety are both significant predictors of communication effectiveness, their results indicated that anxiety has a larger effect on perceived effectiveness than uncertainty in three cases: U.S. students communicating with same-sex strangers, Japanese students communicating with same-sex strangers, and Japanese students communicating with same-sex close friends.

A plausible reason that anxiety is a significant predictor of communication effectiveness while uncertainty is not may be because of strangers' feelings of lacking control during the stranger-host national communication. Fiske and Morling (1996) argued that the amount of anxiety individuals experience in intergroup interactions is partly a function of the extent to which they feel in control. English is the second language of almost all international students in this study. U.S. faculty might be

considered as having higher status by international students. When international students used their second language to communicate with U.S. faculty, it is likely that international students felt that they lacked power and were unable to control the communication process. The less powerful they feel in such interaction, the more anxious they will be (Gudykunst, 2005a). Therefore, anxiety became a dominant predictor of their communication effectiveness when they communicated with U.S. faculty.

Another possible reason for this study's finding that anxiety is a significant predictor of communication effectiveness while uncertainty is not may be due to the role of individualism/collectivism, one of the four dimensions of culture identified by Hofstede (1980, 1983, 1997). Gudykunst (2005a) argues that cultural individualism-collectivism is one dimension of cultural variability that affects stranger-host national communication. He proposed an axiom addressing the impact of this dimension on communication effectiveness of strangers which suggests that an increase in cultural collectivism of strangers will produce a decrease in the focus on cognitive understanding to communicate effectively with host nationals, and produce an increase in the focus on maintaining good emotional relations with host nationals. As stated in Chapter 2 (Literature Review), uncertainty is "a cognitive phenomenon" (Gudykunst & Nishida, 2001, p. 57), and anxiety is uncertainty's "affective (emotional) equivalent" (Gudykunst & Nishida, 2001, p. 59). Therefore, it is likely that strangers of collectivistic cultures focus more on anxiety, an affective (emotional) component, than on uncertainty, a cognitive component, when they communicate with host nationals.

In the present study, one party of the communication process is international students, who are considered strangers in the U.S., and the other party is U.S. faculty members, who are considered host nationals. Most participants (70.6%, refer to table 3.1) of this study are citizens of Mexico. In Hofstede's measures for cultural dimensions, the U.S. scores 91 in individualism dimension while Mexico scores 30 on a scale of 1 to 120 (Hofstede, 2009). Therefore, Mexico is considered a much more collectivistic culture than the U.S. Based on the preceding discussion, it is possible that those international students from Mexico were more concerned about maintaining good emotional relations with U.S. faculty

members than cognitive understanding of the exchanged message when they communicated with U.S. faculty members. Therefore, it is reasonable that only their anxiety played a role in predicting perceived effectiveness during such communication process, which was reflected from the present study's finding: anxiety is a significant predictor of communication effectiveness, while uncertainty is not.

This study also found that uncertainty is significantly related to anxiety in addition to the finding that anxiety is a significant predictor of communication effectiveness while uncertainty is not. One possible explanation is that anxiety serves as a mediating variable between uncertainty and communication effectiveness. In other words, it is likely that the effects of uncertainty on communication effectiveness are mediated through anxiety.

There are arguments and evidences from previous studies that uncertainty is a causal factor of anxiety. For example, Moore, Moore, Madison-Colmore and Collins (2005) claimed that "the uncertainty of not knowing what is going to happen from day to day causes an incredible amount of anxiety and frustration for children" living in a substance abuse family (p. 3). Mazur and Hickam (1996) argued that simmering anxiety was caused by uncertainty and lack of control among men with prostate cancer. Twinn (2006) found that lack of information contributed to the fears of the group of women referred to colposcopy in a sample collected opportunistically from an urban center of a major nongovernmental service provider. These preceding studies suggest that there might be a cause-and-effect relationship between uncertainty and anxiety. Therefore, it is also reasonable to posit that international students' self-perceived uncertainty affects their self-perceived anxiety, and their self-perceived anxiety in turn affects their self-perceived communication effectiveness when they communicate with U.S. faculty.

5.3 THE RELATIONSHIP BETWEEN ENGLISH PROFICIENCY/KNOWLEDGE OF U.S.

CULTURE AND COMMUNICATION EFFECTIVENESS

As shown in Table 4.8, this study found that English proficiency and knowledge of U.S. culture are significantly correlated. There is a significant and large relationship between English proficiency and communication effectiveness, and there is a significant and moderate relationship between knowledge of U.S. culture and communication effectiveness. No scholarship found involving AUM theory has examined the relationship between English proficiency and communication effectiveness and the relationship between knowledge of U.S. culture and communication effectiveness. Therefore no existing data involving AUM theory can be compared to the results of this study.

However, the results from the present study are consistent with Redmond and Bunyi's (1993) study. Redmond and Bunyi (1993) did not examine uncertainty and anxiety, but identified communication effectiveness, host language competence, and knowledge of host culture as three components of intercultural communication competence. They observed that host language competence and knowledge of host culture are significantly correlated, there was a significant and large relationship between host language competence and communication effectiveness, and there was a significant and large relationship between knowledge of host culture and communication effectiveness. Being in line with Redmond and Bunyi's (1993) result, the present study offers additional evidence of the interrelationship between English proficiency and communication effectiveness, and the interrelationship between knowledge of U.S. culture and communication effectiveness in the AUM theoretic model.

Another unexpected finding of this study is that English proficiency and knowledge of U.S. culture also have significant predicting effects on communication effectiveness in addition to anxiety. This unexpected finding suggests that English proficiency and knowledge of U.S. culture might directly affect communication effectiveness instead of acting as indirect factors of communication effectiveness.

This finding does not support one of the axioms of AUM theory which assumes that uncertainty management and anxiety management are the only two “basic causes” (Gudykunst, 2005a, p. 291) that directly influence the effectiveness of communication. Unfortunately, no existing data are available to be compared with the results of the present study regarding the predicting effects of English proficiency and knowledge of U.S. culture on communication effectiveness. This might be an area that future research needs to explore.

Results from the present study indicate English proficiency is an important aspect of communication effectiveness. Redmond & Bunyi (1993) argued that strangers’ competence in the host language will likely assure minimum loss of information transfer and fewer misunderstandings in their interactions with host nationals. In the case of international students’ communication with U.S. faculty, international students who have higher English proficiency will be likely to grasp most of the exchanged information and assure correct understanding of the message during the communication process, and therefore make the communication more effective.

Results from the present study suggest that the contribution of knowledge of U.S. culture to communication effectiveness is as important as English proficiency. Gudykunst (1991) claimed that strangers’ misunderstandings in intercultural communication often stem from their not knowing the norms and rules guiding the communication of host nationals. The vast majority of the time strangers interpret host nationals’ messages using their own frames of references (Gudykunst, 2005a). Strangers who have more knowledge of host culture will be more likely to refer to host nationals’ frames of references to interpret the exchanged messages during the stranger-host national communication. In the case of international students’ communication with U.S. faculty, international students who possess more knowledge of U.S. culture may more intuitively explain the exchanged messages using U.S. faculty’s perspectives, thus those international students may have more effective communication.

5.4 THE RELATIONSHIP BETWEEN ENGLISH PROFICIENCY AND

UNCERTAINTY/ANXIETY

The correlation matrix (Table 4.8) of this study shows a significant and negative relationship between English proficiency and uncertainty and a significant and negative relationship between English proficiency and anxiety. The multiple regression analysis with English proficiency and knowledge of U.S. culture as two independent variables and uncertainty as a dependent variable shows that English proficiency is a significant predictor of uncertainty. The multiple regression analysis with English proficiency and knowledge of U.S. culture as two independent variables and anxiety as a dependent variable shows that English proficiency is a significant predictor of anxiety as well.

AUM theory assumes that an increase in the host language competence of strangers will produce a decrease in their uncertainty and a decrease in their anxiety during the process of stranger-host national communication (Gudykunst, 2005a). The present study, therefore, offers support to the AUM theory regarding the effects of English proficiency on uncertainty and anxiety. Conversely, Hammer et al. (1998) found no significant relationship between English proficiency and either uncertainty or anxiety. Except Hammer et al.'s (1998) study, no scholarship involving AUM theory measured English proficiency. Therefore, no additional studies are available to compare to the results of the current study regarding the relationship between English proficiency and uncertainty and the relationship between English proficiency and anxiety.

5.5 THE RELATIONSHIP BETWEEN KNOWLEDGE OF U.S. CULTURE AND

UNCERTAINTY/ANXIETY

The correlation matrix (Table 4.8) of this study shows a significant and negative relationship between knowledge of U.S. culture and uncertainty, and there is no significant relationship between knowledge of U.S. culture and anxiety. The multiple regression analysis with English proficiency and

knowledge of U.S. culture as two independent variables and uncertainty as a dependent variable shows that knowledge of U.S. culture is not a significant predictor of uncertainty. Thus, the significant relationship between knowledge of U.S. culture and uncertainty is actually caused by the correlation between knowledge of U.S. culture and English proficiency. The multiple regression analysis with English proficiency and knowledge of U.S. culture as two independent variables and anxiety as a dependent variable shows that knowledge of U.S. culture is not a significant predictor of anxiety either.

AUM theory assumes that an increase in the knowledge of host culture of strangers will produce a decrease in their uncertainty and a decrease in their anxiety during the process of stranger-host national communication (Gudykunst, 2005a). The present study, however, does not support AUM theory regarding the effects of knowledge of host culture on uncertainty and anxiety. In addition, the present study is not completely in line with Hammer et al.'s (1998) results, which found that knowledge of host culture was significantly related to uncertainty, but not to anxiety. With the exception of Hammer et al.'s (1998) study and Gao and Gudykunst's (1990) study, no scholarship involving AUM theory has measured knowledge of host culture. Gao and Gudykunst's (1990) measurement of knowledge of U.S. culture included an item asking respondents the extent to which they understood the language of the U.S. culture. This item was considered the measurement of English proficiency in the current study. Therefore, Gao and Gudykunst's (1990) result does not seem being comparable with the current study regarding the relationship between knowledge of U.S. culture and uncertainty, and the relationship between knowledge of U.S. culture and anxiety.

Chapter 6: Conclusion

6.1 SUMMARY OF KEY FINDINGS

This study used a theoretical model based on AUM theory to examine international students' communication effectiveness with U.S. faculty members. Five constructs of the model were examined including uncertainty, anxiety, communication effectiveness, English proficiency, and knowledge of U.S. culture. An instrumentation designed to gather demographic information and measure each construct was developed. Data were collected from 180 international students in a university in the southwest of the U.S. by paper surveys and email surveys. Descriptive statistics on each construct were performed and bivariate correlations between each of the five constructs were examined. A multiple regression analysis with communication effectiveness as a dependent variable and other constructs as independent variables were performed. In addition, two multiple regression analyses with uncertainty/anxiety as a dependent variable and English proficiency and knowledge of U.S. culture as two independent variables were performed.

Results of descriptive statistics found that international students in this study had low self-perceived uncertainty, low self-perceived anxiety, and high self-perceived communication effectiveness when they communicated with U.S. faculty members. They assessed their English proficiency level as high. Their self-perceived knowledge of U.S. culture scored 3.53 in a five-point Likert scale, a mid-position between “Not So Few, and Not So Many” and “Many of them.”

Bivariate correlation analyses and multiple regression analyses revealed the following results: when international students communicate with U.S. faculty members, their self-perceived uncertainty and self-perceived anxiety are significantly associated. Their self-perceived anxiety negatively predicts their self-perceived communication effectiveness, while their self-perceived uncertainty is not a predictor of communication effectiveness during such communication processes. Their self-perceived English proficiency negatively predicts their self-perceived uncertainty and their self-perceived anxiety.

However, their self-perceived knowledge of U.S. culture is not a predictor of either their self-perceived uncertainty or their self-perceived anxiety.

Furthermore, this study found that English proficiency and knowledge of U.S. culture are significantly related to one another. In addition to anxiety, English proficiency and knowledge of U.S. culture also have a significant predicting effect on communication effectiveness. Anxiety has the largest predicting effect on communication effectiveness, English proficiency ranks second in the predicting effect, knowledge of U.S. culture ranks third in the predicting effect. Overall, this study offers partial support to the major assumptions of AUM theory.

6.2 THEORETICAL IMPLICATIONS

The present study adds to our understanding of international students' communication process in a host culture different from their own. Much scholarship has explored international students' intercultural adaptation and handling of stress in the host culture. However, little research has explored their communicative experiences (Urban & Orbe, 2007). The ability to communicate effectively ensures international students' satisfaction with their sojourning experience in the U.S. The importance of this ability cannot be overemphasized, as communication effectiveness has been found to be significantly related to intercultural adaptation (Redmond & Bunyi, 1993). The present study may encourage intercultural communication scholars to further explore the communicative process of international students, a specific group of sojourners.

Another significance of this study is that it examined communication phenomena with more specific host nationals, U.S. faculty members. Strangers' self-perceived uncertainty, anxiety, and communication effectiveness might fluctuate a great deal when interacting with different host nationals. Most previous studies (e.g., Gao & Gudykunst, 1990; Hammer et al., 1998) asked participants about their general experience with Americans. The present study identified U.S. faculty members as the other party of the communication process. Therefore, participants might be clearer about a specific communication experience they were responding to. On the other hand, it is valuable to identify U.S.

faculty members rather than general Americans as the other party of the communication, for student-faculty interaction has been recognized as one of the five benchmarks of effective educational practice (National Survey of Student Engagement [NSSE], 2007). International students' major goals in the U.S. are academic studies which are quite different from other groups of sojourners. Being able to effectively communicate with U.S. faculty members is likely to assure international students' academic success in U.S. colleges.

The present study also enriches the scholarship of AUM theory by examining communication effectiveness as the outcome of the model. The intercultural experience of sojourners, such as international students, has sparked the interest of intercultural communication scholars for many years. However, the power of the AUM theoretic model for communication research in cultures other than the U.S. has largely remained unexplored (Love & Powers, 2002). Most literature involving AUM theory centered on the intercultural adaption outcome. As stated in Chapter 2 (Literature Review), only Gudykunst and Nishida's (2001) study was found applying AUM theory to investigate effectiveness of communication. Findings of the present study, being not completely consistent with those of Gudykunst and Nishida's (2001) study, request more research on AUM theory as a model in explaining intercultural communication effectiveness.

In addition, the present study is probably among the few quantitative data that have included English proficiency and knowledge of U.S. culture in the AUM model. As pointed out in Chapter 5 (Discussion), findings regarding the relationships to uncertainty and anxiety of knowledge of U.S. culture are not completely in line with Hammer et al.'s (1998) study, and findings regarding those of English proficiency are contrary to Hammer et al.'s (1998) results. The significant correlations of both English proficiency and knowledge of U.S. culture to communication effectiveness also raised a question whether the effects of these two superficial causes should be treated as being directly applied to communication effectiveness rather than being mediated through uncertainty and anxiety. The inclusion

of English proficiency and knowledge of U.S. culture in the AUM model in this study may encourage future research to explore the effects of these two constructs in the AUM model.

6.3 PRACTICAL IMPLICATIONS

This study has practical implications for international students, U.S. faculty members, and university administrators as well. International students who desire to improve their communication effectiveness with U.S. faculty members may use this study to guide their endeavors toward this goal. As this study revealed, anxiety, English proficiency, and knowledge of U.S. culture are all significant predictors of communication effectiveness. International students should be aware that their anxiety level may affect their abilities to communicate effectively with U.S. faculty members. They may strive to enhance their English proficiency and meanwhile widen their knowledge of U.S. culture. With reduced anxiety, enhanced English proficiency, and widened knowledge of U.S. culture, their communication with U.S. faculty members might be more effective.

U.S. faculty members, who often serve as international students' instructors, advisors, and mentors, may also gain insights from this study about communication with international students. If U.S. faculty members realize that international students may experience anxiety during communication, they may make more allowances to international students and devise communication strategies to reduce that anxiety. In addition, if U.S. faculty members are aware that lack of English proficiency and knowledge of U.S. culture might affect international students' communication effectiveness, they might be more attentive and responsive to the special needs of international students during the communication process, and devise communication strategies accordingly. With more understanding and empathy from U.S. faculty members, such communication processes might be more effective and productive for international students and U.S. faculty members alike.

Furthermore, university administrators may also benefit from this study. International students should not bear sole responsibility for their academic success. There should also be a commitment from host universities to help international students realize this goal. Universities might consider offering

campus services that accommodate international students' needs. Such services might include psychological counseling with bilingual counselors who are knowledgeable about dealing with anxieties and stresses resulting from intercultural adjustment, English learning programs designed to help ESL students improve English proficiency, and workshops intended to increase knowledge of U.S. culture. Administrators may also encourage international students to participate in different campus organizations or establish their own student organizations as a way to be connected to the university community. With support from university administrators, chances for international students to succeed in their academic pursuits may significantly increase.

6.4 LIMITATIONS OF THE STUDY

While the present study provides valuable contributions to understand international students' communication effectiveness with U.S. faculty members, several limitations of this study should be noted. The first limitation is that some superficial causes were not explored in this study. Gudykunst's (2005a) schematic representation of AUM theory identifies self-concept, motivation to interact, reaction to host nationals, social categorization of host nationals, situational processes, connection with host nationals, and ethical interactions as superficial causes that indirectly affect communication effectiveness of strangers. He also noted that not all of the superficial causes were listed in the model. While the present study's predictors in the model, namely uncertainty, anxiety, English proficiency, and knowledge of U.S. culture explained 46.8% of variances of communication effectiveness, 53.2% of variances still cannot be explained by these four predictors.

A second limitation of this study is that it addressed only the questions regarding the predicting effect of each predicting variable on communication effectiveness, the predicted variable. While findings reported that each predicting variable is a significant predictor of communication effectiveness except uncertainty, a cause-and-effect relation between each predicting variable and communication effectiveness cannot be established. Similarly, although results indicated that English proficiency is a

significant predictor of uncertainty/ anxiety, whether English proficiency affects uncertainty/anxiety is unclear.

A third limitation of this study is that the survey was based on self-perception. Individuals who have poor abilities but are overconfident might report higher scores in their self-perceived abilities, while those who have good abilities but lack confidence might report lower scores. Also, some respondents might provide socially desirable answers to present good images to others. These factors might all affect the accuracy of the measurements in this study.

A last limitation of this study is that the sample's countries of citizenship are not very diversified. Because the location of the sampling university is on the U.S.-Mexico border, 81.1% of international students in the university are from Mexico. Although the email survey has reached out to every international student in the sampling university, most respondents (70.6%) in the sample were citizens of Mexico (refer to table 3.1). Therefore, a comparison of each construct as to different countries of citizenship is not feasible because the sample sizes from countries other than Mexico were too small.

6.5 FUTURE RESEARCH DIRECTIONS

There are a number of research areas that should be pursued in the future. First, future research should further assess whether uncertainty and anxiety are the only two central processes that directly affect communication effectiveness. It is possible that some other “superficial” causes are also directly related to communication effectiveness rather than being mediated through uncertainty and anxiety. If such direct relationships are established, the AUM model needs to be reconstructed.

Second, additional work should focus on self-concept, motivation to interact, reaction to host nationals, social categorization of host nationals, situational processes, connection with host nationals and ethical interactions, and testing their associations with one another and their effects on uncertainty, anxiety, and communication effectiveness. As stated in the first limitation of this study, 53.2% of variances of communication effectiveness come from factors other than English proficiency, knowledge

of U.S. culture, uncertainty and anxiety. One fruitful research area might be developing appropriate measurements of each possible factor. Again, research is still needed to develop a more complete model of what elements contribute to strangers' effectiveness of communication with host nationals.

Third, research needs to examine whether demographic factors, such as country of citizenship, gender, age, length of study in the U.S., etc., are related to each construct in the AUM model. As stated in the last limitation, 70.6% of respondents in the sample were citizens of Mexico. Future research should consider sampling in a U.S. university with a more diversified profile of international students. Strangers with different demographic factors might display different levels of host language competence, knowledge of host culture, uncertainty, anxiety, and communication effectiveness. A comparison between each group of strangers based on different demographic factors will provide a better understanding of the nature of intercultural communication between strangers and host nationals from the perspectives of strangers.

Finally, future research needs to examine the impact of cultural dimensions on intercultural stranger-host national communication. As pointed out in Chapter 5 (Discussion), the finding that anxiety is a significant predictor of communication effectiveness while uncertainty is not may be due to the role of individualism/collectivism, one of the four dimensions of culture (Hofstede, 1980, 1983, 1997; Hofstede & Bond, 1984). It should be noted that cultural individualism-collectivism is not the only dimension of cultural variability that affects stranger-host national communication (Gudykunst, 2005a). The other three dimensions, namely power distance, uncertainty avoidance, and masculinity/femininity (Hofstede, 1980, 1983, 1997; Hofstede & Bond, 1984) may also influence strangers' effectiveness of communication with host nationals. Therefore, it is important to address all of these cultural dimensions as cross-cultural variability in the AUM model in future research.

In conclusion, this study offers partial support for AUM theory in the context of communication between international students and U.S. faculty members. Future research is needed to more comprehensively test the AUM theoretical model of communication effectiveness regarding stranger-

host national interaction. Thus, there may be more understanding of the communicative experience of international students studying at U.S. universities, and more applicable strategies may be devised to increase their communication effectiveness.

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Appendix A

Dear International Student,

[Please discard message if you have taken part in this survey before, either in email format or in paper format]

You have been selected as a participant in this survey because of your status as an international student enrolled at UTEP in Fall 2008.

As a fellow international student at UTEP, I am asking that you support my research by participating in this survey attached to this email. This questionnaire is essential to my completing my master's thesis about international students' spoken communication experiences with U.S. faculty members. This study has been approved by the Institutional Review Board at UTEP.

If you agree to participate, type your name after "Participant Name" and "Participant Signature" on page 3 of the questionnaire and indicate the Date and Time. Then finish the survey questions from page 4 to page 6. After that, please email the document back to me.

As indicated in the Informed Consent Form, your participation in this study is strictly confidential. Results of the survey are computed for numerical aggregates only, and your identity will be kept confidential.

I look forward to hearing from you. Thank you very much.

Sincerely

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Appendix B

University of Texas at El Paso (UTEP) Institutional Review Board Informed Consent Form for Research Involving Human Subjects

Protocol Title: International Students' Communication Effectiveness with U.S. Faculty Members:
A Further Exploration of Anxiety/Uncertainty Management (AUM) Theory

Principal Investigator: Yixin Chen

UTEP Department of Communication

Screening question: Are you an international student currently enrolled at UTEP and over age 18? (An international student refers to a student who is not a U.S. citizen).

_____ Yes (Please continue)

_____ No (**PLEASE STOP.** Thank you for your time. This survey is only for international students currently enrolled at UTEP and over age 18)

Note: If you have taken part in a survey with the same Protocol Title before, either in email format or in paper format, **PLEASE STOP.** Thank you for your time. The questions in the email survey are same as those in the paper survey, so you only need to answer them once.

Introduction

You are being asked to take part voluntarily in the research project described below. Please take your time making a decision and feel free to discuss it with your friends and family. Before agreeing to take part in this research study, it is important that you read the consent form that describes the study. Please ask the study researcher to explain any words or information that you do not clearly understand.

Why is this study being done?

You have been asked to take part in a research study of international students' spoken communication experiences with faculty members from the U.S. Approximately, 300 of study subjects will be enrolling in this study at UTEP.

You are being asked to be in the study because you are an international student currently enrolled at UTEP and over age 18. If you decide to enroll in this study, your involvement will last about 20 minutes.

What is involved in the study?

If you agree to take part in this study, the research team will describe all procedures, and any review of records, questionnaires, etc. that will take place.

What are the risks and discomforts of the study?

There are no known risks associated with this research.

What will happen if I am injured in this study?

The University of Texas at El Paso and its affiliates do not offer to pay for or cover the cost of medical treatment for research related illness or injury. No funds have been set aside to pay or reimburse you in the event of such injury or illness. You will not give up any of your legal rights by signing this consent form. You should report any such injury to Yixin Chen at 915-351-2202 or ychen3@miners.utep.edu and to Lola Norton of the Institutional Review Board (IRB) at UTEP at (915-747-8841) or lola@utep.edu.

Are there benefits to taking part in this study?

There will be no direct benefits to you for taking part in this study. This research may help us to understand international students' spoken communication experiences with U.S. faculty members.

What other options are there?

You have the option not to take part in this study. There will be no penalties involved if you choose not to take part in this study.

Who is paying for this study? No one is paying for this study.

What are my costs?

There are no direct costs. You will be responsible for travel to and from the research site and any other incidental expenses.

Will I be paid to participate in this study?

You will not be paid for taking part in this research study.

What if I want to withdraw, or am asked to withdraw from this study?

Taking part in this study is voluntary. You have the right to choose not to take part in this study. If you do not take part in the study, there will be no penalty.

If you choose to take part, you have the right to stop at any time. However, we encourage you to talk to a member of the research group so that they know why you are leaving the study. If there are any new findings during the study that may affect whether you want to continue to take part, you will be told about them. The researcher may decide to stop your participation without your permission, if he or she thinks that being in the study may cause you harm.

Who do I call if I have questions or problems?

You may ask any questions you have now. If you have questions later, you may contact Yixin Chen of the

Department of Communication at UTEP by phone at 915-351-2202, or by email at ychen3@miners.utep.edu.

If you have questions or concerns about your participation as a research subject, please contact Lola Norton of the Institutional Review Board (IRB) at UTEP at (915-747-8841) or by email at lola@utep.edu.

What about confidentiality?

Your participation in this study is strictly confidential. Results of the survey are computed for numerical aggregates only, and your identity will be kept confidential. All records will be maintained only in the Principal Investigator's hand in security.

Authorization Statement

I have read each page of this paper about the study (or it was read to me). I know that being in this study is voluntary and I choose to be in this study. I know I can stop being in this study without penalty. I will get a copy of this consent form now and can get information on results of the study later if I wish.

Participant Name: _____ Date: _____

Participant Signature: _____ Time: _____

Consent form explained/witnessed by: Yixin Chen

Signature

Printed name: Yixin Chen

Date: 01/21/2009 Time: 2:00 PM

The purpose of this survey is to study international students' **spoken** communication experiences with **faculty members from the U.S.** and what factors influence such spoken communication experiences. Your answers will be kept confidential and used for research purposes only.

Please answer the following demographic questions (please specify or mark an X to indicate your choice):

Citizenship: _____

First language: _____

Gender: _____ Male _____ Female

Age: _____

How long have you studied in the U.S.? _____ Years _____ Months

TOEFL score: _____

TOEFL Test Type: _____ Paper-based _____ computer-based _____ internet-based

IELTS score: _____

I was exempt from taking TOEFL/IELTS before I enrolled in a U.S. university, because:

_____.

Major: _____

Class level: _____ Undergraduate _____ Master student _____ Ph.D. student

Marital status: _____ Single _____ Married

Please continue on the next page.

Before continuing with the survey, please think about your **last spoken** communication experience with any professor who is **originally from the U.S.** that happened before participating in this survey. This spoken communication experience could have happened anywhere and could be about any topic. Please read each group of statements carefully and place an X in the box that would indicate your response.

The last time I talked with this professor, I was confident in my ability to predict his/her _____.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
behavior					
attitude					
feelings					
values					
willingness to communicate					
feeling about himself/herself					
what he/she meant					

The last time I talked with this professor, I was confident that _____.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
he/she would make allowances for me					
he/she could understand my feelings					
he/she would like me					

The last time I talked with this professor, I felt _____.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
calm					
frustrated					
confused					
worried					
anxious					
relaxed					
irritated					
impatient					
comfortable					
awkward					

Please continue on the next page.

The last time I talked with this professor, _____.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I communicated effectively with him/her.					
my communication with him/her was NOT successful.					
I felt competent when I communicated with him/her.					
I communicated appropriately with him/her.					
my communication with him/her was a failure.					

How good DO YOU THINK your English _____ is?	Very Poor	Poor	Not So Good, and Not So Poor	Good	Very Good
listening ability					
speaking ability					

How many U.S. _____ DO YOU THINK you understand?	None of Them	Few of Them	Not So Few, and Not So Many	Many of Them	All of Them
values					
customs					
norms					

Thank you very much for participating in this survey.

Curriculum Vita

Yixin Chen was born in Nanping, China, the third of three children of Dengquan Chen and Qionghua Cai. Although Yixin had a bachelor's degree in civil engineering, she realized that it was not meant to be her lifelong career. Instead, she had been longing for a career in communication and dreaming of coming to the U.S. to pursue a master's degree in communication.

Yixin started to explore the professional field of communication by working as an international communication specialist in a real estate company in Shanghai, China. During her application for graduate programs in communication at U.S. universities, she encountered family members' opposition, financial difficulties, and obstacles from the U.S. visa application. Fortunately, with the understanding and support from Dr. Samuel C. Riccillo and Dr. Patricia D. Witherspoon, in Fall 2006 Yixin finally entered the Master's program in Communication at the University of Texas at El Paso (UTEP). While pursuing her MA degree, she has worked as a teaching assistant, a research assistant, and a reporter for *The Prospector*, a student newspaper at UTEP. Yixin is more than happy that she is on the right track for a career in communication. She will continue her pursuit in teaching and research in communication.

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This thesis was typed by Yixin Chen.