International Students' Acculturation and Attitudes Toward Americans as a Function of

Communication and Relational Solidarity with their Most Frequent American Contact

By

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Abstract

The current study was guided by the theoretical frameworks of Intergroup Contact Theory (Pettigrew, 1998), Acculturation (Berry, 1997), and the Common Ingroup Identity Model (Gaertner & Dovidio, 2000). Using the PROCESS models on mediation analysis (Hayes, 2013), this cross-sectional survey tested three research hypotheses that predicted significant indirect effects of international students' ($N = 233$) contact quantity and quality with U.S. American students on their affective, behavioral, and cognitive attitudes towards U.S. Americans through the sequential mediators of relational solidarity and identification with U.S. culture. Findings supported all the hypotheses. In addition, the indirect effects of contact on attitudes were significant through identification with U.S. culture as a single mediator. Furthermore, the direct effect of contact quality on behavioral attitudes was significant. Implications for scholars and practitioners, and suggestions for future research, are discussed in light of prior literature on intergroup contact, acculturation, and common ingroup identity.

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Table of Contents

List of Tables and Figures

Chapter One:

Introduction

As of 2017, the most recently available data, over one million international students were studying in the United States (U.S.), demonstrating an increase of 35,000 students from 2016 data, and continuing an upward trend that started in 2006 ("Open Doors Data," 2017). At a medium-sized, midwestern university, for example, more than 2,000 international students have been enrolled each semester since the Fall 2010 semester, coming from all over the world (www.iss.ku.edu). During the Spring 2018 semester, for instance, there were a total of 2,110 international students from 111 different countries enrolled at this midwestern university, representing 9% of the total student population that semester. In the last three years, however, this trend has leveled off slightly because fewer new international students are choosing the U.S. for their studies. Citing preliminary figures from the Institute of International Education (see www.iie.org), the *New York Times* reported in January 2018 that during the Fall 2017 term the number of new international students declined an average of seven percent nationwide (Saul, 2018). Although recent U.S. policy from the Trump administration has sought to decrease the influx of foreign residents coming into the country, U.S. universities are continuing to recruit, welcome, and reassure international students that they can continue their studies uninterrupted (Fischer, 2017). Further, historically international student numbers have fluctuated with U.S. immigration policy, but decreases have nonetheless always been followed by increases, and there has been a continued gradual increase since the late 19th Century (Bevis & Lucas, 2007). The international student presence in the country benefits U.S. higher education institutions and their constituents economically (e.g., Gold, 2016) and socioculturally (e.g., Leask, 2009), just one of the reasons this group is important for researchers to study.

U.S. institutions of higher education and their respective states benefit economically from international students. International students add to the workforce and contribute significantly to the economy (Gold, 2016; "Open Doors Data," 2017; Smith & Khawaja, 2011). Another significant way U.S. institutions of higher education benefit from international students financially is that the students pay more expensive out-of-state tuition rates (Varn, 2017). Importantly for communication and other social science scholars, and especially for the context of the current study, international students do not only provide economic benefits, but also sociocultural ones.

Alluding to the many sociocultural benefits of having international students on campus, Madeleine Green of the Association of International Educators (NAFSA) has implied that universities' desires to create "global citizens" influence their efforts to recruit international students (2013, p. 1). Similarly, Leask (2009) described how helping all students, faculty, and staff to be more interculturally competent and creating "global" institutions is accomplished through the recruitment of international students. This is because the presence of students from all over the world on university campuses has been shown to help with internationalizing the educational environment (Peterson et al., 1999). Intercultural interactions are beneficial socially for both domestic and international students (Denson & Zhang, 2010; Liu et al., 2017; Wakefield, 2014; Wells, Duran, & White, 2008). For example, Wakefield (2014) described that increasingly, U.S. universities are seeking to develop intercultural competence skills among American students because they need them to work in the modern world, and interactions with international students help American students to develop these skills.

Furthermore, Denson and Zhang (2010) found that all students at the Australian university they studied, including domestic ones, experienced a "positive effect on developing

teamwork, problem-solving skills, and appreciation and respect for diversity" as a result of exposure to diversity on campus (p. 540). It is clear international students at universities provide benefits and that their presence should continue to be encouraged. Research has shown, however, that these students face unique obstacles when moving to the U.S. and attempting to navigate universities. As a result of these challenges, there have been many calls for more scholarly inquiry into international students' adaptation experiences.

As a case in point, Coles and Swami (2012) have asserted that "further research into the experiences of international students is necessary both to ensure the welfare of the student body and to ensure that particular institutions and nations remain attractive destinations for such students" (p. 88). Hudzik and Briggs (2012) added that international students should be "consciously and strategically integrated" into U.S. universities and that attention must be paid to their needs while they are studying in the U.S. (p. 3). Canchu Lin (2006) also stated that "practitioners such as university counselors and community workers should first be able to know specific adjustment experiences of different groups of international students and then apply different yet effective strategies to help these different groups solve their problems" (p. 118). Finally, Zhou et al. (2008) argued that "the quality of the psychological, sociocultural and educational experiences of this large group of people is important, not least in promoting global intercultural understanding" (p. 63). The current study addressed these calls for further research into international student experiences on U.S. university campuses.

The purpose of this study was to learn what factors are most influential in determining international students' intergroup adaptation towards U.S. culture. This study addresses academic, student, and practitioner audiences; the former by answering the calls for more research on international student intergroup adaptation experiences, and the latter two by

suggesting actionable guidelines to help international and U.S. American university students to communicate more effectively with each other, and to help higher education practitioners in their role of assisting international students to adapt to U.S. culture.

Specifically, this study sought to analyze international students' contact quantity and quality with U.S. American students, and the effect of this contact on: (1) international students' friendship development as indicated by relational solidarity, (2) their identification with U.S. culture, and (3) their affective (i.e., prejudice), behavioral (i.e., discrimination), and cognitive (i.e., stereotypes) intergroup attitudes towards U.S. Americans. The variables above are important because they all relate to international students' communicative experiences in the U.S. and how these experiences affect intergroup attitudes, which speaks to how well students can deal with the challenges of entering their new cultures and hopefully, adapt positively to their new cultural surroundings. The challenges international students face when moving to a new culture are the result of their attempts to acculturate (i.e., learn more about their new cultures) while facing culture shock, which leads to many stressors (e.g., Smith & Khawaja, 2011). This transition is particularly difficult for university students because they come to the U.S. with the intention of staying temporarily, because as Sawir et al. (2008) argued, they "must establish themselves as foreigners staying for a time, *as neither inside nor outside* [emphasis added] their host cultures" (p. 149). This study focuses on the specific challenge of communication with U.S. American university students (i.e., intergroup contact) and the effects on friendship development, group identification, and intergroup attitudes, all of which are indicative of intergroup adaptation. Successful intergroup adaptation is the preferred outcome for students coming to the U.S. to study.

One of the primary challenges affecting international students' intercultural adaptation to U.S. culture, and associated intergroup attitudes, is their contact with domestic U.S. students (Esses & Dovidio, 2002). Scholars have long focused on contact experiences of people who travel to other cultures, starting with Allport's (1954) Contact Hypothesis and more recently with Pettigrew's (1998) Intergroup Contact Theory (ICT). Shim, Zhang, and Harwood (2012) state that ICT "emphasizes direct contact as an effective way to reduce prejudice and enhance positive attitudes toward other social groups" (p. 3). Brown and Hewstone (2005) adapted this original contact model and suggested it can also work for intergroup/intercultural communication contexts, they argued if contact occurs between in and outgroup members who are perceived as representative of their respective larger ingroups, then positive outcomes as a result of contact generalize to the group as a whole. International students at U.S. universities may engage in such intergroup contact with U.S. domestic students, and this study positions this intergroup contact as a predictor variable of intergroup attitudes. In line with prior contact research in general (Imamura et al., 2011; Tropp, 2003; Tropp & Pettigrew, 2005), the current study has used the ABC model to measure intergroup attitude outcomes (i.e., *affective* attitudes indicating prejudice, *behavioral* attitudes indicating discrimination, and *cognitive* attitudes indicating stereotypes). Specifically, this dissertation project is theoretically meaningful as it applies ICT to a cross-national context by focusing on the non-majority perspective. This study aims to contribute theoretically to the literature on ICT by examining explanatory factors such as relational solidarity and cultural identification that influence the proposed associations between contact and intergroup attitudes.

Several variables have been used in previous work to explain the relationship between intergroup contact and intergroup attitudes. The current study proposes two explanatory

variables: International students' (1) perceived relational solidarity with U.S. students, which indicates friendship development (Imamura et al., 2011) and (2) international students' identification with U.S. culture (Gaertner & Dovidio, 2000). Friendship development, as indicated by perceived relational solidarity, poses a challenge and opportunity for both the international students and their domestic U.S. counterparts.

Relational solidarity is the degree of connection between two individuals, primarily dependent on relational satisfaction factors such as closeness, liking, commonality, and trust (Harwood, 2000; Hendrick, 1988; Imamura et al., 2011, 2012; Wheeless, 1978). Relational solidarity can positively impact communicative interactions and outcomes between international and U.S. American students (Bochner, 1977; Hendrickson, Rosen, & Aune, 2011; Luo & Jamieson-Drake, 2013). For example, Luo and Jamieson-Drake (2013) found that U.S. students who interacted more with international students had higher skill levels in relating well to people of other races, nations, or religions. However, due to the challenges related to intercultural adaptation, it can be difficult for friendships to develop between international and U.S. students, and this is why relational solidarity serves as an important explanatory variable in the relationship between intergroup contact and intergroup attitudes. The second important explanatory variable for the effect of intergroup communication on intergroup attitudes is identification with the host culture.

Gartner and Dovidio (2000) have introduced the Common Ingroup Identity Model (CIIM), which aims to recategorize ingroups and outgroups to increase cooperation between them. Identifying people who are different as part of one's group can improve intergroup outcomes (Dovidio, Gaertner, & Saguy, 2007; Imamura et al., 2016; Kim, 2012). Imamura et al. (2016) found that "cultural identification is a product of successful cultural adaptation that

encompasses various communicative engagements" (p. 536). Consequently, in the current study, international students' identification with U.S. American culture is positioned as another explanatory variable.

In summary, the conceptual model developed for the present study has international students' contact quantity and quality as the predictor variables and their affective, behavioral, and cognitive intergroup attitudes towards U.S. Americans as the proposed outcome variables. International students' perceived relational solidarity with U.S. students, and their identification with U.S. culture, are proposed as two explanatory variables in the model.

The next chapter is the literature review of the current study, where the development of the proposed conceptual model is detailed within the theoretical constructs of the proposed variables. Following the literature review are Chapters Three and Four, which specify the methodology used for this study and present the results, respectively. Finally, Chapter Five starts a scholarly discussion of findings, with a focus on theoretical and practical implications, limitations of the current study, and directions for future research.

Chapter Two:

Literature Review

This literature review provides background on international students in the U.S., including history, present-day demographics, economic and sociocultural impacts, and finally, a discussion on the challenges international students face when trying to adapt to U.S. culture (i.e., culture shock and associated stressors). The background information section about international students is used to establish rationale for the importance of studying this specific population with the proposed variables. Following the background information about international students is a review of intergroup adaptation literature, the primary proposed overarching theoretical construct of the current study. The review of intergroup adaptation is provided in the context of the proposed predictor and outcome variables for this study. The third part of this chapter focuses on the study's explanatory variables for the proposed conceptual model. The fourth part of the chapter discusses proposed covariates for the study, and the chapter concludes with a summary of the rationale for the model, a list of hypotheses, and a figure of the conceptual model.

International Students in the United States

History of international students in the United States. International students have arguably existed since students flocked to ancient Greece to study with renowned scholars, but their history in the U.S. is relatively recent due to the youth of the country. The first-ever international student to enroll in a U.S. university may have been Francisco de Miranda from Venezuela, a famous revolutionary who graduated from Yale in 1784 (Bevis & Lucas, 2007). Another international student pioneer was Yung Wing of China, the first Chinese international student to enroll in a U.S. institution, a part of the Yale class of 1854, and later in life a leader in bringing groups of Chinese students to the northeastern U.S. during the 19th century (Bevis &

Lucas, 2007). Today, Chinese international students are the most prevalent in the United States ("Open Doors Data," 2017). Throughout U.S. history, international student numbers have reflected immigration policies and attitudes towards internationalization, sometimes fluctuating downward.

For example, rhetoric and policies from the U.S. federal government in the years after the terrorist attacks on September 11, 2001, led to declines in international student enrollment. In April 2002, the White House announced President Bush was considering banning international students from starting studies in certain academic fields (Bevis & Lucas, 2007). Bevis and Lucas (2007) added that new visa restrictions and identity checks in the years after the September 11th attacks were stringent obstacles to international students. However, this decline in enrollment did not last; Bevis and Lucas (2007) wrote "contrary to earlier dire predictions, no dramatic or precipitous drop in foreign student applications or admissions" had happened by the 2005-2006 academic year (pp. 219-220). Earlier in U.S. history, there were restrictive governmental policies as well, such as the Chinese Exclusion Act of the late 19th Century and the restrictive Emergency Quota Act of 1921. The former prohibited migration from China, while the latter limited migration from all countries to three percent of the number of people from that country who were living in the U.S. in 1910 (Bevis & Lucas, 2007).

Despite these prohibitions and quotas, international student enrollment has continued to gradually increase. It is in this historical context that scholarly work today, including the current study, is taking place. Scholars know that, in spite of current decreases in new international students, their numbers will likely continue to gradually increase over the next several decades, along with the need to study them. What follows is a description of the latest available international student demographics for the United States.

International student demographics. As of 2017, there were over one million international students studying in the U.S, continuing an increasing trend that started over a decade ago ("Open Doors Data," 2017). In the last decade, reported international student enrollment at U.S. colleges and universities has increased more than 80 percent ("Open Doors Data," 2017). According to the same data, the top countries of origin of these international students in the U.S. are China and India. Chinese international students are the most prevalent, making up almost twice as many students to the U.S. as the second highest country, which is India; together China and India make up 50 percent of the total international student population in the U.S. ("Open Doors Data," 2017). South Korea, Saudi Arabia, and Canada make up the third, fourth, and fifth countries on the list of origin by student enrollment, respectively, representing an additional 13 percent of international students in the U.S. on top of students from China and India ("Open Doors Data," 2017). The top field of study for international students in the U.S. is engineering, with about 21 percent of international students during the 2016-2017 academic year studying in it, followed by business, with about 18 percent, and math/computer science, with about 15 percent ("Open Doors Data," 2017). Lastly, about 53% of the international students in the U.S. are undergraduates, with the rest (i.e., 47%) being graduate students.

Few previous studies have examined international students in the U.S. who are from countries *other than* the top five mentioned above. One notable exception is Cai and Fink's (2002) study of conflict styles, which consisted of student participants in the U.S. who came from 31 different countries. In line with Cai and Fink's (2002) study, the current study treated international students as one group, regardless of their home country, and measured the major variables at the individual level. The focus of this study is on individual-level communicative

and relational processes explicating cultural identification and intergroup attitudes. Hence, the international students' respective countries of origin are not featured as much as in other studies that examined larger and cultural-level factors (e.g., Rientes & Templelaar, 2013). That said, relevant variables that might be influenced by participant country of origin were still controlled for, these variables are described in more detail later in this chapter. Next, further exemplars are provided about the advantages of having international students study in the U.S. as evidence for why this growing demographic on U.S. university campuses merits further study (Denson & Zhang, 2010; Gold, 2016; Liu et al., 2017; Smith & Khawaja, 2011; Wells, Duran, & White, 2008).

Economic and sociocultural benefits of international students. In a review of research about international students, Smith and Khawaja (2011) stated that international students "contribute to the intellectual capital of their host country and to the work force" (p. 700). Citing the U.S. Department of Commerce (see www.commerce.gov), Open Doors Data (2017) indicated that "international students contributed more than $39 billion to the U.S. economy in 2016—a large increase over the previous year's total of $35 billion". Furthermore, up to 96 percent of international students earning a Ph.D. stay in the U.S. to work for at least five additional years after their degree acquisition (Gold, 2016). Of course, U.S. educational institutions also benefit directly because international students pay higher out-of-state tuition rates (Varn, 2017). These significant economic benefits explain part of the reason why U.S. universities continue to recruit international students, despite the recent policy changes and rhetoric by the U.S. government (Fischer, 2017). In addition, these economic benefits point to one of the reasons that this population is an important one to study. Even more relevant to the

field of communication and related scholars, is the fact that international students provide many sociocultural benefits as well.

These sociocultural benefits are also particularly important for the context of the model offered in this study because the primary theoretical underpinning used is intergroup interactions (i.e., contact) and their effect on intergroup attitudes. Intergroup interactions are beneficial socially for both domestic students and their international counterparts. For instance, Liu et al. (2017) have shown that "communicating with individuals from other cultures…contributes to the improvement of intercultural relations and intergroup attitudes" (p. 2). When exposed to diversity, domestic students are more open-minded, better at working with others and solving problems, and have a greater appreciation of, and respect for, diversity in workplaces (Denson & Zhang, 2010). Furthermore, Luo and Jamieson-Drake (2013) found that "U.S. students who interacted extensively with international students reported higher levels of engagement in college activities, such as coursework outside the major, contact with faculty, ethnic/cultural clubs or organizations, and visiting speakers" (p. 99). It is clear international students at U.S. universities provide many benefits and that their presence should continue to be encouraged. However, these students face many difficulties as a result of their decision to study abroad in the United States. These obstacles can be organized under the overarching "culture shock" framework, and several obstacles are elaborated upon in the next section (Chiu, 1995; Ryan & Twibell, 2000; Sovic, 2008; Yeh & Inose, 2003).

International Student Challenges

Challenges international students face when adapting to new cultures are discussed by first providing a review of culture shock literature, and then a more specific overview of the challenges related to the current study. This review of culture shock is appropriate because the

concept has historically been positioned as an overarching "umbrella" category for challenges faced by sojourners (i.e., those who move to new locations) in new cultures.

Culture shock. The phrase "culture shock" was first coined by anthropologist Kalervo Oberg in 1954 during a speech at a Brazilian women's club in Rio de Janeiro and was described as a series of emotional reactions to anxiety that result from losing familiar symbols of social interactions when in an unfamiliar context in which former patterns of behavior and cues for social interactions suddenly become ineffective (see also Brink & Saunders, 1976; López & Portero, 2013). While the wording has changed over the years, the definition of culture shock remains essentially the same. For example, Ting-Toomey and Chung (2005) defined it as an "inevitably stressful and disorienting experience" and a "stressful transitional period when individuals move from a familiar environment into an unfamiliar one" (pp. 115-116). Referencing the original talk by Oberg (1954), Ryan and Twibell (2000) added that culture shock is the transition to an unfamiliar environment in which old behavior patterns become ineffective and that it happens in four consecutive stages (i.e., honeymoon, disenchantment, resolution, and effective functioning). The honeymoon phase describes excitement someone feels initially when entering a new culture, disenchantment is when the realization of the novelty of the new environment and the visitors' inability to navigate it occurs, resolution is when the persons begin to seek new patterns of behavior to navigate the environment, and effective functioning is when they become comfortable with the environment and resume successful everyday engagement and interactions (Ryan & Twibell, 2000). The model that was tested in this study focused on potential solutions to challenges associated with the disenchantment phase, specifically communicative factors that might have helped international students reach the resolution and

effective functioning phases. Others have also described stress as a negative outcome of culture shock experiences (Spradley & Phillips, 1972; Zapf, 1991).

Researchers have found many links between international students' experiences of culture shock and associated stressors (Chiu, 1995; Ryan & Twibell, 2000; Sovic, 2008; Yeh & Inose, 2003). For instance, in their study, Ryan and Twibell (2000) used a longitudinal design to measure stressful situations of students studying abroad and effects on their health, and results revealed that the primary concerns students had about studying abroad were social isolation and communication. These findings were consistent with earlier research indicating that "culture shock occurs during cross-cultural encounters where social, psychological and cultural variations are evident" (Ryan & Twibell, 2000, p. 243). The proposed model in this study sought to address both social isolation, by incorporating friendship development (i.e., relational solidarity) and communication, by incorporating intergroup contact.

All international students face some level of stress as a result of their responses to culture shock. These experiences are so prevalent because there are exponentially more cultures in the world than there are countries. The number of distinct cultures in the world has been estimated to be around 10,000 (Triandis, 1995), explaining why this experience of culture shock is so common—especially in an increasingly globalized world as more people navigate between cultures. Culture shock has been studied from both problem-oriented (i.e., something to be solved) and learning/growth-oriented (i.e., something that leads to positive outcomes) perspectives (Kim, 2002). The current study embraces the latter perspective. Alder (1975) asserted that culture shock is a phenomenon leading to profound learning, self-awareness, and growth. While culture shock undoubtedly leads to stress development, the experience of it and response to it can lead to positive intergroup adaptation outcomes, such as better intergroup

attitudes. In the subsequent section, a review of specific culture shock related challenges international students face when coming to their new (e.g., U.S.) cultures is presented. The review begins with a general overview and then focuses on challenges addressed in the model that was developed for this project.

        General challenges. Previous research has established that international students are faced with many stressful circumstances when moving to their new host cultures, and moving to the U.S. is no exception. These stress creators after moving to the U.S. include, but are not limited to: Lack of language (i.e., English) proficiency (Lin, 2006), sociocultural differences (Smith & Khawajara, 2011), perceived stereotypes and discrimination from host culture (e.g., U.S. Americans) members (Constantine et al., 2005; Lee, 2010), lack of social support (Yeh & Inose, 2003), differing academic standards (Rienties & Templelaar, 2013), and social isolation (Coles & Swami, 2012; Owens & Loomes, 2010). For example, in a study of international students at U.S. universities, Lee (2010) found students "reported greater difficulty in social adjustment and felt that they were not always treated as fairly as domestic students" (p. 76). Eland and Thomas (2013) added that international students living in a different culture are "adjusting to many new things all at once, including language, climate, transportation, a new living situation, food, managing money, and being away from family and friends" (p. 147). Among the most significant of these predictors of stress are friendship development difficulties (Hechenova-Alampay et al.,2002; Wakefield, 2014), cultural identification conflicts (Rienties & Templelaar, 2013; Yeh & Inose, 2003), and English language proficiency (Giles & Johnson, 1981, 1987). Difficulties associated with developing friendships, particularly with students from the host (i.e., U.S.) culture, are discussed in more detail first.

Friendship development challenges. International students experience difficulty in building friendships due to differences in norms and social standards between cultures. For instance, in a qualitative study about friendship development between Chinese and U.S. students on a midwestern U.S. campus, Wakefield (2014) found Chinese students were confused by U.S. students' tendencies to disclose personal information, yet still not form deep friendships. Further, Hechenova-Alampay et al. (2002) stated that only 35% of international students reported having U.S. American friends. These studies point to the importance of friendship development as a potential explanatory factor of the relationship between communication and attitudes towards international students' host cultures. In addition to difficulties establishing friendships, international students also have to work through the challenge of identifying with their new surroundings and cultures. Moreover, where they come from (i.e., their home cultures) can also affect the degree of challenges they face.

Effect of origin culture and identification. The more different their host cultures are from their home cultures, the more pronounced the stressors international students face might be. For instance, Yeh and Inose (2003) reported that international students in the U.S. from Asia and Africa have less success with intercultural adaptation than international students from Europe, likely because all their European participants were white and thus didn't have as many problems with fitting into a society influenced greatly by white European norms. Similarly, Constantine et al. (2005) found that Ghanaian, Nigerian, and Kenyan international students in the U.S. perceived more discrimination. Middle Eastern students are also more likely to encounter more prejudice than students from other regions (Hanassab, 2006). Rientes and Templelaar (2013) added that international students in the Netherlands who came from Southern and "Confucian Asia" (i.e., east and southeast Asia) showed worse academic and social adjustment outcomes

compared to students from the Middle East and Latin America, and Lee (2010) asserted many Chinese students had anxieties about the logistics (e.g., finding a place to live) of getting to their universities. Bevis and Lucas (2007) have also found that Canadian and Western European students had the fewest adjustment problems, while Asian students experienced the most. Bevis and Lucas (2007) suggested this might be the case because "those whose appearance most closely resembles that of [Caucasian] Americans are least likely to encounter prejudicial rhetoric or behavior" (p. 244). Although the current study examined international students' individual-level variables because its focus was on individual-level relational processes, and thus the effect of home culture was not relevant, several other factors that might have differed among the sample were still controlled for.

For instance, Liu et al. (2017) have asserted that perceived attitudinal similarity, which measures participants' perceived similarity with their conversation partners and which was controlled for in the current study, plays a critical role in the initial process of intergroup friendship development. They found that perceived similarity served as a serial mediator between the relationship of contact and intergroup attitudes, in that, along with social attraction, it positively predicted intergroup attitudes (Liu et al., 2017). In addition to perceived attitudinal similarity towards the international students' most frequent U.S. university student contact, the current project also controlled for age, sex, education, length of stay in the United States, and English language proficiency.

As a result of the challenges associated with cultural identification described above, the current project incorporated a second explanatory factor of the relationship between communication and intergroup attitudes, identification towards the *host* (i.e., U.S.) culture. The addition of this second mediating variable in conjunction with relational solidarity also helps to

answer previous calls (e.g., Pettigrew, 1998) for future research to examine positive explanatory factors between intergroup contact and attitudes. Now that challenges faced by international students have been described and contextualized within the rationale of the current study, the proposed variables of the model are elaborated upon in further detail, starting with intergroup contact in the context of Intergroup Contact Theory, the proposed predictor.

Intergroup Contact Theory

Intercultural adaptation has been conceptualized as "the dynamic process by which individuals, upon relocating to an unfamiliar cultural environment, establish (or reestablish) and maintain a relatively stable, reciprocal, and functional relationship with the environment" (Kim, 2002, p. 260). Kim (2002) added that everyone entering a new culture will go through "new cultural learning, that is, the acquisition of the native cultural practices in wide-ranging areas, particularly in areas of direct relevance to the daily functioning of the resettlers—from attire and food habits to behavioral norms and cultural values" (p. 261). Ellingsworth (1983) also stated that the explanation of intercultural communication starts with interpersonal communication, with cultural factors incorporated later. Guided by ICT, one of the individual level variables being proposed in the current project is a measure of communicative interactions between the international students and their U.S. student counterparts, or more simply, a measure of intergroup contact.

Contact. Intergroup contact and related theoretical underpinnings have been widely used by scholars when studying the effects of intergroup communication on intergroup outcomes, such as attitudes towards different cultural groups. These theories are reviewed below to contextualize and emphasize the importance of intergroup contact as the predictor in the proposed model.

The Intergroup Contact Theory (ICT) stems from Allport's formative (1954) Contact Hypothesis. Trying to come to terms with the mass casualties of World War II, Western scholars in the 1950s began to wonder what socio-psychological factors could have influenced human beings to be so cruel to one another. During this period of research, the focus was on analyzing the causes of, and potential solutions for, prejudice. Allport (1954) assumed prejudice was primarily the result of a lack of understanding of the "other" (i.e., anyone not in one's perceived ingroup), and to increase understanding of others, contact between the two parties should occur under favorable conditions. Brewer and Gaertner (2003) described Allport's (1954) four qualifying communicative conditions necessary to make contact effective in reducing prejudice: (1) social and institutional support of the interaction between different ingroups, (2) acquaintance potential (i.e., can the parties get to know each other intimately?), (3) equal status (both parties must be equal in socioeconomic and other statuses), and (4) cooperative interaction (the parties must be dependent on each other). The model proposed here accounts for certain hypothesized conditions. For example, international students have acquaintance potential because they share some of the same university spaces as American students. That said, they do not have equal status with American host nationals as international students in the new cultural environment tend to be considered as demographic minorities who have relatively lower status due to their country of origin, language barriers, and/or unfamiliarity with cultural norms. Hence, to a large extent, their friendship development outcomes are dependent on whether U.S. students are open to such relationships.

Even when some of the theorized conditions and processes are violated, contact *still* makes a difference for intergroup attitude outcomes (Imamura, 2011; Islam & Hewstone, 2003; Kephart, 1957; Pettigrew, 1998; Wolsko et al., 2003). This project incorporates ICT, which is a

result of decades of research that stems from Allport's (1954) original idea as described above and is the basic theoretical bedrock used in this project. In the formative article on ICT, Pettigrew (1998) identified the psychological and sociolinguistic processes and mechanisms involved in the contact that occurs under Allport's (1954) proposed favorable conditions between people of different groups. The mechanisms Pettigrew (1998) identified are: (1) learning about the outgroup, (2) changing behaviors, (3) generating affective ties, and (4) ingroup reappraisal. The current model accounts for these processes. As international students interact with U.S. students, develop friendships, and identify more with U.S. culture, they might learn more about U.S. Americans (i.e., the outgroup), change their behaviors towards, and connect emotionally with, U.S. Americans (i.e., changing behaviors and generating affective ties), and learn to identify more with U.S. culture (i.e., ingroup reappraisal). Shim, Zhang, and Harwood (2012) stated that ICT "emphasizes direct contact as an effective way to reduce prejudice and enhance positive attitudes toward other social groups" (p. 3). Brown and Hewstone (2005) adapted the original ICT and suggested it can also work for intergroup communication contexts. They concluded "if the contact can be arranged so that it takes place between ingroup and outgroup members who can be regarded as sufficiently typical or representative of their groups, then the positive changes that occur [as a result of contact] should generalize to those groups as a whole" (Brown & Hewstone, 2005, p. 266). The model for the current study seeks to learn if international students' friendship development and their identification with U.S. American culture, as a result of their contact with American students, affect their attitudes towards U.S. Americans as a whole. While the four conditions originally identified by Allport (1954) rarely all happen, the inclusion of just *some* of the conditions and their associated processes as described

by ICT has been previously shown to have significant positive outcomes (Islam & Hewstone, 1993; Kephart, 1957; Wolsko et al., 2003).

For instance, Wolsko et al. (2003) found that the quality of contact led to Caucasian's evaluating Latinos more positively, and Kephart (1957) found white police officers who had positive contact with black officers had fewer objections to black officers joining their respective districts. In another study, interactions between Bangladeshi Muslims and Hindus resulted in positive intergroup attitudes as contact quality increased (Islam & Hewstone, 1993). Thus, the inclusion of intergroup contact as a predictor in the proposed model for this project is supported. International students at U.S. universities may engage in intergroup contact with U.S. domestic students under at least three of the qualified conditions described by Allport (1954). This intergroup contact might predict intergroup attitudes in the proposed model. The inclusion of intergroup attitudes as the outcome variable for this project is discussed in the subsequent section.

Intergroup Attitudes

Prior contact research, in general, has used the ABC construct to measure attitudes (i.e., *affective* attitudes, *behavioral* attitudes, and *cognitive* attitudes). In line with this prior literature (Imamura et al., 2011; Pettigrew & Tropp, 2006; Tropp, 2003; Tropp & Pettigrew, 2005), the current study also operationalizes intergroup attitudes as a three-dimensional construct and empirically measurable outcome of intergroup contact. Literature has shown intergroup contact has an effect on intergroup outcomes. In addition to examples already provided, consider further an exhaustive meta-analysis of 515 different studies of ICT conducted by Pettigrew and Tropp (2006). They defined contact as face-to-face interaction between clearly defined groups and found that contact "typically reduces intergroup prejudice" and that "these contact effects

typically generalize to the entire outgroup" (Pettigrew & Tropp, 2006, p. 751). The model being proposed for the current study operationalizes contact in terms of both contact quantity and quality, as perceived by international students' communication with their most frequent U.S. university student contact. The next section builds a rationale for the use of two explanatory factors in the proposed model, factors which might help address the *how* and *why* of intergroup contact's proposed effect on intergroup attitudes.

Relational Solidarity and Identification with U.S. Culture

The two explanatory variables in the proposed model explain the relationship between intergroup contact and intergroup attitudes, these variables are relational solidarity and identification with U.S. culture. The proposed inclusion of these variables and the proposed relationship between them are part of what makes this study unique. They both might help to explain the relationship between intergroup contact and intergroup attitudes and their sequential contributions to the proposed model are novel. For example, while Kim's (2001) Cross-cultural Adaptation Theory was most recently described by Zhang and Giles (2018) as a theory that emphasizes the type of adjustment and changes that sojourners make to become communicatively competent, better adapted, and functionally fit into a new and unfamiliar cultural environment, it does not account for intergroup attitude outcomes. In fact, for years scholars have only considered the explanatory potential of negative mechanisms in the relationship between contact and intergroup outcomes, particularly the influence of anxiety. For instance, in their study of immigrants in Italy, Voci and Hewstone (2003) found that intergroup anxiety served as a mediator between the relationship of contact and intergroup outcomes. In the formulation of ICT, however, Pettigrew and colleagues (1997, 1998, 2006) encouraged scholars to focus on the potential effects of positive mechanisms between intergroup contact and attitudes

(i.e., to focus on social phenomena such as friendship development as opposed to anxiety). Intergroup Contact Theory argues for the need for personal contact in improving intergroup relations (Pettigrew, 1998). Specifically, intergroup contact must provide the opportunity for friendship in order for positive individual level contact effects to be generalized to the group level (Spencer-Rodgers & McGovern, 2002).

Pettigrew and Tropp (2006) also called for the inclusion of positive mediating variables to explain the relationship between contact and intergroup attitudes. In line with those calls by Pettigrew and colleagues (1997, 1998, 2006), the current study sought to focus not on anxiety, but on relational solidarity and identification with U.S. culture, as explanatory mechanisms in the proposed model. The unique contribution of the model proposed in this study is the hypothesized link between intergroup contact and intergroup attitudes *through* these two explanatory variables, which goes beyond Kim's (2001) Cross-cultural Adaptation Theory. The current study emphasizes the theoretical link between theories of cultural adaptation and intergroup contact. Following is a discussion of these explanatory variables, how they each might serve the model being developed, and finally how they relate to each other.

Relational solidarity. One of the explanatory mechanisms in the model that might show how and why intergroup contact might influence cultural adaptation and intergroup attitudes among international students is friendship development, as operationalized through relational solidarity. Relational solidarity is the degree of connection between two individuals, primarily dependent on relational satisfaction factors such as closeness, liking, commonality, and trust (Harwood, 2000; Hendrick, 1988; Imamura et al., 2011, 2012; Wheeless, 1978). Relational solidarity has been associated with positive intergroup outcomes before, which is why this study seeks to incorporate it as well. Integration of international students into U.S. universities might

serve to benefit *both* the international and host student populations by creating a favorable environment for friendship development (Bevis & Lucas, 2007; Bochner, 1977; Hendrickson, Rosen, & Aune, 2011; Luo & Jamieson-Drake, 2013; Pettigrew, 1998; Rippl, 1995). For instance, international students who have interactions with U.S. American students via extracurricular activities have been shown to be the most satisfied with their college experience (Bevis & Lucas, 2007). Rippl (1995), as a case in point, found friendship to be an important explanatory variable on the effects of contact between West and East Germans. Pettigrew (1998) has also stated "positive emotions aroused by intergroup friendship also can be pivotal" in explaining intergroup contact outcomes and that this contact "must provide the participants with the opportunity to become friends" (p. 72, 76).

With colleagues, Pettigrew surveyed participants from four western European countries (i.e., France, Netherlands, United Kingdom, and West Germany) and found those with friends from outgroups (i.e., from countries other than their own) had lower prejudice (Pettigrew, 1997). In the U.S. context, Bevis and Lucas (2007) added that "students who were most academically well-adjusted were those who had the most frequent interaction with American students" (p. 186). Despite all of the benefits of relational solidarity, international students have a distinct difficulty developing friendships with U.S. American university students. In the qualitative study of Chinese students' perceptions of communication and friendship development with U.S. students, Wakefield (2014) found that "broadly speaking, the interviewees negatively describe their communication and [were] dissatisfied with friendship building with Americans" (p. 145). As a result, within the proposed model for this sequential study, relational solidarity might fit well as one of the explanatory variables affecting the relationship between intergroup contact, cultural adaptation, and intergroup attitudes. This notion is unpacked further below.

International students who had communicative interactions with U.S. American university students have been found to be the most satisfied with their college experience (Bevis & Lucas, 2007). Further, Hechanova-Alampay et al. (2002) found that "the more international sojourners interacted with host nations [members] (Americans), the greater adjustment and less strain they experienced" (p. 471). According to Klomegah (2006), a student's willingness to reach out to others, to initiate contact with U.S. American peers, and to work hard in adjusting to U.S. society were important to successful adjustment. Williams and Johnson (2011) also argued that "cross-cultural friendships are associated with psychological, social, and academic benefits" for international students (p. 41). Moreover, Imamura et al. (2011) found that relational solidarity fully mediated the relationship between intergroup contact and attitudes in the case of Japanese sojourners' and their U.S. American counterparts.

The "interactions" described above by various studies are intergroup contact, the proposed predictor in the current model, and a significant part of successful intergroup adjustment (the outcome described in all the studies cited above) is positive intergroup attitudes, the proposed outcome variable in this study. Thus, it follows and makes sense to place relational solidarity (i.e., friendship development) as an explanatory factor in the model for this study. The second explanatory variable that might fit well into this model is identification with U.S. culture and is detailed further below in the context of the Common Ingroup Identity Model (CIIM).

Identification with U.S. culture. Taking inspiration from Tajfel and Turner's (1979) influential Social Identity Theory (SIT) and Turner et al.'s (1987) related Self-categorization Theory (SCT), Gartner and Dovidio (2000) introduced the Common Ingroup Identity Model (CIIM). CIIM aims to recategorize ingroups and outgroups in order to increase cooperation between them. Gaertner and Dovidio (2000) have argued "if members of different groups are

induced to conceive of themselves as a single more inclusive, superordinate group…attitudes towards former outgroup members should become more positive through processes involving pro-ingroup bias" (p. 42). In the proposed model for this study, the outgroup members from the international students' perspectives are U.S. students, and the preferred identity outcome would be for international students to learn to perceive their U.S. host culture (and thus, U.S. students) as part of their ingroups. Consequently, in this study, international students' identification with U.S. American culture might serve as a second explanatory factor between the relationship of intergroup contact and intergroup attitudes. Another important theoretical construct related to the effect of identity on intergroup outcomes is acculturation, and a brief overview is necessary to build a further rationale for the inclusion of an identity variable as the second explanatory factor in the proposed model.

In 1936, Redfield and colleagues first defined acculturation as "those phenomena which result when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original cultural pattern of either or both groups" (p. 149). Berry and colleagues (1989) also indicated that, on an individual level, people experience psychological acculturation and hold attitudes towards how they wish to relate to others and their respective cultures. Berry et al. (1989) argued these attitudes are outcomes based on participants' answers to two fundamental questions, answers which place the persons on a continuum: One is about the value placed on maintenance of one's own culture (*home* culture), the other about the value placed on the desirability of identifying with and creating relationships with outgroups (*host* culture) from the new culture. Berry stated these two questions may be answered with dichotomous "yes" or "no" choices, generating a fourfold model.

This acculturation model, as it's known from past research, is made up of four theoretical acculturation outcomes, or strategies individuals use to adapt after moving to new societies (e.g., international students in the U.S.): *Assimilation, integration, separation*, and *marginalization*. Looking at these strategies from the perspectives of non-dominant minority groups (e.g., international students in the U.S.) in 1997, Berry conceptualized each as follows: *Assimilation* occurs when individuals seek daily interaction with their host culture but forget their own culture (*separation* is the opposite, where individuals seek out interaction only with their home culture and ignore their new host culture), *marginalization* occurs when individuals feel no connection to any culture, and *integration* occurs when "there is an interest in both maintaining one's individual original culture, while in daily interactions with other groups" (p. 9). The integration outcome has consistently been cited as the most beneficial acculturation strategy in a variety of contexts (Berry, 1997,1999; Berry et al., 1987; Liebkind, 2001; Zagefka et al., 2012). For instance, the integration outcome has been shown to lead to the best psychosocial and health outcomes for minority members (Berry et al., 1987; Berry, 1999; Liebkind, 2001) and most psychologists have also proposed integration as the most desirable acculturation preference (Berry, 1997).

While the current model does not seek to measure these four acculturative outcomes, this review of acculturation was relevant because all acculturation outcomes are the result of identification with either home or host culture, and the current study examined international student participants' identification with their host (i.e., U.S.) culture. Discussing acculturation in this context, Zhang and Giles (2018) have added that the adjusting individuals could demonstrate high identification with the host culture through communicative behaviors and friendship building. Lastly, one way to measure integration is through reported intergroup ABC attitudes

towards the host culture, which are the proposed outcome variables in the current model. These attitudinal measures are also in line with Intergroup Contact Theory (Imamura et al., 2016). The next paragraph discusses how the proposed second explanatory factor, identification with U.S. culture, fits into the proposed model between intergroup contact and intergroup attitudes.

Connection between contact, identification with U.S. culture, and attitudes.

Identifying people who are different as part of one's ingroup has been shown to improve intergroup outcomes (Dovidio, Gaertner, & Saguy, 2007; Kim, 2012). In the proposed model, this is exactly what is being hypothesized will happen with the addition of identification with U.S. culture as one of the explanatory variables. Through contact with U.S. American students, international students might identify more with all U.S. Americans in general, and this might, in turn, lead to positive intergroup attitude outcomes. Further justifying the reasoning behind including identification as one of the explanatory factors of the model, Abrams and colleagues (2002) have indicated identity and communication mutually reinforce each other. The acculturation framework is also useful when theorizing about the relationship between identification with U.S. culture and intergroup attitudes. The four acculturative outcomes predicted by Berry and colleagues (1989, 1997) are based on participants' identification with different cultures, and the explanatory variable herein assesses the international students' identification with their U.S. host culture.

Further, referencing Searle and Ward (1990), Liebkind argued that "adaptive outcomes of acculturation are meaningfully divided into psychological (emotional/affective) and sociocultural (behavioral) domains" (2001, p. 391). The model in this study operationalizes the hypothesized intergroup attitude outcomes as affective, behavioral, and cognitive intergroup attitudes, thus addressing the psychological and sociocultural domains discussed by Liebkind (2001). The

inclusion of the two sequential explanatory factors in the proposed model (i.e., relational solidarity and identification with U.S. culture) has not been done before. Since both factors are anticipated to influence the relationship between intergroup contact and intergroup attitudes, the relationship between the explanatory factors must be rationalized as well. This is accomplished in the subsequent section.

Connection between relational solidarity and identification with U.S. culture. The fit for each of the explanatory factors within the proposed model having been addressed above, it is equally important to additionally establish the link *between*, and rationale for, the use of these two specific variables in the model. Why does this study predict that relational solidarity (i.e., friendship development) leads to identification with U.S. culture, and secondly, why do these factors together potentially constitute an important explanatory mechanism for the intergroup contact and attitudes link?

Citing Pettigrew (1997) and Brislin (1986), Imamura et al. (2011) stated "…intergroup contact provides an opportunity to establish a closer relationship with group members *and… relational intimacy can break down barriers between ingroup and outgroup members* [emphasis added]" (p. 108). Furthermore, Kim (2012) has conceptualized "cultural transformation" as a variable describing sojourners' (e.g., international students) embrace of their new host cultures, specifically through identification with those host cultures, while at the same time not giving up their identification to their respective home cultures. This cultural transformation essentially describes Berry's (1997) integration acculturation outcome since it describes persons identifying with both their home and host cultures. Further, Zhang and Giles (2018) have also indicated that individuals who are adjusting to new cultures could demonstrate high identification with host culture through appropriate communication behaviors and friendship building.

These studies have described an outcome of identification, speaking to the second explanatory factor being proposed in this study; it is reasonable to assume identification with host (e.g., U.S.) culture will increase as the perception of relational solidarity, the first proposed explanatory variable, also increases. Consequently, the primary reason for the inclusion of both variables is that intergroup contact has the potential to create stronger relational solidarity, which in turn might lead to a breakdown in intergroup barriers resulting in international students identifying more strongly with their U.S. host culture. While Kim's (2001) work stops with identification, the current model proposes that identification as an outcome of relational solidarity with the most frequent American contact can further explain the association between intergroup contact and intergroup attitudes. Having discussed predictor, explanatory, and outcome variables of the proposed model, next follows a rationalization for the inclusion of eight control variables.

Control Variables

Eight control variables were included in the current model. The main reason for their proposed inclusion is to account for potential differences among the international student participant sample. The first four proposed control variables are the participants' and their most frequent U.S. university student contact partners' age and sex. The other four proposed control variables are the participants' education, their time spent in the U.S., their English language proficiency, and finally their perceived attitudinal similarities with U.S. American students. Each is discussed in more detail below.

Age and sex. Considering the possible influence of age (Harwood et al., 2005; Hummert, 1990) and sex (Vonk & Olde-Monnikhof, 1998) in interpersonal and intergroup communication outcomes, the effects of these two factors were controlled in the model. For example, sex has

been shown to affect people's intergroup attitudes and might serve as another overarching ingroup among international students from different countries. Vonk & Olde-Monnikhof (1998) found that subjects perceived the sex subgroups (e.g., "career woman," "female homemaker," "business man," "macho man," etc.) with which they identified more favorably than the other sex's subgroups. Indeed, identifying as female, male, or any other gender might affect participants' overall outcomes. Consequently, both age and sex of the participants and of their most frequent U.S. American student contact partners were controlled for in the current model.

Education and length of stay in the United States. The international students' education, operationalized in terms of total years of education received, and their length of stay in the U.S. also serve as useful control variables in the proposed model because both variables have the potential to influence adaptation to U.S. culture. Education is a standard demographic control variable, along with age and sex, while length of stay in the U.S. is important in the proposed model because the intercultural adaptation experience happens over time, and the more time students have spent in the U.S., the further along they might be in the adaptation process.

English language proficiency. International students' knowledge of the primary language of their host cultures has been revealed as a significant factor in their adaptation experiences (Coles & Swami, 2012; Imamura et al., 2011; Wang, 2018; Yeh & Inose, 2003; Zhang & Goodson, 2011). Coles and Swami (2012) have identified host language proficiency as one of the "sociodemographic variables" influencing cultural adjustment (p. 88). In a literature review of 64 studies on international student adjustment, Zhang and Goodson (2011) also listed "English language proficiency" as one of the factors predicting cultural adjustment (p. 625). Yeh and Inose (2003) have argued that students who were more fluent in English reported significantly lower levels of stress when moving to their host cultures. Similarly, Imamura et al.

(2011) added "comfort in reading, writing, speaking, and listening comprehension determines sojourners' motivations for interaction with host nationals to a great extent" (p.109). Lastly, Wang (2018) recently asserted "language barriers are identified as among the most prominent obstacles affecting international students'…integration" (p. iv). As with the other covariates, international students from different countries can be grouped by their English language proficiency, which is why this was the seventh control variable used in the model. Finally, participants' perceived altitudinal similarity was entered as the eighth control variable used for this model.

       Perceived attitudinal similarity. The final control variable for this model is perceived attitudinal similarity from the international student participants towards U.S. Americans. The concept of perceived similarity affecting attitudes goes back decades to Byrne's (1961) Similarity Attraction Theory, which argued people positively evaluate those who they perceive to have similar attitudes as themselves. Perceived attitudinal similarity measures participants' perceived similarity with their conversation partners about things such as outlook toward life, interests and hobbies, and sociocultural group memberships (Gudykunst & Kim, 2003; Liu et al., 2017). This variable has been shown to be consequential for intergroup outcomes (Kudo & Simkin, 2003; Liu et al., 2017). For example, Kudo and Simkin (2003) found when Japanese students perceived U.S. Americans had similar hobbies, attitudes, and were in a similar age group as they were, they assumed it would be easier to become friends with them. Liu et al. (2017) also asserted that perceived attitudinal similarity plays a crucial role in friendship development. Consequently, perceived attitudinal similarity was added to this model as a covariate to account for potential differences among the international student participants. Before

listing the hypotheses and model used for this study, a summary of the above rationale and overview of calls for research in this area is provided below.

Summary

There have been several calls for further research into international student adaptation experiences (Coles & Swami, 2012; Hudzik & Briggs, 2012; Lin, 2006; Zhou et al., 2008) and the current study seeks to answer them. The purpose of this study was to learn what factors are most influential in determining international student intergroup adaptation and attitudes towards U.S. Americans. The current study focused on the specific challenge of communication (i.e., intergroup contact) as a predictor and the resulting intergroup affective, behavioral, and cognitive attitude outcomes. The study included two sequential explanatory factors, which are theoretically associated with each other, in between the predictor and outcome variables; these explanatory factors are international students' perceived relational solidarity and identification with U.S. culture. This study addresses academic, student, and practitioner audiences by providing theoretical and practical implications. This leads to the hypotheses for the study.

Hypotheses

The proposed conceptual model tested in the present study has international students' contact quantity and quality as the independent (i.e., predictor) variables and affective, behavioral, and cognitive international student intergroup attitudes towards U.S. Americans as the dependent (i.e., outcome) variables. International students' perceived relational solidarity with their most frequent U.S. American university student contact partner and their identification with U.S. culture are situated as two important explanatory variables. The hypotheses of this study predict that international students' perceived contact quantity and quality with their most frequent U.S. American contact will have significant positive indirect effects on their intergroup

attitudes towards U.S. Americans, through the explanatory variables of perceived relational solidarity with their most frequent U.S. contact and the international students' identification with U.S. culture. Following is a list of the hypotheses of the proposed study and a figure of the proposed conceptual model, which visually summarizes the assumptions and predictions made above.

H1: International students' perceived contact quantity and contact quality with their most frequent U.S. American contact will have significant positive indirect effects on their affective attitudes towards U.S. Americans through the serial mediators of perceived relational solidarity with the contact and identification with U.S. culture.

H2: International students' perceived contact quantity and contact quality with their most frequent U.S. American contact will have significant positive indirect effects on their behavioral attitudes towards U.S. Americans through the serial mediators of perceived relational solidarity with the contact and identification with U.S. culture.

H3: International students' perceived contact quantity and contact quality with their most frequent U.S. American contact 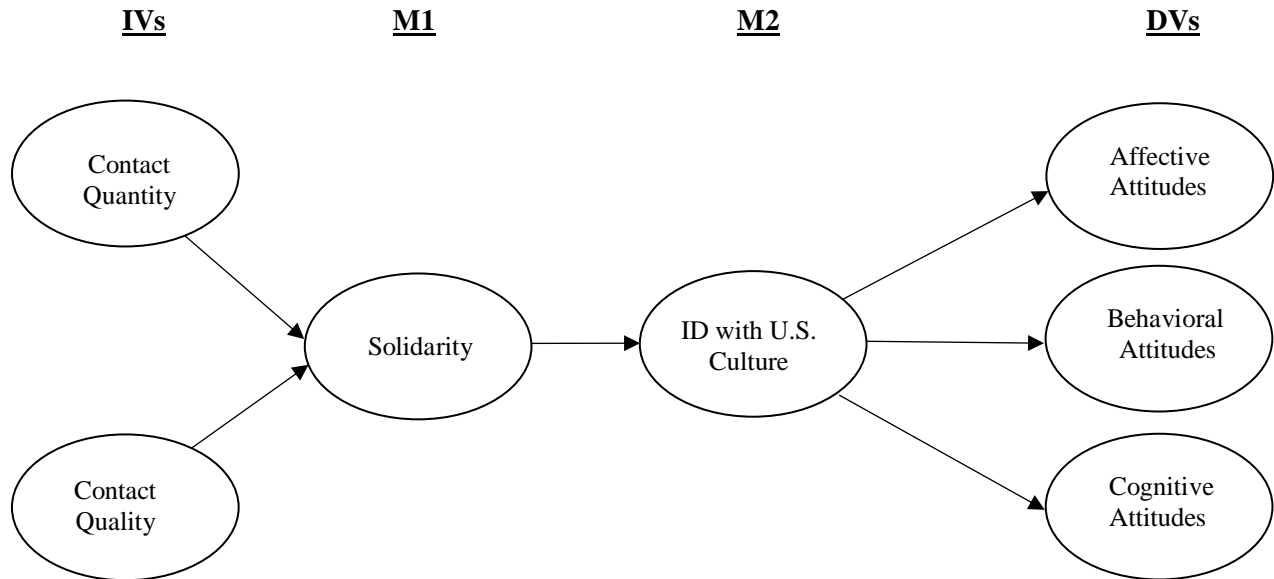will have significant positive indirect effects on their cognitive attitudes towards U.S. Americans through the serial mediators of perceived relational solidarity with the contact and identification with U.S. culture.

Conceptual Model

Figure 1

Conceptual Model

IVs	**M1**	**M2**	**DVs**

IV = Independent Variables, M1 = Sequential Mediator One, M2 = Sequential Mediator Two,

DV = Dependent Variables

Chapter Three:

Method

This study used a survey to measure the effects of international students' contact quantity and contact quality with their most frequent U.S. American student contact (IVs) on (1) international students' perceived relational solidarity with their most frequent American student contact (M1), (2) their identification with U.S. culture (M2), and (3) their affective (i.e., prejudice), behavioral (i.e., discrimination), and cognitive (i.e., stereotypes) intergroup attitudes towards U.S. Americans as a whole (DVs). A survey-design was the best choice for this study because the focus of the model was to identify possible associations between the variables above. Three hypotheses were proposed (see the end of Chapter Two). This chapter provides the detailed data collection procedures used in the present study. After information about the data collection below, there is a discussion of relevant participant demographic and background data, and then a review of the measures used for the study's primary variables.

Data Collection

Data collection was conducted using an online survey design. Institutional Review Board (IRB) approval was sought, and approved for, the data collection (refer to Appendix A). The participants completed the online survey, which was created using www.qualtrics.com, consisting of basic demographic and background information, Likert-type and semantic differential scales, and qualitative text-entry items assessing the relevant variables, as described in detail below. The survey was taken by participants from both a university sample and a wider national sample, the latter coming from Amazon.com's Mechanical Turk (MTurk) service. Both methods were used for recruitment to ensure a sample size large enough for analysis. A unique URL was created for each participant pool. There were two surveys to keep the samples separate

until analyses. The MTurk survey was only slightly edited from the university survey, for example instead of asking participants to confirm they were an international student at the specific university, the MTurk participants had to confirm they were an international student pursuing a degree or studying and visiting for a limited time (e.g., exchange students for one or two years) at a university in the United States.

Analyses

Data were analyzed using IBM SPSS and the Hayes (2018) PROCESS models. PROCESS is a computational tool designed as an add-on to SPSS to aide in observed variable path analysis-based moderation and mediation analysis (Hayes, 2018). To test the hypothesized model, PROCESS Model 6 (with 5000 bootstrap iterations), which tests indirect effects through two sequential mediators, was used because it was the best fit for the model developed in this study (Hayes, 2018). Bootstrapping is a resampling method, in which the sample size of the current study ($N = 233$) is treated as a small representation of the population, and tests on pathways are run thousands of times with hypothetical results from different participants from the assumed population (Hayes, 2018). Thus, an empirical representation of the sampling distribution of the indirect effect for the current sample is generated, increasing the potential for statistical inference (Hayes, 2018). In each pathway test, one dependent variable (affective, behavioral, or cognitive attitudes) was entered as the *Y* variable. In all three hypothesized models, perceived relational solidarity with U.S. most frequent contact and identification with U.S. culture were entered as *M*1 (i.e., sequential mediator one; relational solidarity) and *M*2 (i.e., sequential mediator two; identification with U.S. culture), respectively. A series of regression analyses were also conducted to test the three hypotheses. In each regression analysis, contact quantity or contact quality was entered as the independent variable (*X*) with the other as a control

variable. Finally, a correlation matrix was conducted for the major variables in the study (see Table 1).

Considering the possible influences of age (Harwood et al., 2005; Hummert, 1990), sex (Vonk & Olde-Monnikhof, 1998), education (Zhou et al., 2008), length of stay in the U.S. (Klomegah, 2006), English language proficiency (Coles & Swami, 2012; Imamura et al., 2011; Wang, 2018; Yeh & Inose, 2003; Zhang & Goodson, 2011), and perceived attitudinal similarity (Byrne, 1961; Gudykunst & Kim, 2003; Kudo & Simkin, 2003; Liu et al., 2017), the effects of these eight factors were controlled as covariates (see Appendix B for covariate measures). [1] The zero-order correlations between the covariates are presented in Table 2. Controlling for these variables also helped to address the potential problem of analyzing international student participants from many different countries in one sample.

Participants

International students in the United States were recruited from a medium-sized public midwestern university and using Amazon.com's Mechanical Turk service. A total of 967 students took the survey, 146 directly from the university and 821 from MTurk. For the university student sample, 75 voluntary international students participated in the study and finished the survey. The rest of the participants ($n = 71$) were removed from the study as they were either not international students ($n = 66$) or had excessive missing values ($n = 5$). Many participants recruited from the university received extra credit for their participation in the survey. MTurk participants received $0.50 for completing the survey, the funds were provided

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[1] Only perceived attitudinal similarity was significantly associated with the two serial mediators in the model; relational solidarity: $\beta = .39$, $p < .001$ and identity with U.S. culture: $\beta = .27$, $p < .001$. There were no other significant associations between the covariates and the major variables in the current study.

by the author. After reading the initial MTurk data, a total of 158 participants were chosen for analyses. The rest of the participants ($n = 663$) were removed because they either (1) were not international students ($n = 569$; despite the inclusion of a question requiring them to confirm they were) or (2) had excessive missing values ($n = 94$).

A total of 233 participant (i.e., $n = 75$ from the midwestern university and $n = 158$ from MTurk) surveys were used for testing the hypotheses. A series of independent samples *t-tests* were conducted, and results revealed no significant differences among the two samples (i.e., university sample and MTurk sample) on the major variables in the current study (see Table 3). Hence, they were combined for the main analyses to test the hypotheses in the current study. Of the 233 participants 99 were female (i.e., 42.5%) and 133 were male (i.e., 57.1%), with one missing value who didn't include sex. Further, their average age was 24.78 years old ($SD =$ 5.51), ranging from 18 to 47 years old.

Participants also answered how many years of total education they have and how much total time they have spent in the U.S. in terms of months and years. The participants reported an average of 13.64 total years of education ($SD = 4.27$). They reported an average length of stay in the U.S. of 33.10 months ($SD = 11.30$). Further, the participants came from at least 56 different countries, with some indicating continents (i.e., Africa, Asia/East Asia) instead of countries in their responses. The top three countries of origin among the participants made up 37% of the sample, these were China ($n = 60$), India ($n = 16$), and Germany ($n = 10$). Refer to Table 4 for the listing of all countries of origin.

Participants were also asked to indicate their most frequent U.S. American university student contact partners and their demographic information; 40.78% were female (i.e., 95) and their mean age was 22.2 ($SD = 1.20$; range = 18-36). Lastly, the ethnicities of the participants'

most frequent U.S. American university student contacts were: 82.52% European Americans, 5.83% Asian Americans, 2.91% Latino Americans, .97% African Americans, and 6.80% "other."

Finally, participants were asked about their English language proficiency. English language proficiency (see Appendix B) was measured using a scale created by Imamura, Zhang, and Harwood (2011). Participants indicated how comfortable they were in using English for speaking, listening comprehension, reading, and writing on seven-point Likert scales (1 = Extremely uncomfortable, 7 = Extremely comfortable) consisting of 4 items ($\alpha = .93$, $M = 5.32$, $SD = 1.32$) (e.g., "How comfortable are you with speaking in English?", "How comfortable are you with writing in English?").

Major Measures

Participants were first asked to answer questions related to their demographics (e.g., ethnicity/race; see Appendix B) and background (e.g., time spent in the U.S.; see Appendix B), as described above. Following these, participants were asked to answer general questions about their English language proficiency and pertaining to their overall experiences of U.S. culture (i.e., intergroup attitudes towards U.S. culture, identification with U.S. culture). Participants then answered questions related to their experiences with their most frequent U.S. American student contact partner (i.e., contact quantity, contact quality, relational solidarity, perceived attitudinal similarity). The participants were also asked to report their most frequent U.S. American student contact's sex, age, and ethnicity, as indicated above. The following are the major measures (see Appendix B) used in the current study, the correlations are presented in Table 1.

Affective attitudes. For the affective attitudes a semantic differential scale was used, there were eight items each with pairs of adjectives ($\alpha = .95$, $M = 5.36$, $SD = 1.17$) describing participants' feelings towards people of U.S. culture (e.g., "Cold-Warm", "Hostile-Friendly",

etc.). Participants were prompted with the question, "Indicate the degree to which you feel Cold-Warm, Negative-Positive, etc., towards people from U.S. American culture." This scale was adapted from Imamura, Zhang, and Shim (2012), with the original items having been developed by Tropp and Pettigrew (2005).

Behavioral attitudes. Behavioral attitudes were measured using an adapted seven-item ($\alpha = .90$, $M = 5.24$, $SD = 1.04$) Likert scale from Ortiz and Harwood (2007). Ortiz and Harwood (2007) adapted a social distance scale used by Esses and Dovidio (2002), asking participants about their willingness to interact/engage with outgroup members (e.g., "Confide in someone from my home culture"). The seven items used here each described a particular context of behavioral interaction with U.S. Americans (e.g., "Have a person from U.S. American culture visit my home," "Have a person from U.S. American culture as a close friend"). Participants responded to each of the seven contextual items by selecting the degree to which they were willing to interact/engage with people from U.S. culture for each context (i.e., 1 = "Extremely unwilling," 7 = "Extremely willing").

Cognitive attitudes. Cognitive attitudes were measured using a 15-item semantic differential scale ($\alpha = .93$, $M = 5.15$, $SD = 1.00$), each item included a pair of adjectives describing participants' thoughts about people from U.S. American culture (e.g., "Deceitful-Truthful", "Dependent-Independent", "Intolerant-Tolerant"). Participants were prompted with the question, "Indicate the degree to which you think people from U.S. American culture are Deceitful-Truthful, Incompetent-Competent, etc.". This scale was adapted from Imamura, Zhang, and Harwood (2011), who developed it from Troop and Pettigrew (2005).

Contact. Contact was measured across two dimensions, contact quantity and contact quality. Before filling out respective scales for contact quantity and quality (described below),

participants were asked to identify the U.S. American university student who is their most frequent contact. Participants were asked to identify this person's sex, age, and ethnity/race, (see Appendix B). This method of measurement for contact was adapted from Shim, Zhang, and Harwood (2012), who adapted previous scales to measure contact quantity and quality in both direct and mediated contexts between Koreans and Americans. Shim et al. (2012) measured contact quantity with three items adapted from Spencer-Rodgers and McGovern (2002; e.g., "How often do you study or work together with this person?") and contact quality with three items adapted from Ortiz and Harwood (2007; e.g., "How friendly has your contact been with this person?"). Both their contact quantity and quality measures asked about the participants' closest relationship with a U.S. American. For the current study, "U.S. American" was changed to "U.S. American student" and participants were asked about the U.S. American university student with whom they had the most frequent contact. The use of "U.S. American student" for these items is a unique contribution of the current study.

Contact quantity. For the current study, contact quantity was measured on a seven-point Likert scale (1 = "Never," 7 = "Always"). Participants responded to three items (α = .84, M = 4.80, SD = 1.30) (e.g., "How often do you study or work together with this student?", "How often do you talk and engage in informal conversation with this student?") assessing their contact quality with their previously identified most frequent U.S. university student contact partner. This scale was adapted from Shim, Zhang, & Harwood (2012).

Contact quality. Contact quality was measured using a seven-point Likert scale (1 = "Strongly disagree", 7 = "Strongly agree") and participants responded to three items (α = .93, M = 5.44, SD = 1.17) (e.g., "I value the time I have spent with this student", "My contact with this student has been friendly") related to contact quality with their previously identified most

frequent U.S. American student contact partner. As with contact quantity, this scale was adapted from Shim et al. (2012).

Perceived attitudinal similarity. Liu et al. (2017) used Vangelisti and Caughlin's (1997) five-item instrument ($\alpha = .88$, $M = 4.92$, $SD = 1.10$) to measure participants' perceptions of shared/similar attitudes or outlooks toward life. The current study did the same to measure the perceived attitudinal similarity covariable, asking the international students about their perceived attitudinal similarity with their most frequent U.S. American student contact partner whom they identified earlier on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree; e.g., "This student and I share a lot of the same attitudes about things"). One item was reverse coded.

Mediating variables. Two sequential mediating variables were used in the current model because of their hypothesized effect on the relationship between intergroup contact and intergroup attitudes, the independent and dependent variables of the study, respectively, and because of their relationship to each other.

Relational solidarity. Relational solidarity was measured using an adapted scale developed by Imamura et al. (2011) and based on scales by Wheeles (1978) and Hendrick (1988). For this study, one item was deleted due to repetition, and two other items were reverse coded. Participants were asked to think about their previously identified most frequent U.S. American university student contact before responding to the scale. The Likert scale consisted of nine items ($\alpha = .85$, $M = 4.93$, $SD = .97$) asking about the participants' relationship with their most frequent U.S. contact (e.g., "We are very close to each other", "I care about this student", "We share a lot in common"; 1 = "Strongly disagree" , 7 = "Strongly agree").

Identification with U.S. culture. Identification with U.S. culture was measured with a four-item ($\alpha = .87$, $M = 5.07$, $SD = 1.10$) Likert scale (1 = "Strongly disagree," 7 = "Strongly

agree"), participants responded with their level of agreement with each statement (e.g., "U.S. American culture is important to me", "I am proud of being a part of U.S. American culture"). This scale was adapted from Imamura, Zhang, and Hardwood (2011).

The results of the study are described in the next chapter, and a discussion follows in Chapter Five.

Chapter Four:

Results

In general, across all three models, six serial mediation analyses were conducted using Hayes (2018) PROCESS Model 6 and bootstrap analyses with 5,000 iterations. These mediation analyses were conducted to test for the hypothesized sequential indirect effects in the model. The indirect path was interpreted as significant when the 95% bias-corrected confidence interval for the indirect effect did not contain zero (Hayes, 2018). The sample sizes were different for each of the models tested for the three hypotheses due to missing values: Model 1 (i.e., Y = affective attitudes), $n = 193$; Model 2 (i.e., Y = behavioral attitudes), $n = 191$, and Model 3 (i.e., Y = cognitive attitudes), $n = 190$.

For Model 1, there were significant indirect effects of international students' perceived contact quantity and quality on their affective attitudes through perceived relational solidarity with their most frequent U.S. student contact and identification with U.S. culture sequentially (contact quantity: $\beta = .04$, $SE = .020$; contact quality: $\beta = .04$, $SE = .024$; see Table 5). Further, perceived contact quantity and quality also had significant indirect effects on affective attitudes only through identification with U.S. culture (contact quantity: $\beta = .06$, $SE = .031$; contact quality: $\beta = .14$, $SE = .052$, respectively; see Table 5).

Figure 2

Model 1
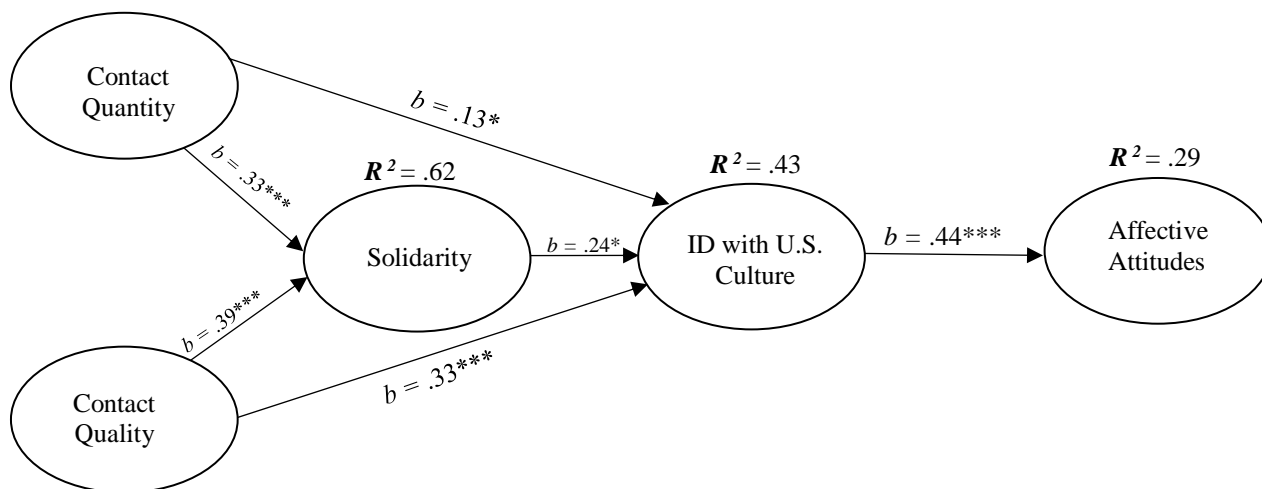
Note. ***$p < .001$, *$p < .05$; $n = 193$. Only significant paths are reported.

The same effects were reported for Model 2, where behavioral attitudes was the dependent variable. There were significant indirect effects of international students' perceived contact quantity and quality on their behavioral attitudes through perceived relational solidarity with their most frequent U.S. student contact and identification with U.S. culture sequentially (contact quantity: $\beta = .03$, $SE = .016$; contact quality: $\beta = .04$, $SE = .021$; see Table 6). Perceived contact quantity and quality also had significant indirect effects on behavioral attitudes only through identification with U.S. culture (contact quantity: $\beta = .06$, $SE = .031$; contact quality: $\beta = .13$, $SE = .048$, respectively; see Table 6). Furthermore, Hypothesis 2 also showed a direct effect between qualitative contact and behavioral intergroup attitudes ($\beta = .28$, $t = 3.25$, $p < .001$, $SE = .09$; see Figure 3).

Figure 3

Model 2
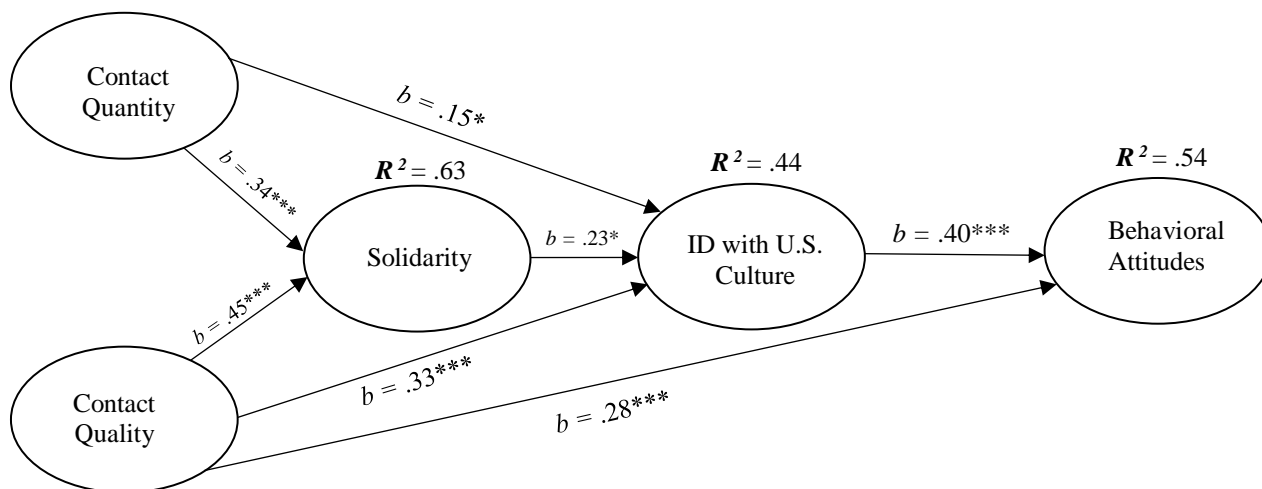
Note. ***p < .001, *p < .05; *n* = 191. Only significant paths are reported.

Model 3 showed the same effects, where cognitive attitudes served as the dependent variable. There were significant indirect effects of international students' perceived contact quantity and quality on their cognitive attitudes through perceived relational solidarity with their most frequent U.S. student contact and identification with U.S. culture sequentially (contact quantity: $\beta = .04$, *SE* = .019 ; contact quality: $\beta = .04$, *SE* = .023 ; see Table 7). In addition, perceived contact quantity and quality also had significant indirect effects on cognitive attitudes only through identification with U.S. culture (contact quantity: $\beta = .06$, *SE* = .031; contact quality: $\beta = .16$, *SE* = .042, respectively; see Table 7).

The descriptive information for models one, two, and three among all the variables are also reported in Tables 5, 6, and 7, respectively.

Figure 4

Model 3

Path diagram. Contact Quantity with arrow $b = .12^\dagger$ to ID with U.S. Culture and $b = -.33^{***}$ to Solidarity. Contact Quality with arrow $b = .38^{***}$ to Solidarity and $b = .35^{***}$ to ID with U.S. Culture. Solidarity ($R^2 = .62$) with arrow $b = .24^*$ to ID with U.S. Culture ($R^2 = .45$), which has arrow $b = .45^{***}$ to Cognitive Attitudes ($R^2 = .27$).
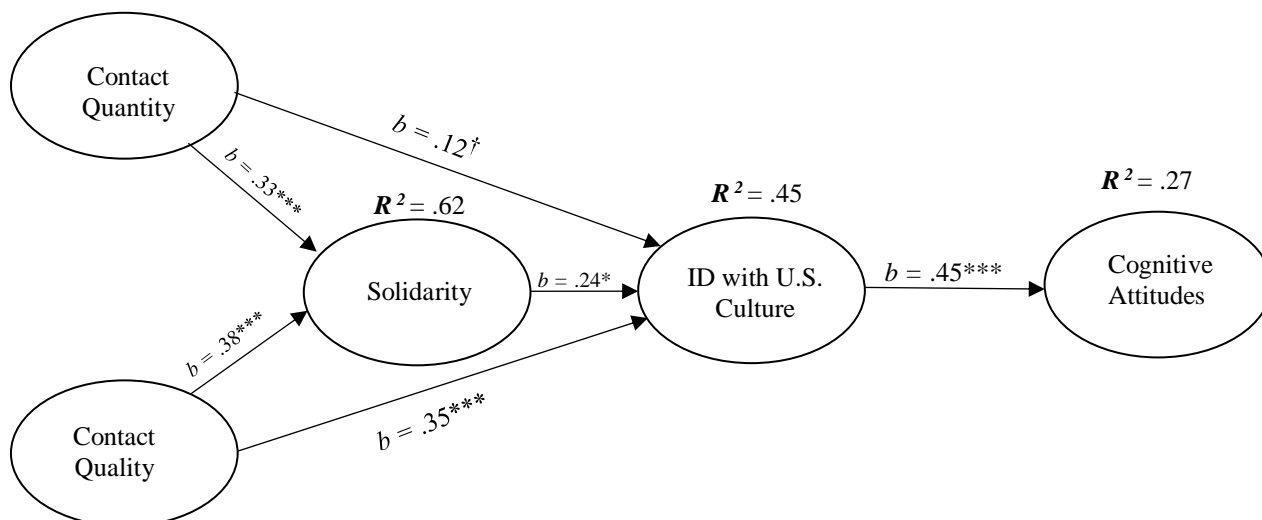
Note. ***p < .001, *p < .05, †*p* = .06; *n* = 190. Only significant paths are reported.

Summary of Research Findings

Hypothesis 1 predicted international students' perceived contact quantity and quality with their most frequent U.S. American university student contact would have significant positive indirect effects on their affective attitudes towards U.S. Americans through the serial mediators of perceived relational solidarity with the contact and identification with U.S. culture sequentially. Results indicated as contact quantity and quality increased, relational solidarity increased, which consequently increased identification with U.S. culture, and in turn, increased affective intergroup attitudes. In addition, perceived contact quantity and quality also had significant indirect effects on affective attitudes only through identification with U.S. culture, indicating contact quantity and quality significantly and positively affected identification with U.S. culture, which led to a significant positive increase in affective attitudes. Thus, Hypothesis 1 was supported.

Hypothesis 2 predicted international students' perceived contact quantity and quality with their most frequent U.S. American university student contact would have significant positive indirect effects on their behavioral attitudes towards U.S. Americans through the serial mediators of perceived relational solidarity with the contact and identification with U.S. culture sequentially. Results showed as contact quantity and quality increased, relational solidarity increased, which consequently increased identification with U.S. culture, and in turn, increased behavioral intergroup attitudes. In addition, perceived contact quantity and quality also had significant indirect effects on behavioral attitudes only through identification with U.S. culture, indicating contact quantity and quality significantly and positively affected identification with U.S. culture, which led to a significant positive increase in behavioral attitudes. Thus, Hypothesis 2 was supported. Furthermore, for Hypothesis 2, the model also showed a direct effect between perceived contact quality and behavioral attitudes, showing that when contact quality increased, it led directly to significant positive increases in behavioral attitudes.

Hypothesis 3 predicted international students' perceived contact quantity and quality with their most frequent U.S. American university student contact would have significant positive indirect effects on their cognitive attitudes towards U.S. Americans through the serial mediators of perceived relational solidarity with the contact and identification with U.S. culture. Results indicated as contact quantity and quality increased, relational solidarity increased, which consequently increased identification with U.S. culture, and in turn, increased cognitive intergroup attitudes. In addition, perceived contact quantity and quality also had significant indirect effects on cognitive attitudes only through identification with U.S. culture, indicating contact quantity and quality significantly and positively affected identification with U.S. culture,

which led to a significant positive increase in cognitive attitudes. Thus, Hypothesis 3 was also

supported.

Chapter Five:

Discussion

Guided primarily by Intergroup Contact Theory (ICT), acculturation, and the Common Ingroup Identity Model (CIIM), this study tested the effects of international students' contact quantity and quality with their most frequent U.S. American student contact on their affective, behavioral, and cognitive intergroup attitudes towards U.S. Americans through the sequential mediators of perceived relational solidarity with their most frequent contact and the participants' identification with U.S. American culture. A significant challenge affecting international students' intercultural adaptation to U.S. culture and associated intergroup attitudes is their contact with domestic U.S. students (Esses & Dovidio, 2002). The study answered calls for more research on international student intercultural adaptation experiences (e.g., Coles & Swami, 2012) and more inclusion of explanatory positive mediating variables of the relationship between intergroup contact and attitudes (e.g., Pettigrew & Tropp, 2006). First, this chapter discusses the findings of the current study in the context of relevant theories, followed by a broader discussion of the current project's theoretical contributions. Next, the chapter puts forward potential actionable guidelines and suggestions for relevant student and practitioner audiences. The chapter wraps up with a discussion of the limitations of the current study, detailed suggestions for several future research contexts, and the conclusion.

Major Findings and Explanations

All three hypotheses of the current study were supported. Results showed that international students' perceived contact quantity and contact quality with their most frequent U.S. American university student contact partner had significant positive indirect effects on their affective, behavioral, and cognitive attitudes towards U.S. Americans through the serial

mediators of perceived relational solidarity with their most frequent U.S. contact and through the international students' identification with U.S. culture. All three hypotheses also indicated that perceived contact quantity and quality had significant positive indirect effects on affective, behavioral, and cognitive attitudes *only* through identification with U.S. culture. Finally, contact quality had a significant direct effect on behavioral intergroup attitudes. These statistically significant results have several theoretical implications, which are discussed below and organized by the theoretical underpinnings of the predictor, outcome, and explanatory variables of the model, respectively: (1) Intergroup Contact Theory, (2) relational solidarity, and (3) identification with U.S. culture.

Theoretical Implications

Overall, the results of this study support and expand upon previous findings. To elaborate on this, intergroup contact and its effect on intergroup attitudes are discussed in the context of the results of this study.

Intergroup contact theory. Intergroup Contact Theory describes the process of contact resulting in attitude change through learning about the outgroup (Pettigrew, 1998). The results of this study, in general, support previous findings on intergroup contact and attitude change within intercultural contexts (Imamura, Zhang, & Shim, 2012; Imamura, Ruble, & Zhang, 2016; Liu, Zhang, & Wiebe, 2017). This study found that contact between international students and U.S. American students resulted in the former having more positive affective, behavioral, and cognitive attitudes towards U.S. Americans in general (mostly indirectly through the serial mediators), which corroborate the findings of Imamura et al. (2012). While previous research either examined the mediating role of relational solidarity or identification as a single mediator, the current study included both factors in the same model. In this respect, findings showed

support for identification with U.S. culture as a single mediator and relational solidarity and identification with U.S. culture as sequential mediators between contact and intergroup attitudes. The incorporation of these two variables in this specific sequential order has not been tested before; thus, the significant results of the current study add to the extant literature on effects of intergroup contact on intergroup attitudes. This expands on ICT by supporting the existence of the sequential indirect effect of two positive explanatory factors, relational solidarity and identification with U.S. culture, in the relationship between intergroup contact and attitudes, thus answering the call by Pettigrew (1998) to seek support for more positive explanatory factors. The support for these two sequential mediators is perhaps the most important finding of the current study for literature on ICT.

The results also expand on ICT by supporting the mechanisms (i.e., learning about the outgroup, changing behavior, generating affective ties, and ingroup reappraisal) identified by Pettigrew (1998). The significant indirect effects and one direct effect of the current model also indicate international students' affective, behavioral, and cognitive attitudes are positively increased as a result of learning about the outgroup and ingroup reappraisal, which can both be accomplished through relational solidarity and identification with U.S. culture. The study also adds to the literature by indicating that identification with U.S. culture significantly served as a sole explanatory variable between intergroup contact and intergroup attitudes. Findings in this study also showed support for a significant direct effect between contact quality and behavioral attitudes.

In general, correlation data (see Table 1) show significant positive correlations between international students' contact and their intergroup attitudes. Further, the correlation data showed significant positive correlations between the international students' relational solidarity,

identification with U.S. culture, and intergroup attitudes; as well as between relational solidarity and identification with U.S. culture, indicating that all variables in the current study are crucial for international student intergroup adaptation outcomes. Findings related to the explanatory variables used in the current model are elaborated upon in more detail in the next section.

Relational solidarity and identification with U.S. culture. Pettigrew (1998) and others have asserted friendship development is a highly important explanatory factor for the relationship between intergroup contact and intergroup attitudes. He argued that for intergroup relationships to have positive outcomes, contact "must provide the participants with the opportunity to become friends" (Pettigrew, 1998, p. 76). The current study found that indeed, relational solidarity served as an important explanatory variable in enhancing international students' identification with U.S. culture and intergroup attitudes.

Shared group identification (i.e., common ingroup identity) has also been shown to influence intergroup relationship outcomes (Eller and Abrams, 2004; Gaertner et al., 1994; Imamura & Zhang, 2014; Nier et al., 2001). For instance, Eller and Abrams (2004) discovered that perceiving a shared group identity with others lowered anxiety towards those others. Another study found white participants evaluated black people more positively when primed to share a common ingroup identity with them (Nier et al., 2001). Further, discussing the relationship between common ingroup identity and acculturation outcomes (i.e., intergroup attitudes), Imamura and Zhang (2014) argued that adjusting individuals who are successfully assimilated or integrated into their host culture achieve a common cultural group identity shared with host nationals, which is closely linked to positive interpersonal (e.g., friendship formation and liking) and intergroup (e.g., intergroup attitudes and reduced biases) outcomes. Results of the current study support this argument. In line with the Common Ingroup Identity Model

(Gaertner & Dovidio, 2000) and prior literature (e.g., Imamura & Zhang, 2014; Imamura et al., 2016), results indicated that international students' perceived identification with U.S. culture served as a second important explanatory factor between intergroup contact and intergroup attitudes. This relationship makes sense intrinsically; the more frequent and better-quality communication international student participants had with their most frequent American university student contact, the stronger their relational solidarity with the contact and identification with U.S. culture became, which was associated positively with their intergroup attitudes toward Americans as a whole. Results supporting all three hypotheses in this study also revealed an additional significant pathway between contact and intergroup attitudes, indirectly through identification with U.S. culture solely. This speaks to the importance of identification and acculturation in explaining the effect of communication on intergroup attitudes.

Lastly, the means of the major variables are all either above the mean or at the mean (see Table 1), indicating the significant positive effect of intergroup contact on intergroup attitudes. Participants reported a high degree of relational solidarity ($M = 4.93$) with their most frequent American university student contact indicating their most frequent contact partners may have also been the ones with whom they had the most positive friendship development experiences. Participants also reported a high identification with U.S. culture ($M = 5.07$), speaking to the effect of their friendships on their comfortability identifying with American culture as a whole. The international students' affective ($M = 5.36$), behavioral ($M = 5.24$), and cognitive ($M = 5.15$) attitudes were also high, exemplifying that contact quantity and quality, through relational solidarity and identification with U.S. culture, led to positive outcomes. These positive results support the significant contribution of the current study to our understanding of international students' communication experiences in the U.S.

Practical Implications

In addition to the theoretical contributions detailed above, the results of the current study also have several noteworthy practical implications. These are discussed below, organized by audiences; university students and university practitioners.

University students. The current findings can be extrapolated into several practical communicative suggestions, not just for international students in the U.S., but also for their U.S. American counterparts. These practical implications for university students are discussed below, first in relation to intergroup contact, then relational solidarity and common ingroup identity.

As predicted by Allport's (1954) original Contact Hypothesis and Pettigrew's (1998) follow-up ICT, the simple communicative act of contact, through the serial mediators of the current model, significantly and positively predicted international students' affective, behavioral, and cognitive attitudes (ABC) towards U.S. Americans as a whole in the current study. These ABC intergroup attitudes are associated with crucial intergroup and intercultural communication variables; affective attitudes describe prejudice potential, behavioral attitudes describe the potential for discriminatory behavior, and cognitive attitudes indicate potential stereotypical thoughts. Consequently, both international and domestic students at U.S. universities would benefit from increased contact, in both quantity and quality, with their respective "others". Of course, scholars like Allport (1954) and Pettigrew (1998) have predicted that contact quantity alone will not lead to positive outcomes—certain conditions must be met to explain how, why, and through which mechanisms intergroup contact can help improve intergroup attitudes. Simply advising students to "communicate more" would not be successful, they must be informed of what kinds of behaviors they should specifically engage in to ensure increased communication is

a success. This is where the current model's explanatory factors (friendship development/relational solidarity and ingroup identification) play an important practical role.

First, international and domestic students can be advised about the benefits of working to create strong bonds of relational solidarity with their counterparts (i.e., they can be counseled about the benefits of developing solid friendships). For instance, international students working in groups on class projects should be encouraged to seek out groups with U.S. students, and not just resort to forming groups of fellow students from their home countries. This suggestion works both ways—U.S. American students should try to include international students, not just in academic activities, but in recreational and other types of activities as well.

The second explanatory variable of this study, and another avenue for practical suggestions to international and domestic university students is common ingroup identification. The more international students identified with U.S. culture, the more positive their intergroup attitudes were toward Americans in general. All hypotheses additionally revealed identification with U.S. culture to be a single explanatory factor mediating the relationship between intergroup contact and attitudes. The support of this pathway suggests that international students' identification with U.S. culture (and potentially vice versa, that is, U.S. students' identification with the international students' home cultures) can help to increase positive attitudinal feelings, behaviors, and thoughts they might have towards their U.S. American counterparts (and vice versa). There are a few practical steps international students can take to help them identify more closely with U.S. culture.

The first is trying to develop friendships with U.S. Americans. The reason ingroup identity works so well to explain the relationship between intergroup contact and intergroup attitudes in the current model is that it is paired with relational solidarity/friendship formation;

together these two variables (i.e., relational solidarity and ingroup identity) served as significant explanatory sequential mediators in the current model. The more positive the interpersonal friendships are between international students and U.S. American students, the more international students will be involved in, and feel connected with, U.S. American culture. Second, international students can learn more about U.S. American culture, and thus feel a stronger identification with it, by involving themselves in as many professional and recreational activities within the culture as possible. For instance, they can join a recreational sports league, acquire a job, spend time in local coffee shops, attend local cultural events, and so on. Along with this line of reasoning, international students might also benefit from simply studying and learning more about U.S. culture, through both traditional means (e.g., history classes, reading, etc.) and through exploring their U.S. communities. All of these suggestions about ingroup identification development apply to U.S. American students also. The more U.S. American students feel connected to the cultures of their international counterparts; the stronger and more positive *their* attitudes towards international students might become.

Importantly, scholars need to allay potential fears that increased identification with U.S. culture (and vice versa for U.S. students; i.e., increased identification with international students' home cultures) will lead to the international students losing identity with their home cultures. Berry's (1997) acculturation model indicates that the most preferred outcome of intercultural adaptation is integration, an acculturative outcome resulting in positive attitudes towards *both* the international students' new cultures (e.g., U.S. culture) and their home cultures. As a result, university students who are encouraged to identify with their host culture can be reassured that this will not necessarily result in them forgetting their home cultures. Overall, the most important piece of practical advice that should be given to students to improve intergroup contact outcomes

is to engage in intergroup contact in the first place, while considering the factors addressed above.

Next is a discussion of potential practical implications of the current results for university practitioners.

University practitioners. The focus of this study on the U.S. university context means that perhaps even more important than practical implications for individual students are the implications for university practitioners who can drive change in policies and procedures that have the potential to help thousands of students each academic year. The current study and results lead to several actionable suggestions for practitioners working in offices that assist international students.

There are many types of offices and programs on U.S. university campuses explicitly designed to help international students with their adaptation to U.S. culture. These offices and programs include, but are not limited to, overarching international student associations, English language learning centers, counseling centers, new international student orientations, international student housing, and peer-to-peer mentoring services. Below are some specific guidelines for university practitioners who work in these types of offices and on these programs, based on the results of the current study. The practical suggestions offered here are organized by their relevance to the predictor and explanatory variables of the study.

To facilitate successful intergroup contact between international students and U.S. American students, practitioners can do several things. The most basic and most important is, of course, to create programming encouraging international students to interact and communicate on a meaningful level with U.S. American students, and vice versa. For instance, in a study of a Chinese student organization in the U.S., Lin (2006) found that an online Chinese magazine

created by the organization to assist its members helped to relieve pressure and stress that the Chinese students felt as a result of their new environments. Initiatives and programs like these should start as soon as possible. For example, U.S. students should be encouraged to assist with new international student recruitment and orientation initiatives. This way, international students will feel welcomed and encouraged to interact with U.S. students right away. Coles and Swami (2012) found that during the initial few weeks of international students' time at a new university, university societies (e.g., student clubs) "provided a forum where many contacts could be quickly made" (p. 97). To increase participation of U.S. students in such initiatives practitioners could specifically recruit U.S. students who might be more willing to engage international students, for example, U.S. students who have study abroad experiences or have expressed interest in other cultures in other ways, such as through their course of study or extracurricular involvement. To make these interactions meaningful, programs should be designed to encourage both relational solidarity and ingroup identification, the explanatory variables used in the current study.

Relational solidarity can be encouraged by designing programs to allow U.S. and international students to get to know each other on more than just a superficial level, including giving the students opportunities to provide each other with social support. For instance, this can be done by creating peer-to-peer mentoring groups pairing international students with individual U.S. American student mentors. In addition to building friendships, activities like these would also have the benefit of increasing ingroup identification. For example, the public midwestern university from which part of the sample of international student participants for the current study came from currently supports an international student organization named "International Peer Support" and another one named "International Leadership Team." These organizations

may assist international students to build interpersonal relationships with U.S. students and to identify more with U.S. culture.

Further, the same university mandates that certain international students with low English language proficiency participate in English conversation groups with students from their home cultures, other international students, and U.S. American students. University faculty can also play an important role in encouraging relational solidarity, for example by placing international students and U.S. students into groups together for classroom work. Lastly, social gatherings between the two groups of students that are not simply a few hours long might encourage the development of stronger friendships. As a case in point, a weekend retreat during which the students share living quarters and engage in relationship building exercises is much more likely to produce strong bonds of relational solidarity and increased common ingroup identity than just a superficial night of bowling would.

University practitioners are in a particularly well-placed position to help international students to identify more with U.S. American culture. Offices that provide services to international students can encourage the students to learn more about U.S. culture. Curricula of programs like these can be adapted to specifically focus on topics that are more likely to create a sense of connection and identification with U.S. culture. As a case in point, there could be lessons specifically highlighting how U.S. culture is similar, or perhaps has even been influenced by, the culture of the students' respective home countries/regions. Realizing there are similarities between the U.S. and their home countries might help international students to feel more connected to U.S. culture as a result. Another way university practitioners might help international students to identify more with U.S. culture is by organizing home stays with U.S. students and their families. This intimate experience has the potential to teach students much

about U.S. social norms and customs and thus can lead to greater identification with U.S. culture, while also encouraging friendship development. The next section of this chapter lists some limitations of the current study and then elaborates on several contexts for future research.

Limitations and Future Research

This section describes the limitations of the current study (i.e., non-experimental design, self-report data, MTurk sample, multicollinearity) and directions for future research contexts (i.e., student organizations and programs (ISOs), pre-acculturation and mediated contact, and Anxiety Uncertainty Management Theory (AUM)).

Limitations. The current study had several limitations. The study was not experimental, so it is difficult to assume causality between the variables in the model as strongly as could be done with an experimental design. In addition, the current survey design examined international students at a specific point in time and only at that time, thus all the data were cross-sectional and cannot predict causality as well as longitudinal data might. For example, a longitudinal study might measure the international students immediately after they arrive to the U.S. and then again prior to their graduation. Intergroup adaptation happens over time, and the effects experienced by students might be dependent on where in the intergroup adaptation process they are. Despite these limitations of the non-experimental design, the current study still provided significant statistical results by supporting the hypothesized serial mediation model.

A second limitation is that all the scales used in the study required participants to complete self-report data only, meaning there is the possibility participants were influenced by social desirability pressure and answered questions in a manner in which they thought the researcher wanted to see them answered. This might affect the explanatory value of the results.

Furthermore, the use of semantic differential scales for certain measures might have been difficult for some non-native English speakers to fully comprehend.

A third limitation of the current study is the use Amazon MTurk for part of the data collection. While there are many advantages to using the service (for a review, see Buhrmester et al., 2011), such as a larger nation-wide sample size increasing generalizability of the results and relatively well-vetted participants, there are also certain unknown factors because researchers have less control over recruitment. For instance, while the student status of the participants from the university sample can be verified through the students' university emails and classroom attendance, the self-reported university student identity for MTurk participants cannot. The final limitation of the current study is the high zero-order correlation (i.e., .83) between the affective attitudes and cognitive attitudes measures (see Table 1), this might suggest a multicollinearity problem, in that the participants may not have been able to distinguish the difference between the two measures.

All of these limitations could be addressed in future research. There are several different contexts in which future research on the topic of international student intergroup adaptation experiences could be conducted, and those contexts are described in the next section.

Future research. Many theoretical and practical contexts are ripe for future research when examining international students' adaptation experiences at U.S. universities. Below the following contexts for future research are introduced: (1) international student organizations and programs (ISOs), (2) pre-acculturation and mediated contact, and (3) Anxiety Uncertainty Management (AUM) Theory.

International student organizations. U.S. universities have student clubs or societies dedicated to assisting international students to adapt well into specific university cultures and

thus, the greater U.S. culture. These clubs can be overlapping clubs for all international students on campus or more specialized clubs for international students from specific countries or with specific related interests (e.g., academic major). Universities also offer academic programs to assist international students, such as English language classes and associated social activities. These organizations and programs, considered here as international student organizations (ISOs), allow their student members to stay connected to their home cultures through interactions with other students from the same culture while also encouraging interactions with host culture nationals (e.g., U.S. students) and even with international student co-members (i.e., international students from countries other than their own). These ISO environments can be studied further for their potential to facilitate intergroup contact.

For example, international students at U.S. universities may engage in intergroup contact with members from outgroups they meet within ISOs as a result of attending meetings and/or programs, such as official university English language conversation groups provided by an ISO aimed at improving English language skills. Lin (2006) stated that ISOs create a support network for students, which "contributes to members' enhanced control over the environment by providing tangible assistance, acceptance or assurance, and ventilation" (p. 120). In a longitudinal qualitative study of a Chinese student organization on a U.S. university campus, Lin (2006) also found services offered by the ISO helped students with informational, emotional, tangible, and intellectual support; these services included everything from helping students to shop for groceries to providing them with tips on how to communicate in colloquial English. Lacina (2002) added that "an international center [i.e., ISO] can also be helpful in organizing social events; international students can meet other international students and American students as well" and added that universities can assist "by providing an international student center with

advisers and counselors who can help students with common problems" (p. 25). Furthermore, in a study of Australian universities' ISO programs that were designed to help international students adapt to Australian culture, Owens and Loomes (2010) found international students appreciated efforts made by university staff and students to help them integrate better into society, these efforts included English language conversation partners and organized social programming. Finally, Dovidio et al. (2001) found that common group identity played a critical role in commitment to one's educational institution. Likewise, identification with the host culture (e.g., U.S.) might happen as a result of communicative experiences within ISOs and their programming.

In future studies, it might be worthwhile to ask international students if they met their U.S. American counterparts as a result of involvement in ISO programming. ISOs can help international students in the U.S. to become comfortable as they adapt to their new university culture by encouraging them to share their background with other students within the organizations, while also helping them integrate into the larger U.S. culture. Indeed, research has shown international students value university efforts to increase their social integration and that interactions with other students generate high student satisfaction, enhanced transition between cultures, and mitigate negative effects of culture shock (Owens & Loomes, 2010). Additionally, international students might meet foreign students from countries other than their own as a result of involvement in ISO programming, opening up another opportunity for future research by allowing scholars to analyze not only how international students interact with the host population (e.g., U.S. students), but also the co-culture populations (e.g., international students from different countries than their own).

University practitioners would be able to take advantage of future research about ISOs to improve the experience of international students through work their respective ISOs do. Smith and Khawaja (2011), for example, found universities may have previously adopted assimilationist attitudes toward acculturation, expecting international students to utilize the same services domestic students do. However, these services were not necessarily optimized for international students, so they recommended that "future research could investigate host universities adopting services that represent an acculturation attitude of integration" (Smith & Khawaja, 2011, p. 706). A second context for future research on international students' intergroup adaptation experiences is pre-acculturation and mediated contact.

Pre-acculturation. Pre-acculturation is essentially acculturation (i.e., learning about the new culture) that happens *before* a sojourner (e.g., international student coming to the U.S.) comes to their new host environment. Berry (1997) has argued "for many migrants, education may attune them to features of the society into which they settle; it's a kind of *pre-acculturation* [emphasis added] to the language, history, values, and norms of the new culture" (p. 22). Such pre-acculturation could be provided by programs based in the students' home countries. For example, in their study of international students in Australia, Owens and Loomes (2010) suggested that the university they studied produce a DVD about Australian culture and the Australian learning environment to aid international students' social integration into Australia; this educational film could be watched prior to the students' departures from their home countries. Due to the potential influence of pre-acculturation on international students' intercultural adaptation outcomes, the variable could be included in future research on this topic. While the current study did ask some general background questions, it did not account specifically for pre-acculturation variables. Relatedly, mediated contact, that is, international

students' exposure to characters and other representations of U.S. culture via mass media in their home cultures before coming to the states, might affect their intergroup attitudes as well (Shim et al., 2012). A third context for future research on international students' intercultural adaptation experiences is the theory of Anxiety and Uncertainty Management.

   Anxiety uncertainty management theory. Gudykunst (1993) asserted effective communication (i.e., maximizing understanding while minimizing misunderstandings) is the goal we strive for when interacting with other people face-to-face, and that effective communication is influenced (i.e., moderated/mediated) primarily by uncertainty, anxiety, and mindfulness. Anxiety has been conceptualized as an affective/emotional process—the feeling of being uneasy, tense, and worried about what might happen during communicative interactions (Gudykunst, 1993). Mindfulness refers to becoming cognitively aware of our thought processes so that we become open to new perspectives; it can serve as a way to resolve uncertainty (Langer, 1989, as cited by Gudykunst, 1993). The current study did not include anxiety as an explanatory variable between intergroup contact and attitudes because previous work has already established the role of anxiety (e.g., Voci & Hewstone, 2003). However, including the mindfulness variable associated with AUM in the future would be advisable. For instance, the current model might benefit from the inclusion of a mindfulness variable to see if it has an effect on intergroup attitude outcomes.

   Having discussed implications, limitations, and directions for future research based on the results of the current study, this chapter concludes with final thoughts about international students in the U.S. and their intergroup adaptation experiences.

Conclusion

The international student population in the United States has steadily increased since the founding of the country in the late 18th Century. Despite recent enrollment declines as a result of the 2016 election of President Trump and subsequent rhetoric and policies, U.S. institutions of higher education continue to recruit international students and, taking a long look at U.S. history and past declines as a result of immigration policies, it is reasonable to conclude international student numbers in the U.S. will generally continue to increase over the next several decades. In addition to helping themselves personally and professionally as a result of their studies in the U.S., these students provide both economic and sociocultural benefits to U.S. institutions and their constituents, the latter being especially important because it allows U.S. domestic students to learn more about the world and is an area ripe for research by communication and other social science scholars. However, these students still face many challenges related to culture shock when trying to integrate into U.S. society.

The current study sought to address some of these challenges through an intergroup and interpersonal communicative lens, specifically through the theoretical underpinnings of Intergroup Contact Theory, acculturation, and the Common Ingroup Identity Model. Results showed that increased contact quantity and contact quality between international students and their most frequent U.S. American university student contact partners had a significant indirect effect on the international students' affective, behavioral, and cognitive attitudes towards U.S. Americans in general, through the serial mediators of relational solidarity and identification with U.S. culture. There was also an indirect relationship between contact quantity and quality and intergroup attitudes through just one mediator, identification with U.S. culture. Lastly, one direct effect was found between contact quality and behavioral attitudes. These findings contribute to,

and add, to current literature on international students and their intergroup adaptation experiences. Findings of this study are also useful for university students and practitioners.

Perhaps the most important outcome of the current study, however, are the avenues it has opened up for further research using the current model in new contexts. The current study showed that relational solidarity and identification with U.S. culture both indirectly served as sequential mediators in the relationship between intergroup contact and attitudes. Future studies could expand on this by testing for additional serial mediators, particularly ones that provide positive explanations for ICT. Today, more than at any other time during the existence of the discipline of Communication Studies, scholars must continue to study experiences of international students and other sojourners because results can serve to assist them and their U.S. American counterparts to take advantage of opportunities to improve intergroup attitudes in an increasingly globalized, yet divisive, world.

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Appendix A

IRB Approval

APPROVAL OF PROTOCOL

October 3, 2017

Yan Zhang
ybzhang@ku.edu

Dear Yan Zhang:

On 10/3/2017, the IRB reviewed the following submission:

Type of Review:	Initial Study
Title of Study:	Understanding International Students' Intercultural Adaptation and Intergroup Attitudes as a Function of their Contact Across Multiple Groups
Investigator:	Yan Zhang
IRB ID:	STUDY00141449
Funding:	None
Grant ID:	None
Documents Reviewed:	• Email_Draft_1, • Flyer1_Draft, • KU Human Research Protocol-RisticAndZhang_09162017_PDF.pdf, • RisticandZhang_InformedConsent.docx, • Survey Draft

The IRB approved the study on 10/3/2017.

1. Notify HRPP about any new investigators not named in original application. Note that new investigators must take the online tutorial at https://rgs.drupal.ku.edu/human_subjects_compliance_training.
2. Any injury to a subject because of the research procedure must be reported immediately.
3. When signed consent documents are required, the primary investigator must retain the signed consent documents for at least three years past completion of the research activity.

Continuing review is not required for this project, however you are required to report any significant changes to the protocol prior to altering the project.

Please note university data security and handling requirements for your project: https://documents.ku.edu/policies/IT/DataClassificationandHandlingProceduresGuide.htm

You must use the final, watermarked version of the consent form, available under the "Documents" tab in eCompliance.

Sincerely,

Jocelyn Isley, MS, CIP
Interim IRB Administrator, KU Lawrence Campus

Appendix B

Survey Questionnaire

Section One: Demographic and Background Measures

Demographic Measures

Instructions: To start, complete the following information about yourself. There will be no right or wrong answers to any of the questions on this survey; we are simply interested in your opinion. Your responses are anonymous.

1. What is your age? _____

2. What is your sex?
- Female
- Male
- Other: Specify: **_____**

3. What is your racial/ethnic background?
- American Indian or Alaska Native
- Asian
- Black/African
- Hispanic/Latino
- Native Hawaiian or Other Pacific Islander
- White/Caucasian/European
- Other: Specify: _____

4. How many total years of education do you have so far? (e.g., 12 years = graduated high school, 13 = freshman in college, etc.). _____

Background Measures

Instructions: Complete the following information about yourself. Your responses are anonymous.

1. **This survey is designed for international and foreign exchange university students in the United States only. Please answer the question below to confirm you are an international or foreign exchange student. Are you an international or foreign exchange university student in the United States?**
   - Yes
   - No

2. **Approximately how much total time have you spent in the U.S. (Months/Years)?** _____

3. **What is your home/native country? (Country you were born in, or country you spend most time in).** _____

Section Two: General Measures

Affective Attitudes Measure

Instructions: The following sets of adjectives describe your feelings towards people from U.S. American culture. Indicate the degree to which you feel Cold-Warm, Negative-Positive, etc., towards people from U.S. American culture.

For example, if you mark somewhere between 1 and 3, that indicates you feel cold or negative towards people of U.S. American culture, marking 4 means that you feel neutral, and marking between 5 and 7 means that you feel warm or positive towards people from U.S. American culture.

Higher number indicates more positive attitudes.

In general, I feel _____ towards people from U.S American culture.

Cold	1	2	3	4	5	6	7	Warm
Negative	1	2	3	4	5	6	7	Positive
Hostile	1	2	3	4	5	6	7	Friendly
Unfavorable	1	2	3	4	5	6	7	Favorable
Contempt	1	2	3	4	5	6	7	Respect
Suspicious	1	2	3	4	5	6	7	Trusting
Disgust	1	2	3	4	5	6	7	Admiration
Unpleasant	1	2	3	4	5	6	7	Pleasant

Behavioral Attitudes Measure

Instructions: The following statements describe your willingness to engage/interact with people from U.S. American culture in different contexts. Select a number from 1 to 7 to indicate the degree to which you are willing to engage/interact with U.S. American people.

Higher number indicates you are more willing to engage/interact in that context with a U.S. American person. There are no right or wrong answers. We are simply interested in your opinions.

In general, I am willing to…

	Extremely unwilling	Unwilling	Somewhat unwilling	Neither willing or unwilling	Somewhat willing	Willing	Extremely willing
Marry a person from U.S. American culture.	1	2	3	4	5	6	7
Have a person from U.S. American culture as a close friend.	1	2	3	4	5	6	7
Confide in a person from U.S. American culture.	1	2	3	4	5	6	7
Have a person from U.S. American culture visit my home.	1	2	3	4	5	6	7
Visit a person from U.S. American culture in their home.	1	2	3	4	5	6	7
Accept a person from U.S. American culture as my boss at work.	1	2	3	4	5	6	7

Attend a cultural activity sponsored by an organization made up of people from U.S. American culture.	1	2	3	4	5	6	7

Cognitive Attitudes Measure

Instructions: The following sets of adjectives describe your thoughts towards people from U.S. American culture. Indicate the degree to which you think people from U.S. American culture are Deceitful-Truthful, Incompetent-Competent, etc.

For example, if you think U.S. Americans, in general, are competent, choose 6 or 7. If you think that U.S. Americans, in general, are incompetent, choose 1 or 2. Otherwise, choose a number in the middle (3, 4, or 5) that best represents your thoughts on how you perceive U.S. Americans in general.

Higher number indicates more positive thoughts.

In general, people from U.S. American culture are…

Incompetent	1	2	3	4	5	6	7	Competent
Deceitful	1	2	3	4	5	6	7	Truthful
Selfish	1	2	3	4	5	6	7	Unselfish
Intolerant	1	2	3	4	5	6	7	Tolerant
Not Good-natured	1	2	3	4	5	6	7	Good-natured
Insincere	1	2	3	4	5	6	7	Sincere
Not confident	1	2	3	4	5	6	7	Confident
Dependent	1	2	3	4	5	6	7	Independent
Not competitive	1	2	3	4	5	6	7	Competitive
Stupid	1	2	3	4	5	6	7	Intelligent

Aggressive	1	2	3	4	5	6	7	Not Aggressive
Conservative	1	2	3	4	5	6	7	Not Conservative
Not Hospitable	1	2	3	4	5	6	7	Hospitable
Not Patriotic	1	2	3	4	5	6	7	Patriotic
Hot-headed	1	2	3	4	5	6	7	Cool-headed

Identification with U.S. Culture Measure

Instructions: Indicate your level of agreement with the following statements describing your identification with U.S. American culture. Select a number from 1 to 7 to indicate the degree to which you agree with the statements about U.S. American culture.

Higher number indicates stronger identification with American culture.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly agree
U.S. American culture is important to me.	1	2	3	4	5	6	7
I like the lifestyle of U.S. American culture.	1	2	3	4	5	6	7
I am proud of being a part of U.S. American culture.	1	2	3	4	5	6	7
I communicate with people from U.S. American culture on a daily basis.	1	2	3	4	5	6	7

English Language Proficiency Measure

Instructions: Think of your skills with the English language, in terms of speaking, listening, reading, and writing. Then answer the questions below about how comfortable you feel with each skill by selecting a number from 1 to 7 to indicate how comfortable you feel with each statement.

Higher numbers indicate feeling more comfortable with the English language.

	Extremely uncomfortable	Uncomfortable	Somewhat uncomfortable	Neither comfortable nor uncomfortable	Somewhat comfortable	Comfortable	Extremely comfortable
How comfortable are you with speaking in English?	1	2	3	4	5	6	7
How comfortable are you with listening to English speakers?	1	2	3	4	5	6	7
How comfortable are you with reading in English?	1	2	3	4	5	6	7
How comfortable are you with writing in English?	1	2	3	4	5	6	7

Section Three: Specific Measures

Most Frequent U.S. Contact Measure

Instructions: The question below requires you to identify the college student from U.S. American culture that you have the most frequent contact with. Answer the questions honestly; your answers are confidential. Think of the college student from U.S. American culture with whom you have had the most frequent contact.

1. **Is the college student female/male/other**? _____

2. **What is his/her age?** _____

3. **What is his/her racial/ethnic background?**
   - American Indian or Alaska Native
   - Asian American
   - Black/African American
   - Hispanic/Latino American
   - Native Hawaiian or Other Pacific Islander (American)
   - White/Caucasian/European American
   - Other: Specify: _____

Contact Quantity Measure

Instructions: Think of the student from U.S. American culture with whom you have had the most frequent contact, and indicate your frequency of contact for each context.

Select the number from 1 to 7 that indicates your frequency of contact for each context.

Higher number indicates more frequent contact.

	Never	Rarely	Occasionally	Sometimes	Frequently	Usually	Always
How often do you talk and engage in informal conversation with this student?	1	2	3	4	5	6	7
How often do you study or work together with this student?	1	2	3	4	5	6	7
How often do you do things socially with this student, such as eating out, or going to the movies?	1	2	3	4	5	6	7

Contact Quality Measure

Instructions: Think of the student from U.S. American culture with whom you have had the most frequent contact, and select the number from 1 to 7 that indicates your level of agreement with each statement below as it relates to them.

Higher number indicates better quality of contact.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly agree
I value the time I have spent with this student.	1	2	3	4	5	6	7
My contact with this student has been pleasant.	1	2	3	4	5	6	7
My contact with this student has been friendly.	1	2	3	4	5	6	7

Relational Solidarity Measure

Instructions: Think again of the student from U.S. American culture with whom you have had the most frequent contact, and consider your relationship and communication in general with them. Indicate the extent to which you agree or disagree with each statement by choosing a number from 1 to 7.

For example, if you mark somewhere between 1 and 3, that indicates you are not very close to your most frequent contact, marking 4 means that you feel neutral, and marking between 5 and 7 means that you are very close to your most frequent contact.

Higher number indicates more closeness to your most frequent U.S. American college student contact.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
We are very close to each other.	1	2	3	4	5	6	7
This person has a great deal of influence over my behavior.	1	2	3	4	5	6	7
We do not really understand each other.*	1	2	3	4	5	6	7
I care about this person.	1	2	3	4	5	6	7
I dislike this person.*	1	2	3	4	5	6	7
I interact/communicate with this person much more than with most people I know.	1	2	3	4	5	6	7
We share a lot in common.	1	2	3	4	5	6	7
We do a lot of helpful things for each other.	1	2	3	4	5	6	7
We share some private ways of communicating with each other.	1	2	3	4	5	6	7

*Reverse coded.

Perceived Attitudinal Similarity Measure

Instructions: Think of the U.S American with whom you have had the most frequent contact, and choose the number below from 1 to 7 that indicates your level of agreement with each statement.

For example, if you mark somewhere between 1 and 3, that indicates you and your most frequent contact do not like the same things, marking 4 means that you feel neutral, and marking between 5 and 7 means that you and your most frequent contact like the same things.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly agree
This student and I like a lot of the same things.	1	2	3	4	5	6	7
This student and I share a lot of the same attitudes about things.	1	2	3	4	5	6	7
This student and I have very different values.*	1	2	3	4	5	6	7
This student and I are very similar.	1	2	3	4	5	6	7
This student and I have a similar outlook on life.	1	2	3	4	5	6	7

*Reverse coded.

Table 1

Means, Standard Deviations, and Zero-Order Correlations Among Primary Variables.

Variables	*M*	*SD*	1	2	3	4	5	6	7
1. Contact Quantity	4.80	1.30		.56**	.69**	.52**	.35**	.48**	.29**
2. Contact Quality	5.44	1.17			.70**	.61**	.37**	.62**	.33**
3. Relational Solidarity	4.93	.97				.58**	.34**	.47**	.27**
4. ID with U.S. Culture	5.07	1.10					.49**	.67**	.46**
5. Affective Attitudes	5.36	1.17					-	.45**	.83**
6. Behavioral Attitudes	5.24	1.04							.39**
7. Cognitive Attitudes	5.15	1.00							

**p < .01; *p < .05

Table 2

Zero-Order Correlations Among Control Variables.

Variables	1	2	3	4	5	6	7	8
1. Age		.06	.63**	.02	.30**	.09	-.02	-.04
2. Sex			-.15*	.17*	.06	-.07	-.12	-.04
3. Contact Age				.08	.16*	.12	0	.01
4. Contact Sex					.12	-.04	-.03	.05
5. Length of Stay					-	.22**	.08	.06
6. Years of Education							-.01	-.03
7. English Language								.38**
8. Attitudinal Similarity								

**p < .01; *p < .05.

Table 3

Results of t-tests Between the Two Samples on Major Variables.

Variables	University (n = 75)		MTurk (n = 158)		t	p
	M	SD	M	SD		
Con. Quan.	4.75	1.36	4.82	1.27	-0.39	>.05
Con. Qual.	5.62	1.24	5.35	1.13	1.59	>.05
Rel. Solid.	5.00	1.04	4.89	0.94	0.71	>.05
IDUS.	5.22	1.12	5.00	1.09	1.35	>.05
Aff. Att.	5.40	1.16	5.34	1.18	0.36	>.05
Beh. Att.	5.27	1.16	5.23	0.98	0.24	>.05
Cog. Att.	5.12	1.00	5.17	1.01	-0.30	>.05

Note: There were no significant differences between the university and MTurk samples on any of the major variables.

Table 4

Participants' Countries of Origin (N = 233).

Country	Frequency	Country	Frequency	Country	Frequency
China	60	Lebanon	2	Monaco	1
India	16	Paraguay	2	Myanmar	1
Germany	10	Russia	2	Nepal	1
Canada	9	Sweden	2	N. Zealand	1
Japan	9	Taiwan	2	Norway	1
South Korea	9	Venezuela	2	Peru	1
Mexico	8	"Africa"	1	Singapore	1
U.K.	7	Argentina	1	Sri Lanka	1
Vietnam	7	Australia	1	Switzerland	1
Iran	5	Austria	1		
Ireland	5	Bolivia	1		
Italy	5	Chile	1		
Spain	5	D.R. Congo	1		
"Asia/East Asia"	4	Ecuador	1		
France	4	El Salvador	1		
Jamaica	4	Estonia	1		
Malaysia	4	Ethiopia	1		
Philippines	4	Ghana	1		
Saudi Arabia	4	Greece	1		
Turkey	4	Guatemala	1		
Colombia	3	Honduras	1		
Kenya	3	Hungary	1		
Nigeria	3	Indonesia	1		
Albania	2	Iraq	1		

Table 5

Results for Indirect Effects of Contact Quantity and Contact Quality on Affective Attitudes.

Mediating Effects through Relational Solidarity (*M1*) and ID with U.S. Culture (*M2*)	Relational Solidarity (*M1*)		ID with U.S. Culture (*M2*)		*M1* & *M2* as serial mediators		Y
	Effect	SE	Effect	SE	Effect	SE	
Contact Quantity	---		.06[95%CI=.01;.13]	.031	.04[95%CI=.01;.09]	.020	**Affective Attitudes**
Contact Quality	---		.14[95%CI=.06;.27]	.052	.04[95%CI=.01;.10]	.024	**Affective Attitudes**

Table 6

Results for Indirect Effects of Contact Quantity and Contact Quality on Behavioral Attitudes.

Mediating Effects through Relational Solidarity (*M1*) and ID with U.S. Culture (*M2*)	Relational Solidarity (*M1*)		ID with U.S. Culture (*M2*)		*M1* & *M2* as serial mediators		Y
	Effect	SE	Effect	SE	Effect	SE	
Contact Quantity	---		.06[95%CI=.01;.13]	.031	.03[95%CI=.01;.07]	.016	**Behavioral Attitudes**
Contact Quality	---		.13[95%CI=.05;.24]	.048	.04[95%CI=.01;.09]	.021	**Behavioral Attitudes**

Table 7

Results for Indirect Effects of Contact Quantity and Contact Quality on Cognitive Attitudes.

Mediating Effects through Relational Solidarity (*M1*) and ID with U.S. Culture (*M2*)	Relational Solidarity (*M1*)		ID with U.S. Culture (*M2*)		*M1* & *M2* as serial mediators		Y
	Effect	SE	Effect	SE	Effect	SE	
Contact Quantity	---		.06[95%CI=.01;.13]	.031	.04[95%CI=.01;.08]	.019	**Cognitive Attitudes**
Contact Quality	---		.16[95%CI=.08;.25]	.042	.04[95%CI=.01;.10].	.023	**Cognitive Attitudes**