ABSTRACT

Samuel Austin Cavanaugh. INTERCULTURAL CONTACT, COMMUNICATION APPREHENSION, AND SOCIAL PERSPECTIVE TAKING. (Under the direction of Dr. Marion Eppler) Department of Psychology, May 2013.

This research examined the relationship between intergroup contact, intercultural communication apprehension, and social perspective taking. Participants were students taking a course which facilitates interactions between culturally diverse students around the globe via internet technologies, students taking an introductory psychology course, and students taking upper-level psychology courses. Participants in the intercultural contact condition were expected to show gains in social perspective taking and a decrease in intercultural communication apprehension when compared to the two comparison groups. No significant differences between the three groups were found for either change in intercultural communication apprehension or social perspective taking. Potential explanations for this lack of change are explored, along with a path model to explain the influence of extraversion, neuroticism, agreeableness and openness on the dependent variables.

INTERCULTURAL CONTACT, COMMUNICATION APPREHENSION, AND SOCIAL

PERSPECTIVE TAKING

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Introduction

As the world becomes flatter and communication technology becomes more widespread, the chance for interactions between people of drastically different cultures also grows. Cross-cultural interactions are no longer limited to diplomatic meetings between sovereign nations or between international tourists and natives, but can occur at almost any time, at varying levels of formality, facilitated by nothing more than an internet connection. Collaboration and commerce between nations and across cultures is an unavoidable necessity of modern living, with the success of those endeavors hinged upon the competence with which each party interacts with the other. What's more, these interactions can be beneficial, not just in terms of each group realizing their respective goals, but also at the level of the individuals involved. Persons that experience more intercultural interactions benefit not just by becoming more appealing job applicants to the growing number of employers seeking such experience (American Association of Colleges and Universities, 2007), but by building skills and breaking down barriers related to success in such interactions. As such, promoting beneficial intercultural contact is a priority for many institutions of higher education that are seeking to prepare their students for careers in an international and multicultural job market.

Intercultural Contact

There are many different ways to encourage intercultural contact. One of the more readily identifiable ways is through college study abroad programs. However, studying abroad is not always a viable option, either because of financial constraints or other limitations (Chia, Poe, & Wuensch, 2009). Another potential way this goal can be achieved is by taking courses specifically designed to engage students in intercultural contact, without them leaving their home country. Courses that require communication with culturally distinct peers can help increase

students' cultural awareness, as well as elucidate strategies for dealing with points of view that differ from their own (Furcsa, 2009). Liu and Dall'Alba (2012) used a class group project focused on interaction with culturally diverse others to encourage students to solve problems of intercultural communication. Students reported beneficial features of working on the project, including the opportunity to see things from different perspectives, as well as participating in cultural events as a foreigner. The students also indicated that the project improved their understanding of intercultural communication by giving them in-depth, first-hand experience with such communication (Liu & Dall'Alba, 2012).

While initiatives like this offer the valuable opportunity for intercultural contact, contact alone does not guarantee that the experience will be beneficial (King, Baxter Magolda, & Massé, 2011). Intercultural contact does not automatically benefit those involved (if it did, the story of the Aztecs would no doubt have a different ending), but rather the outcome can be influenced by various precursors and contexts. For example, being ethnocentric has been shown to predict poorer communication satisfaction after intercultural interactions (Neuliep, 2012). King, Baxter-Magolda, & Massé (2011) interviewed participants about their past intercultural experiences and found that anxiety caused by being in the out-group could lead to different outcomes, depending on the participant's level of intercultural maturity. More interculturally mature participants used the discomfort they experienced as a cue to further investigate the interaction, leading to increased engagement and appreciation for the others' situation and perspective. On the other hand, less interculturally mature participants tended to disengage from their interaction when they experienced anxiety or discomfort.

Courses that facilitate intercultural contact often strive to foster communication across cultures and build intercultural competence (Liu & Dall'Alba, 2012). As such, it is important to

identify additional factors that may promote or interfere with these goals. One strategy for promoting understanding between persons is by encouraging those involved to try to see things from the other's perspective, a practice called social perspective taking (Gehlbach, 2004a). Indeed, putting oneself in someone else's shoes and trying to make sense of the world from that person's perspective might be an effective strategy for achieving a more meaningful understanding of that person and what he or she might be bringing to the interaction. Failing to achieve sufficient understanding could result in improper or inappropriate communication or behavior that may have been avoided had the person considered how his or her statement or action would be perceived by the other.

Again, intercultural interactions are becoming more common and the need to better understand them also grows. Social psychologists have been studying how people from different backgrounds get along together for decades, and one major focus has been on understanding and reducing racial prejudices. In *The Nature of Prejudice*, Allport (1954) laid the groundwork for a line of research that continues today. However, the application of his theory has been largely limited to investigations of racial and ethnic differences within a single country. I propose that intergroup contact theory may also be used to make sense of intercultural interactions and for promoting intercultural contact as a positive experience.

Intergroup Contact Theory

Allport (1954) described how having contact with outgroup members can lead to reduced prejudice towards that other group when certain preconditions are met. Allport specified four necessary conditions that must be met. Within the contact context, there must be equal status between the interactants such that all involved perceive no status differences. That is, there must not be a subordinate and superordinate group, but two equal interactants. Next, there should be

common goals that both sides are working toward. Both sides of the interaction should work toward that shared goal, together, without a sense of competition. Instead of both sides racing to achieve the goal they happen to share with the other, it should be a collaborative, codependent effort that has each side relying on the other. The most notable example of how beneficial this arrangement can be comes from Sherif's (1966) Robber's Cave field study where previously antagonistic teams of boys at a summer camp were made to cooperate towards a shared goal, in turn leading to positive relations between the two teams. The final precondition for optimal intergroup contact is the support/sanction of such contact by authority figures. Such support can either be as formal legislation allowing the contact or informal approval by society at large.

Working from Allport's (1954) initial theory, Pettigrew (1998) expanded the theory to take into account the effect of time on intergroup contact effects. According to Pettigrew, optimal contact requires time for positive effects to be observed, such that long-term relationships with outgroup members are more likely to lead to contact effects than are casual acquaintanceships. Initially, Allport's four conditions (equal status, common goals, intergroup cooperation, societal approval) along with the additional condition of the potential for friendship, should be satisfied. Over time, decategorization (outgroup individual seen as relatable), salient categorization (individual's group membership is reiterated after positive contact), and recategorization (subject recategorizes themselves into a larger group that includes the outgroup individual) occur sequentially (with possible overlap) with more prejudice reduction happening at each stage. By considering the duration of contact and the various processes that may only occur after a sufficient amount of time has passed, Pettigrew attempts to explain why situations that comply with Allport's initial conditions can still fail to yield the desired results if the amount of contact is insufficient.

With an understanding of *when* intergroup contact is likely to have positive effects, researchers have refocused efforts to understand the processes behind those effects and the psychological factors involved. Pettigrew (1998) suggested some possible processes by which intergroup contact changes attitudes and reduces prejudice. These include learning about the outgroup, changing behavior, ingroup reappraisal, and generating affective ties. During contact, negative assumptions about the outgroup that underlie negative attitudes can be corrected when new information arises during the interaction which contradicts those assumptions. Contact with an outgroup member can also represent a novel social interaction for which the participant has no pre-existing scripts about how they should behave. If the new situation implies the expectation of outgroup acceptance, behaving in accordance with this expectation while still holding negative attitudes towards the outgroup can lead to cognitive dissonance (Festinger, 1957). The cognitive dissonance may then be resolved by altering the conflicting attitude. Ingroup reappraisal can happen when exposure to the different norms and customs of an outgroup leads to a more equitable opinion about the utility of each group's methods for social interactions. Instead of thinking that the ingroup's way is the only viable way of doing things, and therefore superior to the norms of other groups, the individual appreciates that different norms can be equally useful and are of equal value to the ingroup's norms. Lastly, when intergroup contact results in an affective tie with the outgroup member, such as a new friendship, the positive regard for that outgroup member can improve attitudes towards the entire outgroup.

Mediation of the Contact Effect by Perspective Taking and Anxiety

The intergroup contact effect has received so much empirical exploration that Pettigrew and Tropp (2008) conducted a meta-analysis of 515 studies examining potential mediating factors of the intergroup contact effect. The authors found reduced anxiety and increased

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perspective taking to have the greatest overall mediational influence on the contact effect, with increased knowledge having a lesser, but still important, influence on the effect. Additional support for the role of anxiety and perspective taking in the contact effect comes from Aberson and Haag (2007). The authors tested a model where intergroup contact leads to attitude change with mediation by perspective taking and intergroup anxiety. Citing evidence for the association between intergroup anxiety and negative intergroup attitudes, the authors suggest that as contact increases familiarity with the outgroup, anxiety associated with that outgroup decreases. However, since contact does not always lead to anxiety reduction, Aberson and Haag's data suggest that the reduction of anxiety through intergroup contact is mediated by perspective taking. When participants take the perspective of the outgroup member they are interacting with, it leads to a greater understanding of how that outgroup member is perceiving the interaction and in turn reduces the participant's uncertainty and associated anxiety.

Additional support for the role of anxiety and perspective taking as mediators comes from Vezzali and Giovannini (2012). Specifically, these researchers were looking at the relationship between contact with immigrants and attitudes towards immigrants, with mediation by anxiety and perspective taking, and how all these factors relate to attitudes towards an unrelated outgroup (i.e., homosexuals or the disabled). They found that contact with one outgroup can indirectly influence attitudes towards a secondary outgroup via reduced anxiety and increased perspective taking for the first and second outgroup. That is, the reduced anxiety and increased perspective taking associated with more positive attitudes towards the primary outgroup can also be associated with reduced anxiety and increased perspective taking towards a secondary outgroup, which then leads to improved attitudes towards that secondary outgroup.

Overall, these results represent a starting point for a more in depth analysis of intergroup contact effects. The next step in increasing our understanding of such effects is to take a closer look at these two mediators. The following sections will discuss perspective taking and anxiety, particularly as they relate to interacting with people from different social groups.

Perspective Taking

Being able to appreciate how another person experiences the world and in turn responds to that world is an integral part of successful social functioning. It is so important, in fact, that deficits in this ability can be considered symptomatic of some psychological disorders, such as Autism spectrum disorders (Baron-Cohen, Leslie, & Frith, 1985). This concept of imagining how someone else perceives things has been referred to by different names, including empathy, theory of mind, and role-taking (Gehlbach, 2004b). While there are various interpretations of the concept, the present research will consider perspective taking to be a cognitive process, as opposed to an emotional one (i.e., feeling empathy) and will be primarily framed using Gehlbach's (2004a) concept of a social perspective taking aptitude.

Like cognitive empathy, Gehlbach (2004a) suggested considering social perspective taking as a multidimensional aptitude that requires not only the ability to accurately decipher the thoughts and feelings of someone else in a given situation, but also the motivation or propensity to do so. He suggested that previous research purporting to measure perspective taking generally was actually only assessing one or the other of these two dimensions, accuracy or propensity, depending on the particular instruments or paradigms employed. Since being a highly accurate perspective taker does not necessarily entail a strong propensity or motivation to do perspective taking, or vice versa, it makes sense to consider the two as theoretically related but distinct

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constructs. This is supported by the finding that measures of perspective taking accuracy and propensity only correlate slightly, $r = .15$ (Gehlbach, 2004b).

Social perspective taking accuracy refers to being able to correctly infer someone else's thoughts and feelings without being directly told what they are by the perspective taking target (Gehlbach, 2004a). There is a common protocol for assessing accuracy that has been adopted by social perspective taking researchers (Gehlbach, 2004a; Gehlbach, Brinkworth, & Harris, 2011; Gehlbach, Young, & Roan, 2012), but which requires considerable time and resources to implement (see Ickes, Stinson, Bissonnette, & Garcia, 1990, for an example).

The other facet of the social perspective taking aptitude is propensity, also called motivation. The propensity to engage in social perspective taking can be understood as the frequency with which someone attempts to take the perspective of others. It is different from social perspective taking accuracy in that the former indicates quantity of perspective taking while the latter indicates the quality. Social perspective taking propensity is measured using self-report questionnaires, e.g., the Perspective Taking subscale of Davis' (1980, 1983) Interpersonal Reactivity Index or Gehlbach's revision of that subscale (Gehlbach, 2004a; Gehlbach, Brinkworth, & Wang, 2012). These scales assess how frequently respondents tend to engage in different perspective taking behaviors, such as trying to imagine how a friend feels during a disagreement or trying to understand classmates better by trying to figure out what they are thinking.

Social perspective taking has been associated with various positive outcomes, including conflict resolution, decreased prejudice, better relationships between teachers and students, and academic achievement in social studies, and self-efficacy (Gehlbach, 2004b; Gehlbach et al., 2011; Gehlbach et al., 2008; Gehlbach et al., 2012). In their meta-analysis of the intergroup

contact theory literature, Pettigrew & Tropp (2008) analyzed the effect whereby intergroup contact decreases prejudice towards outgroups with mediation by perspective taking. It would appear that contact reduces prejudice towards outgroup members by allowing individuals to replace negative misconceptions with new insights gleaned by putting themselves in the shoes of the outgroup member.

Understanding the perspective of an outgroup member, sometimes called cognitive empathy (Davis, 1994), is associated with holding more positive attitudes towards that outgroup. Having contact with outgroups tends to improve one's ability to take the perspective of outgroup members, which in turn influences attitudes held about that outgroup. However, this is not the only benefit of such contact. With mediation by perspective taking, contact with outgroup members can also help decrease the anxiety associated with interacting with outgroup members. Such anxiety can be indicative of holding less positive attitudes towards outgroups (Aberson & Haag, 2007), and is the focus of the following section.

Anxiety as Intercultural Communication Apprehension

Anxiety associated with intergroup interactions can inhibit the quality of those interactions, not just due to its association with prejudiced attitudes (Britt, Boniecki, Vescio, Biernat, & Brown, 1996), but in other ways, such as when there is anxiety about communicating. Good communication is a cornerstone of successful interactions, and anxiety about communicating across groups can compromise those interactions. Communication apprehension has been linked to various constructs relevant to intergroup contact, such as communication satisfaction (Neuliep, 2012), willingness to communicate (Lin & Rancer, 2003), and ethnocentrism (Corrigan, Penington, & McCroskey, 2006).

McCroskey, Beatty, Kearney, and Plax (1985) investigated anxiety about various forms of communication, including fear of public speaking, apprehension about speaking up during group meetings, and communicating one on one. More recently this line of research has moved into exploring the anxiety associated with intercultural communication (Hu & Fan, 2011; Neuliep & McCroskey, 1997). The present study will focus on anxiety about communicating with people from different cultural groups as an additional way of exploring anxiety's mediation of the intergroup contact effect.

Cross-cultural communications are just as susceptible to the negative effects of anxieties about communicating as intracultural communications (Gudykunst & Kim, 1997; Stephan & Stephan, 1985), but there is a great disparity in the amount research done on each. Specifically, there is a substantial body of empirical research on intracultural communication apprehension (McCroskey, 2009), but much less empirical attention has been paid to intercultural communication apprehension. For example, the Personal Report of Communication Apprehension is a repeatedly validated measure of general communication apprehension (McCroskey et al., 1985). It consists of four subscales that assess communication apprehension as it may occur when speaking in a group, speaking at a meeting, speaking in a dyad with a single partner, or speaking in public. The total score across all four subscales is meant to predict generalized communication apprehension, but like many other measures it was developed using culturally homogenous samples and does not address communication with people from different cultures (McCroskey et al., 1985). While Pederson, Tkachuk, and Allen (2008) did assess the communication apprehension of participants from different cultures, as part of their investigation of the relationship between the perceived frequency and importance of communication and

communication apprehension, they still only assessed participants' communication apprehension as it occurred within their own cultures.

Noting the absence of research on intergroup communication apprehension, Neuliep and McCroskey (1997) developed two scales for assessing this, the Personal Report of Intercultural Communication Apprehension (PRICA) and the Personal Report of Interethnic Communication Apprehension (PRECA). Anxiety that is specifically related to communication with someone from a different culture, intercultural communication apprehension, is measured by the PRICA.

Situations that contain novelty, unfamiliarity, dissimilarity, or uncertainty can lead to anxiety about communicating within that situation (Neuliep & McCroskey, 1997) and intercultural interactions are rife with such uncertainties (Neuliep & Ryan, 1998). Intercultural communication apprehension has been found to inhibit uncertainty reduction during intercultural interactions (Neuliep, 2012; Neuliep & McCroskey, 1997), has been shown to decrease the motivation to interact with others from different cultures (Lin & Rancer, 2003), is moderately correlated with ethnocentrism, homonegativity, and intolerance of religious differences (Wrench, Corrigan, McCroskey, & Punyanunt-Carter, 2006), and is an obstacle to effective intercultural communication, communication satisfaction, and cultural adaptation (Neuliep, 2012). All of these findings together suggest that this concept is especially relevant to intergroup contact research specifically and intercultural communication research generally.

Personality

In addition to exploring how intergroup contact effects are mediated by anxiety and perspective taking, the role of personality should also be addressed. Whereas the Five Factor Model is not implemented as often as other theories of personality by intergroup contact researchers, it has had some application in this realm, as well as within the realm of intercultural

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relations research. Extraversion and openness were found to have a significant, positive effect on the intercultural social self-efficacy of Vietnamese students studying in Australia (Mak & Tran, 2001). In an investigation of the cultural intelligence of undergraduates at three different universities in the United Kingdom, openness and agreeableness were both found to have a positive influence on cultural intelligence, as well as a negative association with ethnocentrism (Harrison, 2012). These examples suggest that applying the Five Factor Model of personality to intergroup contact might be a fruitful research avenue, but has so far not been as prolific as research using other personality constructs, discussed briefly below.

A more common approach has been using personality constructs that directly address individual differences in dispositions related to intergroup interaction. Sidanius & Pratto's (1999) social dominance orientation theory is meant to explain how individuals tend to perceive their ingroup in relation to outgroups, with people high on this trait believing their ingroup should be superior to outgroups and dominate them. Social dominance orientation (SDO) has been correlated with anti-black racism, cultural elitism, and political-economic conservatism (Pratto, Sidanius, Stallworth, & Malle, 1994), as well as prejudice against foreigners (Asbrock, Christ, Duckitt, & Sibley, 2012). Another commonly employed personality construct is Altemeyer's (1981) right-wing authoritarianism (RWA). The association between prejudiced attitudes and an authoritarian personality was noted decades ago by Allport (1954). In Altemeyer's conception, RWA is the extent to which an individual gives deference to authority and aggresses towards outgroups when authority supports such behavior, and like SDO, tends to be associated with prejudice and discrimination (Liebkind, Haaramo, & Jasinskaja-Lahti, 2000; Whitley, 1999).

These factors have received their fair share of attention, but are certainly not the only way to conceptualize the influence of stable intrapersonal traits on the effects of intergroup contact. One personality model that has enjoyed wide spread application, the Five Factor Model, offers an alternative framework for understanding the contact effect. The Five Factor Model consists of neuroticism, extraversion, openness, agreeableness, and conscientiousness (John, Naumann, & Soto, 2008; McCrae & Costa, 1987) and has been used only sparsely in the intergroup contact literature. Factors that have been examined within the intergroup contact context include openness (Yashima, 2010) and extraversion (Hewstone, Judd, & Sharp, 2011), with both being weakly associated with more positive intergroup contact outcomes. However, the factors of neuroticism, agreeableness, and conscientiousness should be examined more within intergroup contact situations.

Hypotheses

The present research strives to advance our current understanding of the intergroup contact effect by examining the influence of intergroup contact on intergroup anxiety and perspective taking. Given the evidence that anxiety and perspective taking exert influence on contact effects in the form of more positive attitudes about outgroups (Pettigrew & Tropp, 2008), this study examined how these factors might change over time as the result of such contact. Specifically, students taking a university course that promotes intercultural interactions were expected to show decreased levels of intercultural communication apprehension and increased perspective taking over the course of the semester. Previous research has shown a negative correlation between intercultural communication apprehension and the amount of contact participants had with people from different countries and of different races (Neuliep & McCrosky, 1997). Based on these findings, along with those of Pettigrew and Tropp's (2008)

meta-analysis, the recurring intercultural contact which students experience as part of the

intercultural contact course was expected to assuage their anxieties about interacting and

communicating with students from different cultures and to increase their tendency to put

themselves in their interaction partner's shoes.

     Hypothesis 1: Intercultural contact will lead to a decrease in intercultural communication

     apprehension.

     Hypothesis 2: Intercultural contact will lead to an increase in perspective taking.

     The second component of this study explored how different personality traits influence

intercultural communication apprehension and perspective taking by examining a path model

that incorporates all of these factors to predict participants' desire to interact with people from

different cultures. Past research has linked both openness and agreeableness to more favorable

intergroup attitudes (Flynn, 2005; Jackson & Poulsen, 2005). As noted above, perspective taking

is associated with better conflict resolution skills, and so should also be associated with

agreeableness. Similarly, since one part of the openness trait is enjoying novelty (McCrae, 1994),

perspective taking may be one method by which more open individuals try to access new things,

by making an effort to understand how someone different from themselves perceives things.

     Hypothesis 3: Openness and agreeableness will be positively associated with perspective

     taking.

     One potential source of anxiety about interacting with someone from an outgroup is the

fear of a verbal conflict (Stephan & Stephan, 1985). Since agreeable people tend to experience

fewer conflicts, they should also experience less anxiety about the potential of conflicts with

outgroups. The opposite effect would be expected for individuals who get apprehensive about

communicating one on one, since they would probably have more fear of potential verbal conflict when interacting with an outgroup member.

      Hypothesis 4: Agreeableness and dyadic communication apprehension will have positive and negative associations with intercultural communication apprehension, respectively.

      Previous work on individual differences in communication traits found that neurotic introverts demonstrated high levels of general communication apprehension (McCroskey, Heisel, & Richmond, 2001). It follows that shyer individuals predisposed to having more frequent negative emotions will tend to feel anxious about communicating in one on one interactions.

      Hypothesis 5: Extraversion and neuroticism will have negative and positive associations with dyadic communication apprehension, respectively.

Methods

Participants

Participants were 259 students at a university in the southeastern United States. The sample was 77.2% female. The sample was 67.6% Caucasian, 22.4% African American, 6.6% Asian, with 4.6% of participants identifying as Hispanic or Latino, with a mean age of 19.3 years, ranging from 17 to 35. The majority of participants were first year students, 52.5%, with 19.3% second year, 10.4% third year, 15.4% fourth year, and 2.3% in their fifth year of study or more.

Measures

Participants completed online questionnaires containing self-report measures of perspective taking and anxiety. Perspective taking was measured using Gehlbach et al.'s (2008) Social Perspective Taking motivation measure, along with the Perspective Taking subscale of Davis' (1980, 1983) Interpersonal Reactivity Index (IRI). The IRI consists of four subscales: Fantasy, Empathic Concern, Personal Distress, and Perspective Taking. The Fantasy subscale indicates the tendency to strongly identify with fictitious characters. The Empathic Concern subscale assesses the extent to which one experiences compassion for someone else going through a negative experience. The Personal Distress subscale indicates how much discomfort and anxiety one feels when seeing the negative experiences of others. These three subscales of the IRI each have seven items and use a 5-point response scale running from 1 *does not describe me well* to 5 *describes me very well.* The Perspective Taking subscale assesses the tendency to adopt the point of view of others, and was revised by Gehlbach et al. (2008) to specifically measure social perspective taking. The 7-item social perspective taking measure, which uses a 5-point response scale running from 1 *almost never* to 5 *almost all the time*, is a self-report of the

frequency with which respondents attempt to take the perspective of others, and can be understood as a measure of one's dispositional motivation to engage in the perspective taking process. Previous research using the social perspective taking measure indicated good internal reliability, Cronbach's α = .88 (Gehlbach et al., 2008). In the present study, the perspective taking subscale of the IRI had fair internal consistency, Cronbach's alpha = .75 and .76 for pre and post course, respectively. The social perspective taking measure also had good internal consistency, Cronbach's alpha = .87 and .90 for pre and post course, respectively.

General communication apprehension was measured using McCroskey et al.'s (1985) 24-item Personal Report of Communication Apprehension (PRCA). This measure includes the dyadic communication apprehension subscale, which had excellent internal consistency at both times of administration in the present study, with Cronbach's alpha = .90. To specifically tap intercultural communication apprehension, the Personal Report of Intercultural Communication Apprehension (PRICA), based on the PRCA and developed by Neuliep & McCroskey (1997), was also used. The PRICA is a 14-item self-report measure and respondents reply using a 5-point Likert scale running from 1 *strongly disagree* to 5 *strongly agree.* Previous work with this measure has reported internal reliabilities ranging from .91 to .94 (Neuliep & McCroskey, 1997; Neuliep & Ryan, 1998). In the current study, the intercultural communication apprehension measure demonstrated excellent internal consistency, Cronbach's alpha = .95 for both pre and post administration.

Personality was measured using the 44-item Big Five Inventory (John, Donahue, & Kentle, 1991; John et al., 2008). Participants used a 5-point Likert scale running from 1 *disagree strongly* to 5 *agree strongly* to indicate the extent to which they agree or disagree with statements such as "I am someone who is talkative" or "I am someone who does things efficiently." In the

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current study, each of the five subscales demonstrated acceptable internal consistency with Cronbach's alphas of .89 and .87 for extraversion, .75 and .80 for agreeableness, .77 and .76 for conscientiousness, .82 and .80 for neuroticism, and .78 and .79 for openness, for pre and post course administrations, respectively.

Attitudes about intercultural interactions were measured using a seven item scale developed specifically for the assessment of student experiences in a university course dedicated to intercultural collaboration (see Appendix A). Participants used a 5-point Likert scale running from 1 *disagree strongly* to 5 *agree strongly* to indicate the extent to which they agree or disagree with statements such as "I am interested in learning more about other countries and cultures" or "I would be comfortable having a roommate from a foreign country." In the current study the scale demonstrated fair internal consistency with Cronbach's alpha of .74 and .73 for pre and post course administrations, respectively.

Procedure

Participants were in one of three groups. The first group consisted of participants who experienced intercultural contact situations over the course of a semester ($n = 57$). The second group of participants was predominately first-year students enrolled in an introductory psychology lecture course and not receiving the intercultural contact experience ($n = 156$). The third group consisted of students taking upper-level psychology courses, also not receiving the intercultural contact experience ($n = 33$). All participants received course credit for participation in the study.

Participants who experienced intercultural interactions did so via a course called Global Understanding. The Global Understanding course is implemented via an international network of instructors at partnered universities all around the globe, a collaboration called Global Partners

in Education. These partners collaborate in teaching courses dedicated to connecting students with peers from other countries and cultures. This is done via internet-based communication technologies, such as online video conferencing, instant messaging platforms, and email, which allow students to learn directly from one another about their respective countries and cultures.

During the semester a Global Understanding class will hold a series of five to seven links with three partner institutions, one at a time, using video conferencing, instant messaging, etc., for a few weeks. Each class day in a linking series is dedicated to exploring a topic that is relevant to learning about cultural similarities and differences, starting with a discussion and comparison of student life at each institution and within the respective culture, and moving on to topics requiring more nuanced discussion, like religion and cultural interpretations of the meaning of life. Each day in class, half of the students take part in a group level discussion of the day's topic via video conference while the other half discusses the topic with their assigned partners via instant messaging on a personal computer. During a linking series, each student in the class is partnered with one or more students from the other institution. They are encouraged to communicate with their partners outside of class time by whatever means they care to use, including email and social networking websites. After finishing a linking series with one partner class, the process is repeated with a new partner at a different institution. In this way students gain international and intercultural experience without the expenses associated with a traditional study abroad program, and they gain exposure to cultures in countries not typically visited by students studying abroad, like Algeria (Chia, Poe, & Yang, 2011; Eppler & Cavanaugh, 2012). Previous research has shown this course to significantly increase students' desire to interact with culturally different others and to decrease xenophobia (Chia et al., 2009).

A pretest-posttest design was used for this study. For the pretest, participants completed all measures in the form of an online questionnaire. This was done in a classroom setting, prior to any linking sessions, in order to obtain baseline measurements. The same measures were also given to the comparison groups of students not enrolled in the course, at roughly the same point in the semester, in a classroom setting. This procedure was repeated for the posttest portion of the study at the end of the semester, with participants in the intercultural contact condition completing the measures only after they had concluded their linking sessions. The measures were also re-administered to both comparison groups at roughly the same point in time, that is, at the end of the semester.

Data Analyses

The hypothesized path model was tested using Mplus software to assess the model's fit to the data. The dependent variables entered were desire to interact with internationals, perspective taking, intercultural communication apprehension, and dyadic communication apprehension. The independent variables were openness, agreeableness, extraversion, and neuroticism. Sequential multiple regressions were conducted for each step in the model to obtain path estimates, standard errors, *t*-values, and probability values for each path. The sequential multiple regressions were: (1) Desire to interact with internationals predicted by intercultural communication apprehension and perspective taking, (2) perspective taking predicted by openness and agreeableness, (3) intercultural communication apprehension predicted by agreeableness and dyadic communication apprehension, and (4) dyadic communication apprehension predicted by extraversion and neuroticism.

Explained variance and residual variance statistics were calculated for the dependent variables in the model, as well as indices of fit of the model to the data.   The indices of fit used

to assess the model included the chi-square "goodness of fit" test, Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), Comparative Fit Index (CFI), and Tucker Lewis Index (TLI). Hu and Bentler's (1998) suggested criteria for acceptable fit index values (RMSEA < 0.06, SRMR < 0.08, CFI & TLI > 0.90) were used to evaluate overall model fit to the data.

Results

Initial scores for intercultural communication apprehension and social perspective taking were compared between groups to determine if groups were comparable on those constructs at the beginning of the study (see Appendix B, Table 1 for means). After confirming homogeneity of variance between groups, a one-way analysis of variance was employed. The groups were not significantly different on initial levels of intercultural communication apprehension or social perspective taking, $F(2, 238) = 2.04$, $p = .13$ and $F(2, 241) = 1.81$, $p = .17$, respectively. Groups were also comparable in levels of dyadic communication apprehension, $F(2, 239) = 1.25$, $p = .29$, extraversion, $F(2, 242) = 1.27$, $p = .28$, and agreeableness, $F(2, 242) = .42$, $p = .66$. There were statistically significant differences between the groups for baseline levels on the IRI perspective taking subscale, $F(2, 241) = 6.12$, $p = .003$, neuroticism, $F(2, 242) = 3.99$ $p = .02$, and openness, $F(2, 242) = 3.56$, $p = .03$. These significant differences were due to the sample of introductory psychology course students having lower IRI perspective taking, higher neuroticism, and lower openness, compared to the other two groups. The intro psychology course students also had slightly less interest in interacting with internationals at baseline compared to the other two groups, $F(2, 222) = 5.23$, $p = .006$.

To test for changes from pretest to posttest, change scores for intercultural communication apprehension for each participant were calculated as the difference between their intercultural communication apprehension score at the beginning of the semester and their intercultural communication apprehension score at the end. A lack of homogeneity of variance between the three groups for intercultural communication apprehension change scores suggested using the Kruskal-Wallis ANOVA to compare groups. There was no significant difference in intercultural communication apprehension change scores between the groups, $\chi^2 (2, 236) = .470$,

$p = .79$, suggesting no main effect of participating in the Global Understanding course on intercultural communication apprehension.

Change scores for social perspective taking were calculated as the difference between participants' social perspective taking score at the end of the semester and their social perspective taking score at the beginning of the semester such that change scores greater than zero indicate an increase in social perspective taking. Given the lack of homogeneity of variance between groups on this variable, Kruskal-Wallis ANOVA was used to compare the groups. The difference in change scores for social perspective taking between groups failed to reach significance, $\chi^2 (2, 242) = 2.50$, $p = .286$.

After testing the first two hypotheses, hypotheses three, four, and five were tested by examining zero-order correlations, standardized parameter estimates (i.e., path coefficients), standard errors, and t statistics for each of the hypothesized effects. Explained variance (i.e., R^2) for the dependent variables were also examined (see Appendix B, Tables 2 and 3).

Perspective taking had a significant relationship with openness ($\beta = .24$, $t = 4.36$, $p < .001$) and agreeableness ($\beta = .43$, $t = 8.31$, $p < .001$), supporting Hypothesis 3, that openness and agreeableness would predict perspective taking. Together these two personality factors accounted for 29 percent of the variance in perspective taking.

Intercultural communication apprehension had a significant negative relationship with agreeableness ($\beta = -.15$, $t = 2.73$, $p = .006$) and a significant positive relationship with dyadic communication apprehension ($\beta = .56$, $t = 12.50$, $p < .001$), supporting Hypothesis 4. Dyadic communication apprehension and agreeableness together accounted for 36 percent of the observed variance in intercultural communication apprehension.

Hypothesis 5 was supported by finding dyadic communication apprehension to have a significant negative relationship with extraversion ($\beta = -.46$, $t = 9.65$, $p < .001$) and a significant, positive relationship with neuroticism ($\beta = .39$, $t = 7.84$, $p < .001$). Neuroticism and extraversion together accounted for 49 percent of the variance in dyadic communication apprehension.

Overall, model fit indices suggested the data fit the model well, (*CFI* = .970, *RMSEA* = .062, 90% CI for *RMSEA* = .021 to .098, *SRMR* = .039), explaining a quarter of the variance in participants' desire to interact with people from different countries and cultures, $R^2 = .244$ (See Appendix B, Figure 1).

Discussion

After a semester of internet-facilitated interactions with students from all over the globe, what can be said about the effects of these interactions on American students' apprehension and perspective taking? From the beginning of the semester to the end, decreased communication anxiety and increased perspective taking resulting from exposure to and interaction with international peers were not observed. Additionally, participants' desire to interact with internationals also remained unchanged, regardless of experiencing intercultural contact or not. These results seem to fly in the face of intergroup contact research implicating contact as a strategy for improving attitudes by increasing perspective taking and decreasing anxiety (Pettigrew & Tropp, 2008). Two potential explanations for the lack of change in these outcome variables present themselves. The first explanation might be that intercultural communication apprehension and perspective taking should be understood as stable traits and not dynamic states. The second explanation is that the necessary preconditions for intergroup contact to be effective were not sufficiently met. Each of these potential explanations are explored further below.

The first explanation of these results might be that these constructs are not psychological states that can be easily modified, but instead are stable psychological traits that should not be expected to change over a single semester. In this view, perspective taking and intercultural communication apprehension are immutable intrapersonal traits that may serve to moderate the relationship between other psychological factors, but are not themselves influenced by those factors. This explanation is dubious and easily undercut by contrary evidence showing that it is possible to experimentally manipulate these factors within an individual. Gehlbach presents evidence for the malleability of perspective taking in his work on the role of this factor in schools (Gehlbach et al., 2008; Gehlbach et al., 2011; but see also Gehlbach, Young, et al.,

2012). Pettigrew, Tropp, Wagner, and Christ (2011) present meta-analytic evidence that

intergroup anxiety actually changes as a result of intergroup contact, as opposed to such anxiety

simply being associated with less contact experience. However, when considering intercultural

communication apprehension, used in the present study as an indication of intergroup anxiety,

there is less evidence for its malleability. While McCroskey (2009) maintains that

communication apprehension can be changed via instruction, longitudinal research on

intercultural communication apprehension does not corroborate this (Corrigan et al., 2006).

Future work should focus on using longitudinal methods to determine the potential for change in

intercultural communication apprehension over time.

  The second explanation for the lack of change in outcome variables after contact focuses

on the contact itself. If the preconditions of equal status, common goals, cooperation, sanction

by authority, and a quantity and quality of contact sufficient for friendship formation were not

met, then it would not be surprising if those mediators associated with the intergroup contact

effect were not influenced. The first precondition stipulates equal status between interactants.

On the face of it, the Global Understanding course experience implies equal status between the

students involved. Before contact occurs, students learn that they will be connecting with

students at other universities, and so students come into the experience expecting to interact with

people similar to themselves, other college students, as opposed to older working professionals

or completely uneducated young people. During the interactions, students are given equal

opportunities to engage one another with questions and answers. While these conditions are

supposed to be the standard for all of the interactions during the course, in reality there is great

variability across sections of the course, and so there is room to argue that the perception of

equal status may not have occurred. For example, given that most students in the sample were

native English speakers interacting with non-native English speakers, the difference in language skills could have lead our native English speaking participants to view their partners less positively (Lindemann, 2002), with these less positive views in turn leading to a perception of differential status.

The next conditions to consider would be if there was a shared goal, and if participants worked cooperatively with their partners toward that goal. One of the standard components of the course is a collaborative project that students must complete with the help of their linking partner as part of their final grade. The collaborative project gives students a goal to work towards alongside their international partners during the course of their links. Ideally, partners are communicating with each other repeatedly while they work on their project, such that the final product represents collaboration with equal effort from each partner. Unfortunately there are various reasons why some students do not complete the project. Some students do not maintain communication with their partner outside of class time, either due to their partner's lack of readily available internet access (not uncommon for partners in lesser developed countries), the participant's disliking of that particular partner, a lack of motivation to complete coursework, or some combination of the three. Additionally, if the student's instructor fails to emphasize the collaborative project, then even students who would be willing and able to do it may not. Each of these factors tend to vary across the many sections of GU classes being taught in a given semester and so the precondition of a shared goal, along with that of cooperative effort towards said goal, no doubt varied greatly in the degree to which it was satisfied for each participants in the present study.

The next precondition to consider is the perception of sanction by authority or society. Implementing the Global Understanding course requires a nontrivial amount of resources (time,

technology, travel) and cannot be achieved without the sustained administrative support of host institutions (Chia, Poe, & Singh, 2008). The schools that participate work hard before, during, and after the course to ensure their students the opportunity to take part. All this makes it hard to imagine that students would view their interactions with partners as happening outside the sanction of authority or society. As such, the precondition of authoritative sanction seems to have been met.

At this point, Allport's (1954) initial four preconditions for beneficial intergroup contact as they pertain to the present study have been discussed, with each being satisfied to various degrees. This leaves us to consider the additional precondition described by Pettigrew (1998) that contact be of a sufficient quantity and quality as to allow for participants be become friends with their partners. As alluded to above, there was potential for great variability not only in how much contact participants may have actually had with their partners, but also in the quality of that contact. Ideally, participants spoke with their partner in a group video conference setting once a week for an hour, chatted via an instant messaging platform, one on one, once a week for an hour, in addition to emails or other regular communications when not in class. However, a participant exerting the minimal effort required in class may have had contact with a single partner for a mere six hours, excluding email contact, during their connection period (and providing that student along with their partner never missed a day of class). After the connection period, participants were not obligated to stay in contact with their partners, though some do (Eppler & Cavanaugh, 2012). Participants had connections with up to three different partners over the course of the semester (provided their partner's institution was not experiencing technical problems or otherwise being unable to establish links during class), potentially amounting to eighteen total hours of intercultural contact. Hopefully, participants had additional

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contact with their partners outside of class time, either via email, social networking websites, or additional instant messaging sessions, in the interest of completing their collaborative projects. Some participants undoubtedly had significantly less contact than others for numerous reasons, such as technology problems occurring during linking sessions, partner absences from class, etc. Since there was no way to verify the amount or quality of contact each participant actually had, it is difficult to refute the explanation that the intergroup contact participants experienced was not of the sort that leads to beneficial contact effects.

This study also examined the influence of Big Five personality factors on two known mediators of the intergroup contact effect, perspective taking and anxiety. In the model, agreeableness and openness predicted perspective taking, with agreeableness having a slightly greater influence on perspective taking than openness. In addition to being associated with more positive attitudes towards outgroups, these personality traits also predict having higher quality intergroup contact experiences (Flynn, 2005; Jackson & Poulsen, 2005). The present model would suggest the relationship between agreeableness, openness, positive outgroup attitudes, and favorable contact experiences is mediated by perspective taking. An individual high on these personality traits should be expected to get along well with someone unfamiliar and different from themselves by virtue of being more prone to cooperate generally and not being opposed to novel experiences, but especially when practicing perspective taking.

The other part of the model explains how extraversion and neuroticism, along with agreeableness, influence intergroup anxiety, measured as the amount of anxiety experienced when communicating across cultural boundaries. This explanation is twofold. First, extraversion and neuroticism were found to have positive and negative influences on dyadic communication apprehension, respectively, such that highly introverted and neurotic participants tended to

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experience more anxiety when communicating one on one. These findings replicate the results of other studies where neurotic introverts demonstrated higher levels of general communication apprehension (McCroskey et al., 2001). In the next step of the model, dyadic communication apprehension and agreeableness exert opposite influences on intercultural communication apprehension. The association between dyadic communication apprehension and intercultural communication apprehension is simple enough to explain in and of itself since both can be thought of as different flavors of one overarching psychological disposition, the general tendency to feel anxious about communicating. The negative influence of agreeableness on intercultural communication apprehension is less obvious. One explanation could be that people who are more agreeable tend to seek cooperative and harmonious relations with others, and so feel more positive about communicating across cultures as a potential way to engendering peaceful and cooperative intercultural relationships.

Taken together, these paths elucidate how personality factors can influence two key mediators of the intergroup contact effect. Previous research has already shown that those who will benefit from intergroup contact experiences will be those who do not tend to get anxious about such experiences and who also try to consider what the other person is thinking and feeling during the interaction. This study goes a step further by indicating in terms of personality the sort of person who is likely to do the things that make intergroup interactions beneficial. Specifically this person will tend to be an emotionally stable, open, and agreeable extrovert. People of this sort will be more likely to enjoy improved attitudes towards an outgroup as the result of interacting with a member of that group. However, another question (beyond the scope of the present research) is, would the person matching this personality profile be in need of contact experiences in order to decrease prejudices, or might these folks be less biased in the first place?

Implications

      This study has implications not just for the research literature, but also for educators focused on setting up their pupils for future success in our increasingly interconnected world. Fostering multicultural competence and promoting appreciation for human diversity by giving students firsthand experience with peers unlike themselves may seem like a simple formula for achieving that future success, but there are more variables involved than meet the eye. Decreasing student prejudice via intergroup contact can also aid in accomplishing the educator's superordinate goal, but steps must be taken to ensure that contact really will be beneficial, such as satisfying the preconditions for beneficial contact and encouraging ongoing interaction after the initial contact. By taking these steps educators are more likely to influence how their students tend to feel about outgroups, which in turn serves to better prepare those same students to live and work in our increasingly multicultural world. These teachers can best serve their students by setting them up for success in their intercultural interactions instead of thrusting unprepared pupils into a sink or swim scenario that could actually lead to maintaining or even increasing their prejudice against outgroups (Amir, 1969).

      This study also has implications for businesses preparing to expand their operations across national borders and cultural divides. When prejudiced attitudes can inhibit collaboration across cultures, it would be beneficial to identify personnel with the sort of disposition associated with developing positive attitudes as the result of contact. This would be especially true if no one in the organization has previous intercultural experience. By considering the personality traits associated with perspective taking and intercultural communication apprehension, the organization can identify those individuals mostly likely to succeed in the requisite cross-cultural interactions, which in turn allows that business to put their best foot forward, as it were. The

other side of this same coin would be identifying the individuals that stand to gain the most benefit from multicultural contact experiences. Those who tend to hold more negative attitudes towards people from different countries and cultures, along with those who exhibit higher levels of intergroup anxiety and lower levels of perspective taking are likely to see greater improvements as the result of intergroup contact when compared to less prejudiced folks who do a lot of perspective taking and exhibit lower levels of intergroup anxiety.

Limitations and Future Directions

The most blatant limitation to the current study was the probable inconsistency in both contact quantity and contact quality across participants in the contact condition. If the contact that participants received was not of sufficient quantity or quality, the lack of expected effects on perspective taking and anxiety is understandable. Basically the study lacked a viable manipulation check of the contact condition.

Future research on courses with this same sort of international focus should emphasize maintaining adequate and consistent contact quality and quantity. The quantity and quality of intergroup contact both influence the psychological outcomes experienced by participants, but it is the quality of that contact that matters most. Jackson and Poulsen (2005) found contact quality and quantity to predict White participants' attitudes about Black people, with the quality of their contact experiences being stronger predictors of attitude than the quantity. In an earlier study, researchers found similar results when investigating the effect of contact between Hindu participants and Muslim participants on intergroup anxiety, with quality of contact having a greater effect than quantity of contact in predicting anxiety (Islam & Hewstone, 1993). Aberson & Haag (2007) observed the same pattern of greater intergroup anxiety reduction for White participants through contact quality as opposed to contact quantity with Black people. These

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findings lend credence to the hypothesis that intergroup contact is most beneficial when it is of a quality likely to lead to the formation of positive affective ties in the form of friendships (Swart, Hewstone, Christ, & Vocit, 2011; Turner, Hewstone, Voci, & Vonofakou, 2008).

Given the aforementioned research suggesting the relevance of intergroup friendships for contact effects to be observed, knowing whether or not Global Understanding participants got along with their partner, if there was animosity between them, or how close they felt to their partner, will allow a more nuanced evaluation of the effects this sort of intergroup contact can have. In the past, some students reported becoming good friends with their GU partners and staying in touch with them even after the course was over, while others express no such affinity and can even be heard complaining about having to work with their partner during in-class linking sessions. Future research could benefit by directly assessing whether or not necessary preconditions for optimal contact were met. This could be accomplished using a questionnaire that explicitly asks participants to self-report if they felt they were equal to their partners, the extent to which they actually worked collaboratively with their partners on their class projects, if they felt their interactions would be approved of by society at large, and if they believe they will become friends with their partners as a result of taking the course. This information would allow future researchers to directly address the issue of whether contact was of sufficient quality and quantity.

Conclusion

This study sought to contribute to the intergroup relations literature by exploring the intergroup contact hypothesis as it relates to contact with various dissimilar groups, i.e. different nationalities, different cultural backgrounds, etc., as opposed to contact with a single specific outgroup. The results suggest that having a plethora of contact experiences with numerous

diverse others may not lead to positive attitudes towards outgroups generally in the same way that prolonged contact with a specific group member can lead to more positive attitudes towards that group. This is largely due to the necessity of high quality contact for attitudes to be influenced, as opposed to a large quantity of superficial contact. Prejudice is decreased through communication and perspective taking, which in turn are influenced by individual differences in personality traits. By identifying relevant traits and optimizing contact conditions, it is possible to select the individuals most likely to benefit from interactions and to also ensure that the interactions themselves will be beneficial.

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Appendix A: IRB Materials

EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board Office
4N-70 Brody Medical Sciences Building· Mail Stop 682
600 Moye Boulevard · Greenville, NC 27834
Office **252-744-2914** · Fax **252-744-2284** · **www.ecu.edu/irb**

Notification of Initial Approval: Expedited

From: Social/Behavioral IRB

To: Samuel Cavanaugh

CC:
Marion Eppler
Marion Eppler

Date: 8/22/2012

Re: UMCIRB 12-001508
Personality and Intercultural Communication

I am pleased to inform you that your Expedited Application was approved. Approval of the study and any consent form(s) is for the period of 8/22/2012 to 8/21/2013. The research study is eligible for review under expedited category #7. The Chairperson (or designee) deemed this study no more than minimal risk.

Changes to this approved research may not be initiated without UMCIRB review except when necessary to eliminate an apparent immediate hazard to the participant. All unanticipated problems involving risks to participants and others must be promptly reported to the UMCIRB. The investigator must submit a continuing review/closure application to the UMCIRB prior to the date of study expiration. The Investigator must adhere to all reporting requirements for this study.

The approval includes the following items:

Name	Description
Cavanaugh_Theis_Proposal.docx	History	Study Protocol or Grant Application
Consent.doc	History	Consent Forms
Survey items for IRB.docx	History	Surveys and Questionnaires

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

Appendix B: Measures

Desire to Interact with Internationals

1 *"strongly disagree"* to 5 *"strongly agree"*

(-): Item is reverse scored

- I am interested in learning more about other countries and cultures.

- Most of my friends come from a background similar to my own. (-)

- I enjoy making friends with people who are different from me.

- It is difficult for me to feel close to people who have a different religion from mine. (-)

- One negative effect of interacting with people from different cultures is that it will cause me to question my own values and beliefs. (-)

- I would be comfortable having a roommate from a foreign country.

- I feel comfortable traveling to places outside my own country.

Appendix C: Figures and Tables

Figure 1. Path model predicting Desire to Interact from measures of communication apprehension, perspective taking, personality factors. All path weights significant, $p < .05$.
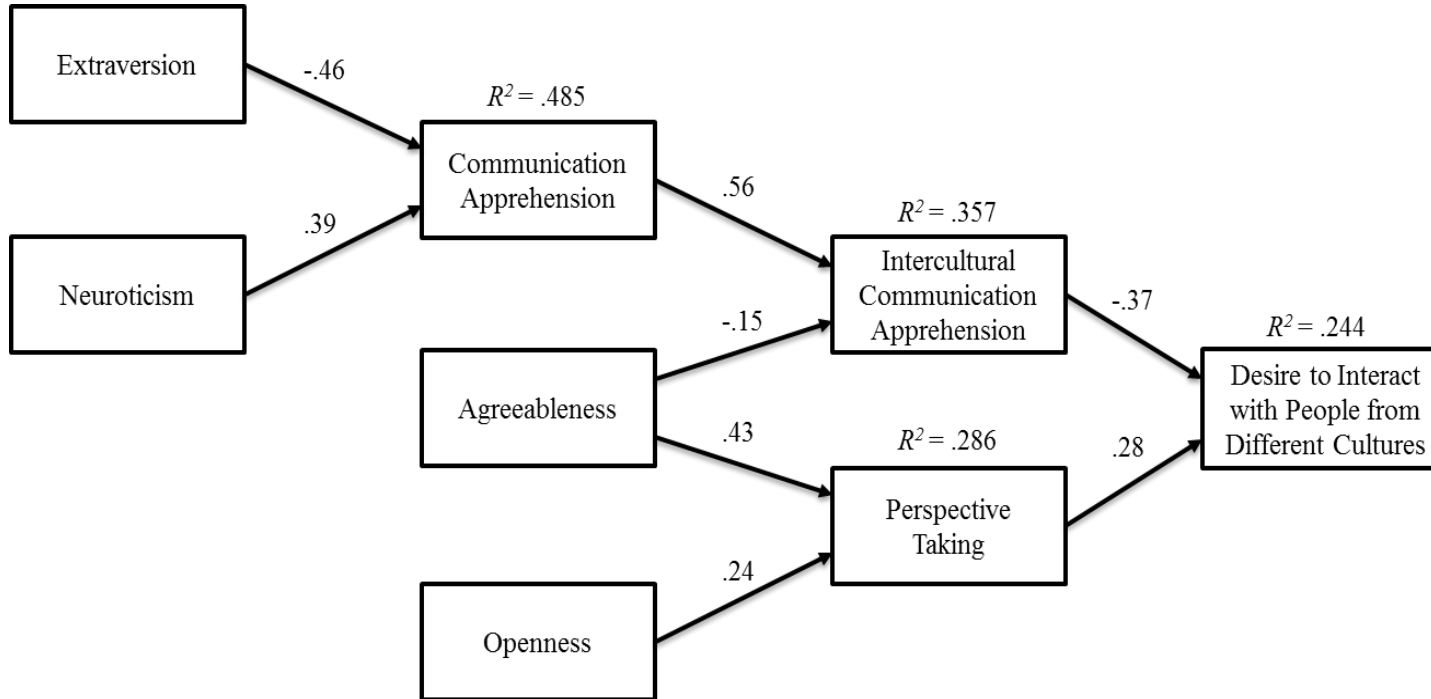
Table 1

Pre and Post Test Means and Standard Deviations

	PT		ICA	
Condition	Pre	Post	Pre	Post
Global Understanding	3.32 (.71)	3.40 (.69)	2.18 (.62)	2.34 (.64)
Intro Psychology	3.26 (.76)	3.24 (.72)	2.18 (.62)	2.30 (.67)
Capstone Psychology	3.53 (.61)	3.63 (.62)	1.94 (.68)	1.97 (.57)

Note. PT = perspective taking, ICA = intercultural communication apprehension

Table 2

Means, Standard Deviations, and Zero-Order Correlations of Variables in the Path Analysis (N = 225)

Variable	*M*	*SD*	1	2	3	4	5	6	7	8
1. PT	3.43	.632	--							
2. DCA	2.41	.782	-.22**	--						
3. ICA	2.14	.637	-.25**	.59**	--					
4. DI	25.67	4.29	.36*	-.12	-.42**	--				
5. Ext	3.46	.850	.06	-.59**	-.35**	.05	--			
6. Ag	3.98	.613	.49**	-.17	-.22**	.22**	.06	--		
7. Neu	2.79	.751	-.27**	.52**	.37**	-.14*	-.30**	-.30**	--	
8. Op	3.44	.612	.33**	-.22**	-.31**	.39**	.32**	.16*	-.21*	--

Note. PT = perspective taking; DCA = dyad communication apprehension; ICA = intercultural communication apprehension; DI = desire to interact with internationals; Ext = extraversion; Ag = agreeableness; Neu = neuroticism; Op = openness. * $p < .05$ ** $p < .01$

Table 3

Decomposition of Effects From the Path Analysis

Effect	(Intercept) Standardized Estimate	*SE*	*t*	R^2
DI	(0.02)			.24***
on ICA	-.37	.056	-6.58***	
on PT	.28	.058	4.87***	
ICA	(0.02)			.36***
on DCA	.56	.045	12.49***	
on Ag	-.15	.054	-2.73**	
DCA	(-0.01)			.49***
on Ext	-.46	.048	-9.65***	
on Neu	.39	.049	7.84***	
PT	(0.71)			.29***
on Ag	.43	.052	8.31***	
on Op	.24	.056	4.36***	

Note. PT = perspective taking; DCA = dyad communication apprehension; ICA = intercultural communication apprehension; DI = desire to interact with internationals; Ext = extraversion; Ag = agreeableness; Neu = neuroticism; Op = openness* $p < .05$ ** $p < .01$ *** $p < .001$